

**Sexually
Transmitted
Infection
Surveillance
2021:
Gonococcal Isolate Surveillance Project
Site-Specific Profiles**

**Division of STD Prevention
December 2023**

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL CENTER FOR HIV, VIRAL HEPATITIS, STD, AND TB PREVENTION
DIVISION OF STD PREVENTION
ATLANTA, GEORGIA 30329-4027**

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Web Site

The online version of this report is available at <https://www.cdc.gov/std/statistics/gisp-profiles/default.htm>.

2021 Gonococcal Isolate Surveillance Project Clinical Sites and Years Participated

Albuquerque, New Mexico (1987–2021)	Greensboro, North Carolina (2002–2021)	New York, New York (2006–2021)
Anchorage, Alaska (1987–2003, 2018–2021)	Honolulu, Hawaii (1987–2021)	Orange County, California (1991–2021)
Birmingham, Alabama (1987–2021)	Indianapolis, Indiana (2013–2021)	Philadelphia, Pennsylvania (1987–2021)
Baltimore, Maryland (1987–2013, 2019–2021)	Jackson, Mississippi (2018–2021)	Phoenix, Arizona (1987–2021)
Buffalo, New York (2014–2021)	Kansas City, Missouri (1991–2001, 2007–2021)	Pontiac, Michigan (2012–2021)
Camden, New Jersey (2019–2021)	Las Vegas, Nevada (2002–2021)	Portland, Oregon (1987–2021)
Chicago, Illinois (1996–2021)	Los Angeles, California (2003–2021)	San Diego, California (1987–2021)
Cleveland, Ohio (1991–2021)	Miami, Florida (1998–2013, 2018–2021)	San Francisco, California (1987–2021)
Columbus, Ohio (2012–2021)	Milwaukee, Wisconsin (2018–2021)	Seattle, Washington (1987–2021)
Dallas, Texas (2000–2021)	Minneapolis, Minnesota (1992–2021)	Tripler Army Medical Center, Hawaii (2001–2021)
Denver, Colorado (1987–2013, 2018–2021)	New Orleans, Louisiana (1987–2021)	Washington, District of Columbia (2018–2021)

2021 Gonococcal Isolate Surveillance Project Regional Laboratories

Maryland Department of Health and Mental Hygiene <i>Baltimore, Maryland</i>
Tennessee Department of Health <i>Nashville, Tennessee</i>
Utah Department of Health <i>Salt Lake City, Utah</i>
Washington State Department of Health <i>Seattle, Washington</i>

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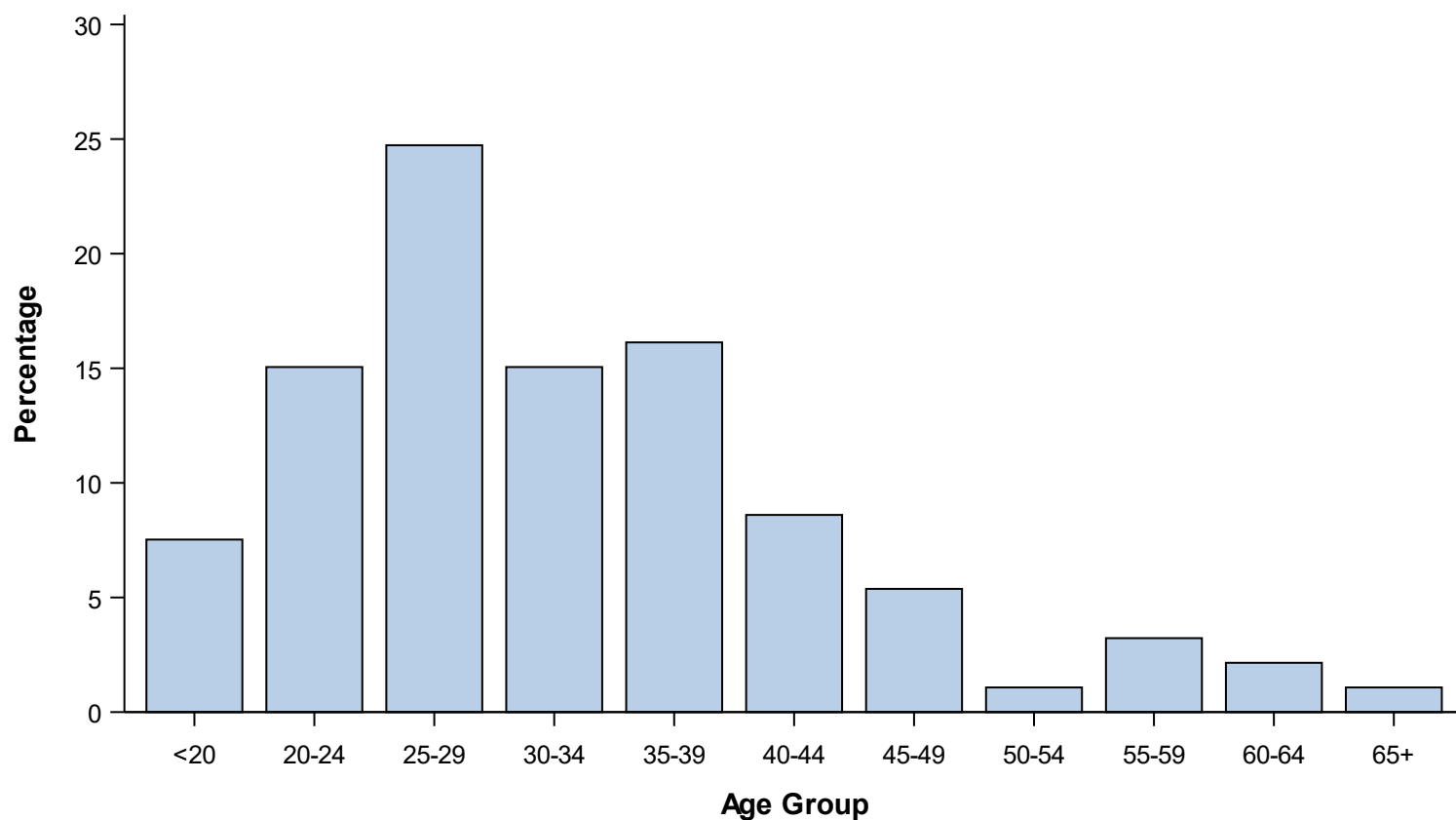
2021 Gonococcal Isolate Surveillance Project Site-Specific Profiles

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- Figure C Percentage of Participants Identifying as Men who Have Sex with Men, Gonococcal Isolate Surveillance Project (GISP), 2002–2021
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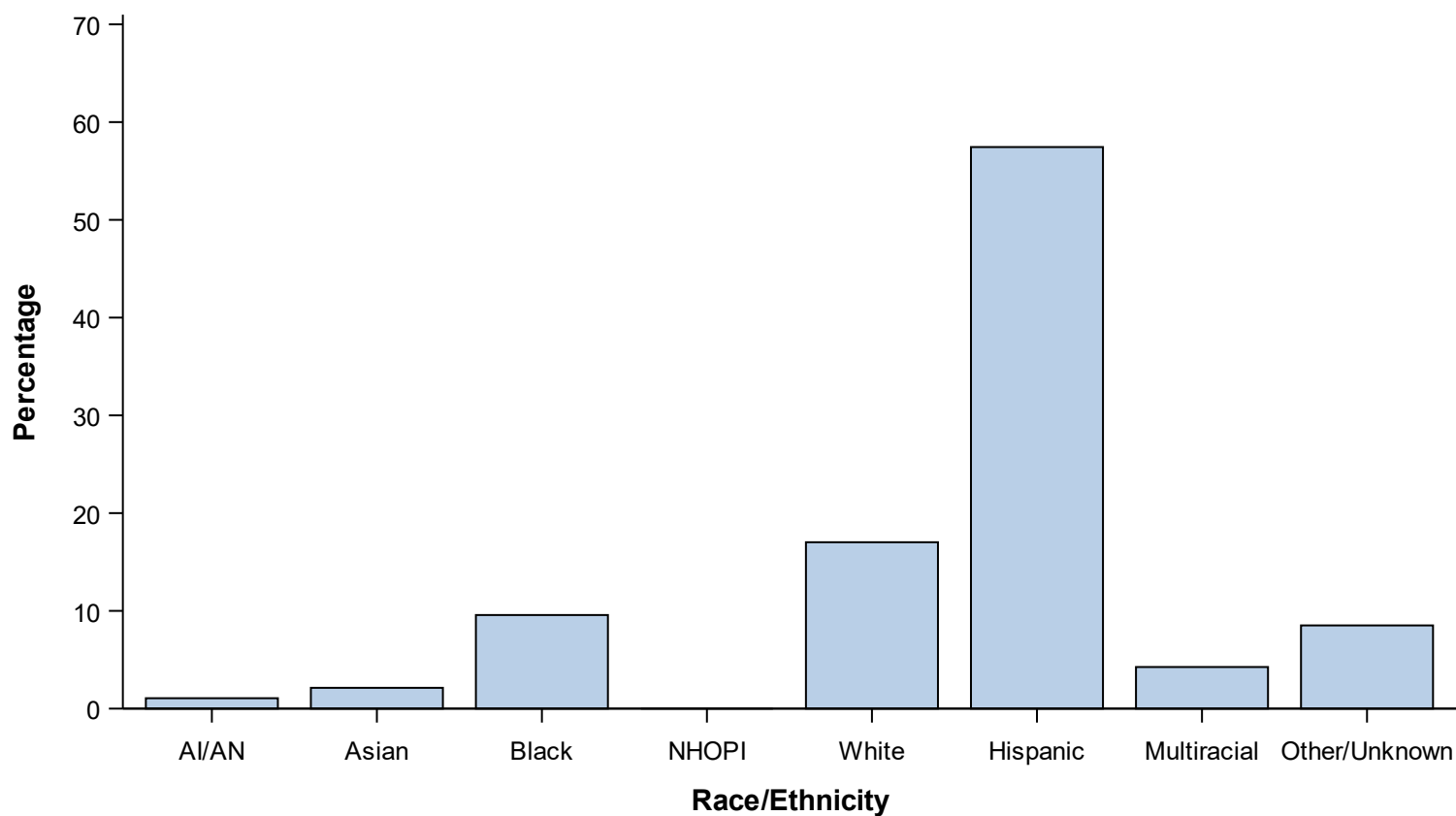
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
7 (7.5)	14 (15.1)	23 (24.7)	14 (15.1)	15 (16.1)	8 (8.6)	5 (5.4)	1 (1.1)	3 (3.2)	2 (2.2)	1 (1.1)	93

Note: Cases with unknown age were excluded.

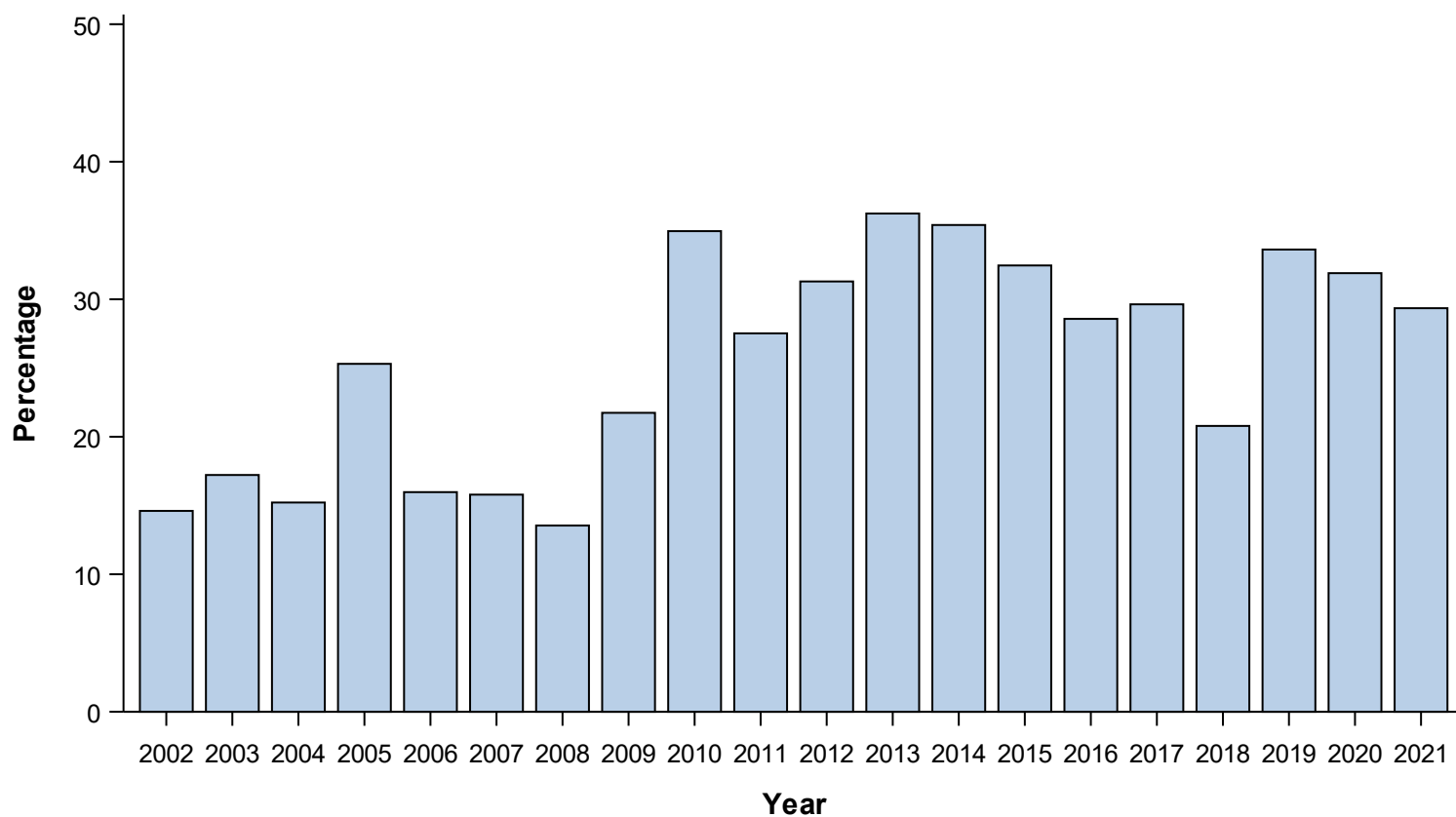
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
1 (1.1)	2 (2.1)	9 (9.6)	0 (0.0)	16 (17.0)	54 (57.4)	4 (4.3)	8 (8.5)	94

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Albuquerque, New Mexico, 2002-2021

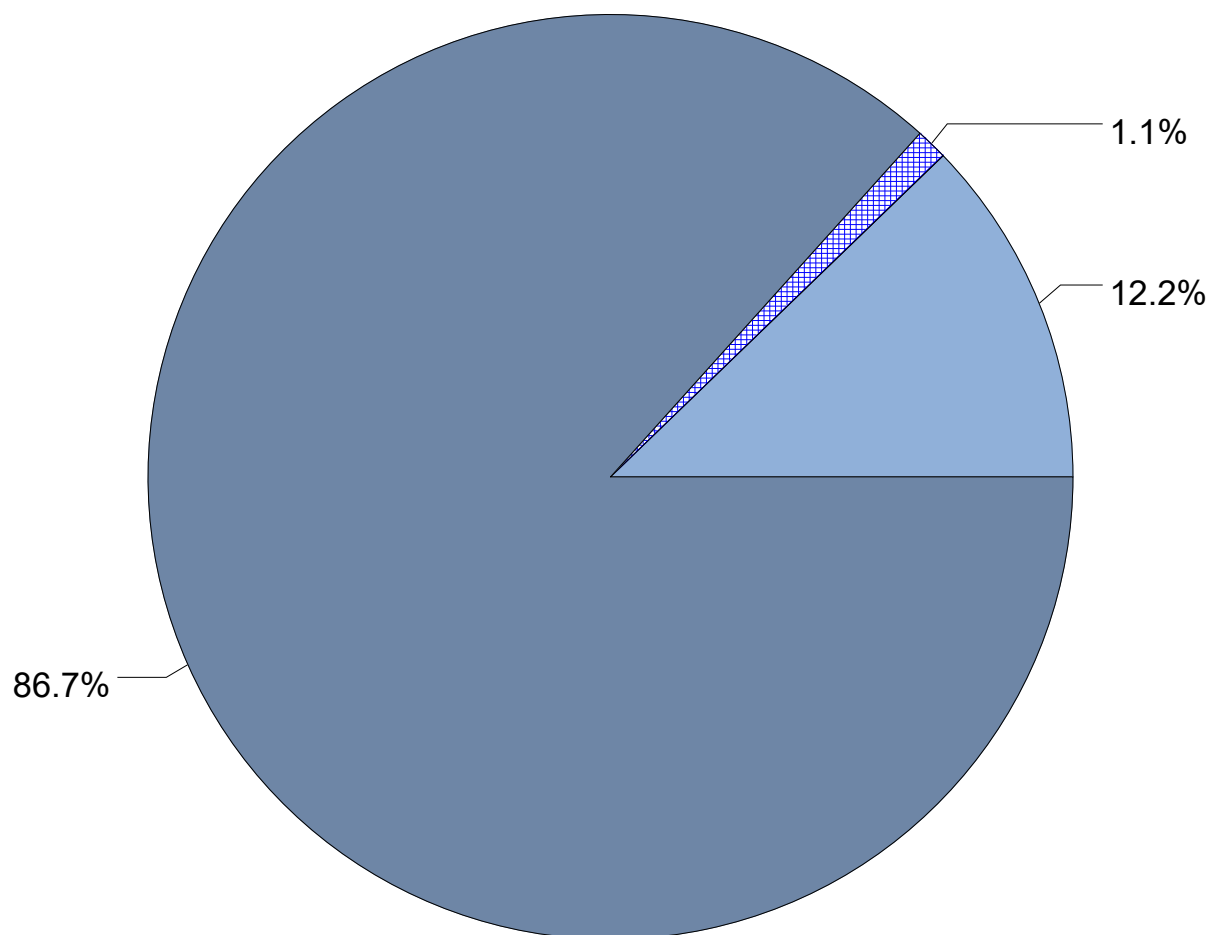


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
26 (14.6)	26 (17.2)	7 (15.2)	21 (25.3)	23 (16.0)	24 (15.8)	13 (13.5)	20 (21.7)	36 (35.0)	41 (27.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
46 (31.3)	50 (36.2)	40 (35.4)	37 (32.5)	40 (28.6)	40 (29.6)	37 (20.8)	40 (33.6)	37 (31.9)	27 (29.3)

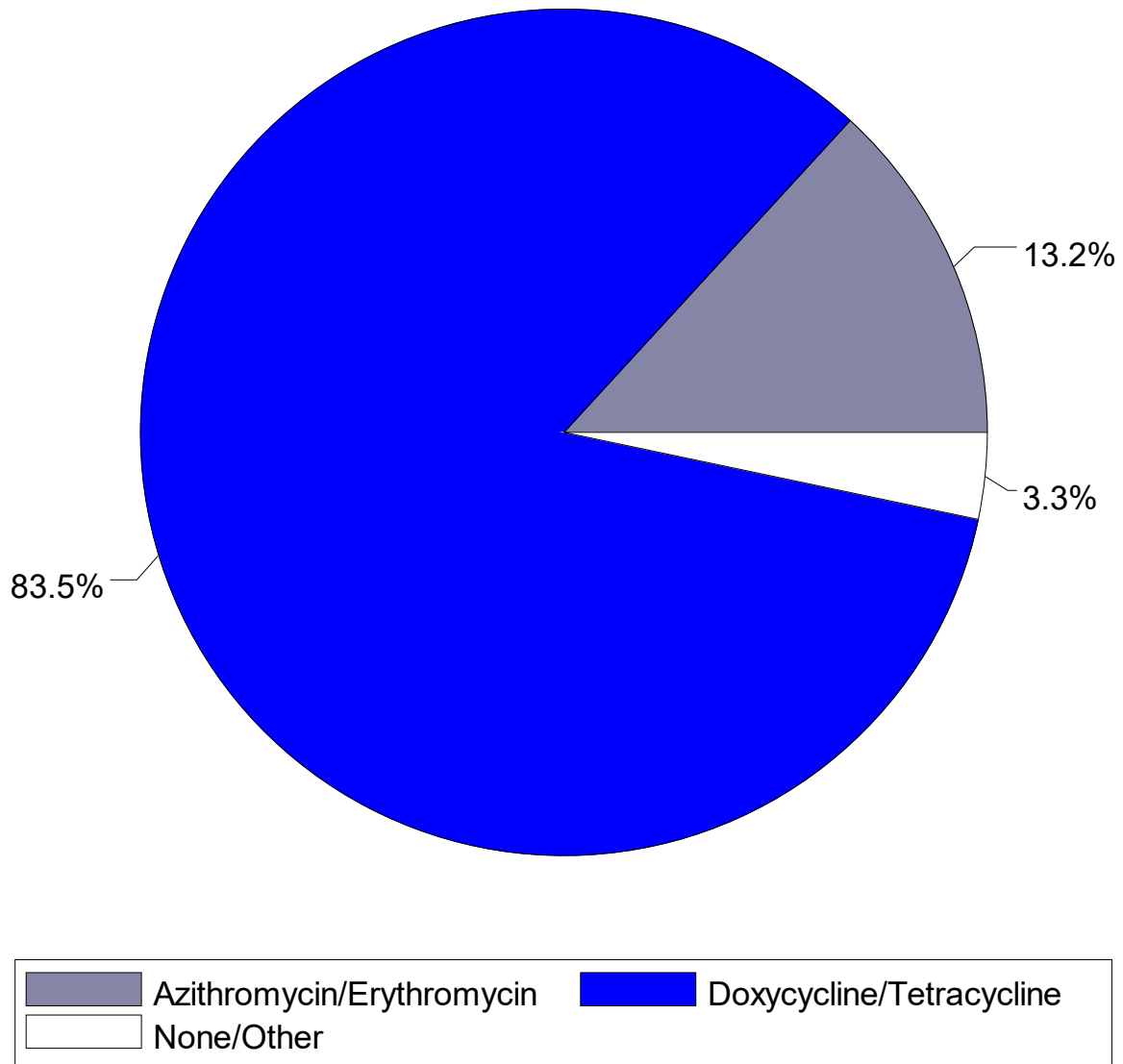
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2021



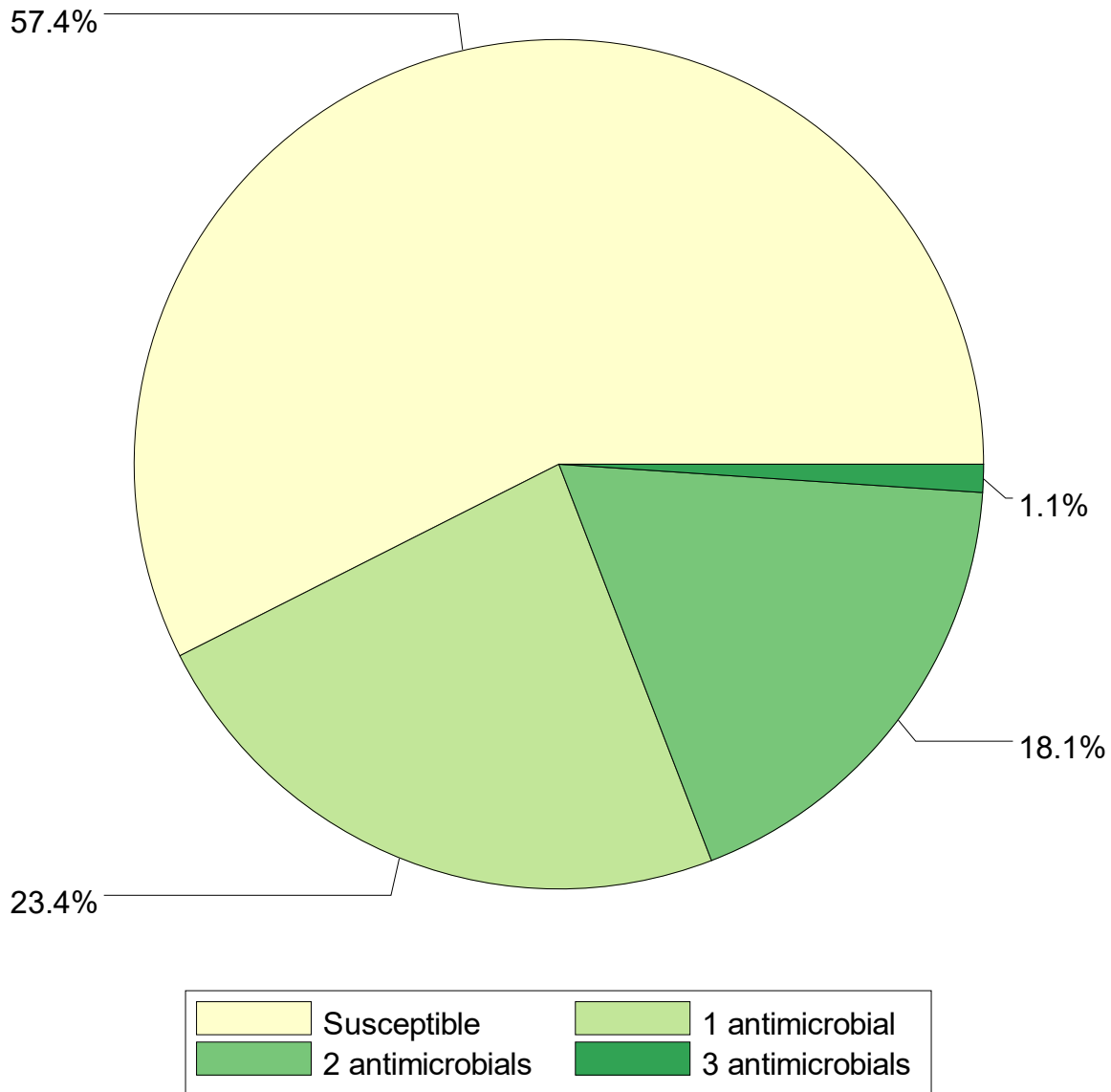
Primary Treatment	Count	Percentage
Ceftriaxone 250 mg	11	12.2
Azithromycin 2 gm	1	1.1
Ceftriaxone 500 mg	78	86.7

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	12	13.2
Doxycycline/Tetracycline	76	83.5
None/Other	3	3.3

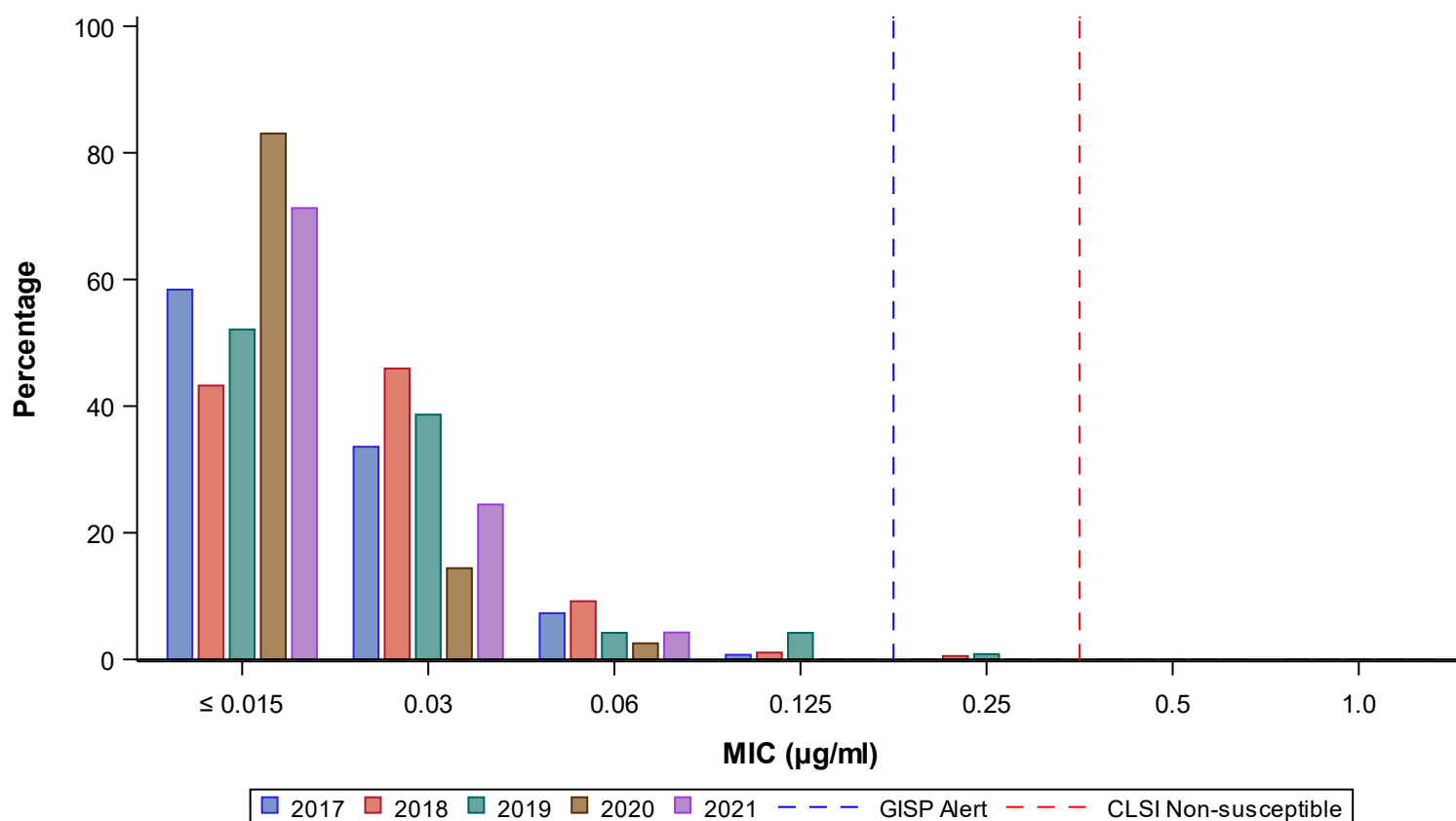
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	54	57.4
1 antimicrobial	22	23.4
2 antimicrobials	17	18.1
3 antimicrobials	1	1.1
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC $\geq$ 0.125 μ g/mL; Cefixime: MIC $\geq$ 0.25 μ g/mL; Azithromycin: MIC $\geq$ 2.0 μ g/ml; Resistance = Tetracycline: MIC $\geq$ 2.0 μ g/mL; Ciprofloxacin: MIC $\geq$ 1.0 μ g/mL; Penicillin: MIC $\geq$ 2.0 μ g/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2017-2021



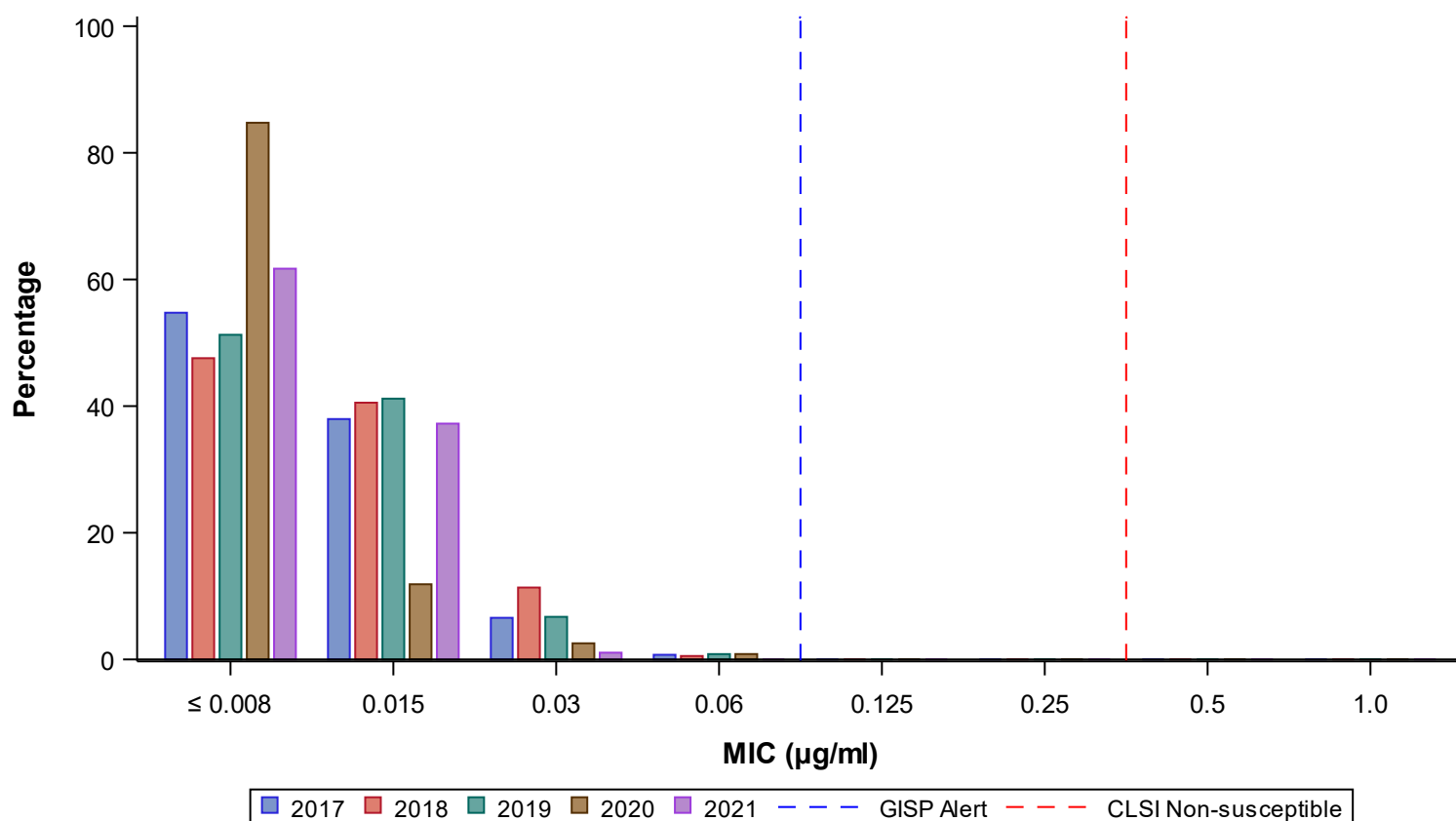
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	80 (58.4)	46 (33.6)	10 (7.3)	1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	137
2018	80 (43.2)	85 (45.9)	17 (9.2)	2 (1.1)	1 (0.5)	0 (0.0)	0 (0.0)	185
2019	62 (52.1)	46 (38.7)	5 (4.2)	5 (4.2)	1 (0.8)	0 (0.0)	0 (0.0)	119
2020	98 (83.1)	17 (14.4)	3 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	118
2021	67 (71.3)	23 (24.5)	4 (4.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	94

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	75 (54.7)	52 (38.0)	9 (6.6)	1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	137
2018	88 (47.6)	75 (40.5)	21 (11.4)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	185
2019	61 (51.3)	49 (41.2)	8 (6.7)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	119
2020	100 (84.7)	14 (11.9)	3 (2.5)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	118
2021	58 (61.7)	35 (37.2)	1 (1.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	94

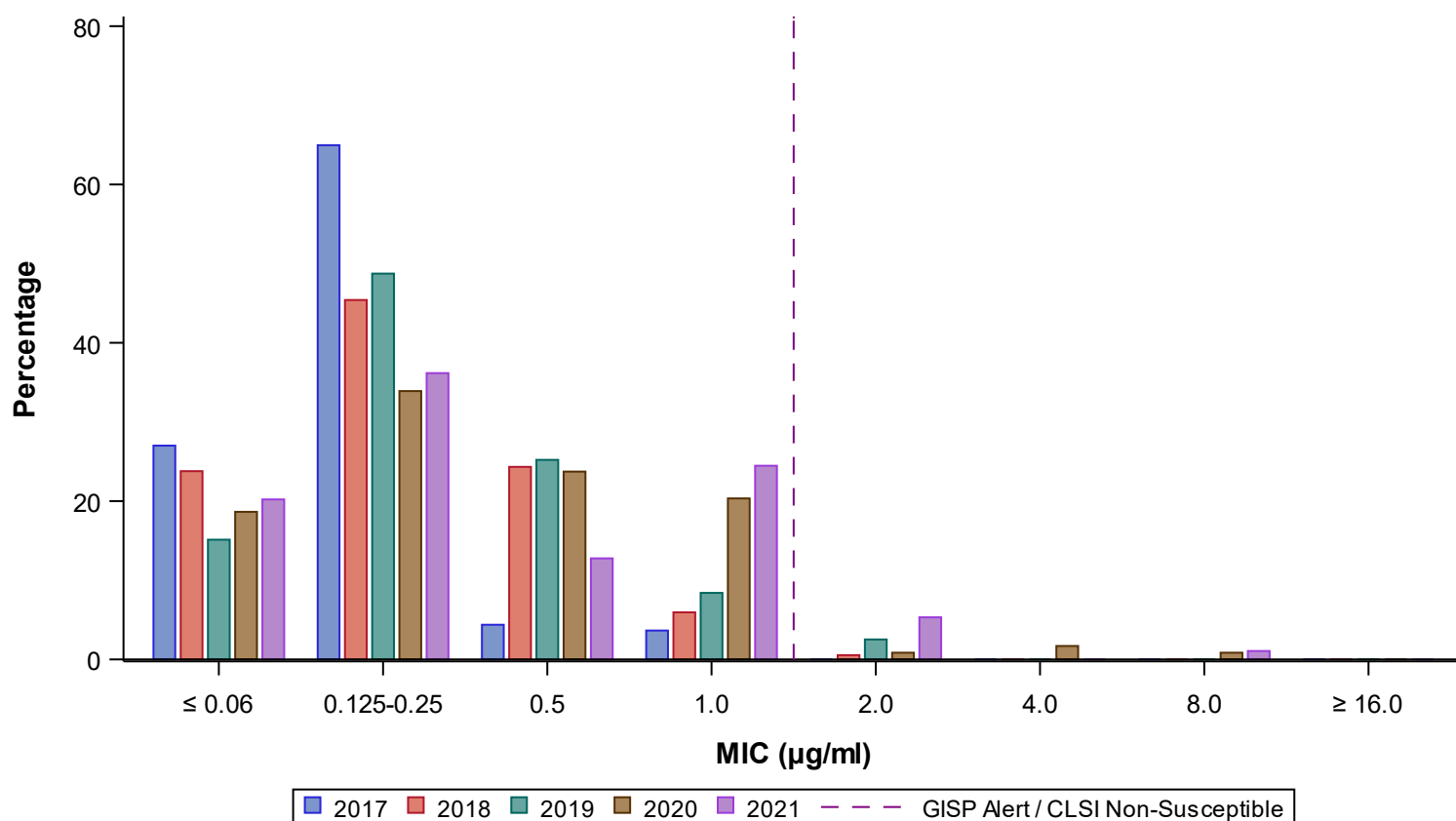
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	37 (27.0)	89 (65.0)	6 (4.4)	5 (3.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	137
2018	44 (23.8)	84 (45.4)	45 (24.3)	11 (5.9)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	185
2019	18 (15.1)	58 (48.7)	30 (25.2)	10 (8.4)	3 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	119
2020	22 (18.6)	40 (33.9)	28 (23.7)	24 (20.3)	1 (0.8)	2 (1.7)	1 (0.8)	0 (0.0)	118
2021	19 (20.2)	34 (36.2)	12 (12.8)	23 (24.5)	5 (5.3)	0 (0.0)	1 (1.1)	0 (0.0)	94

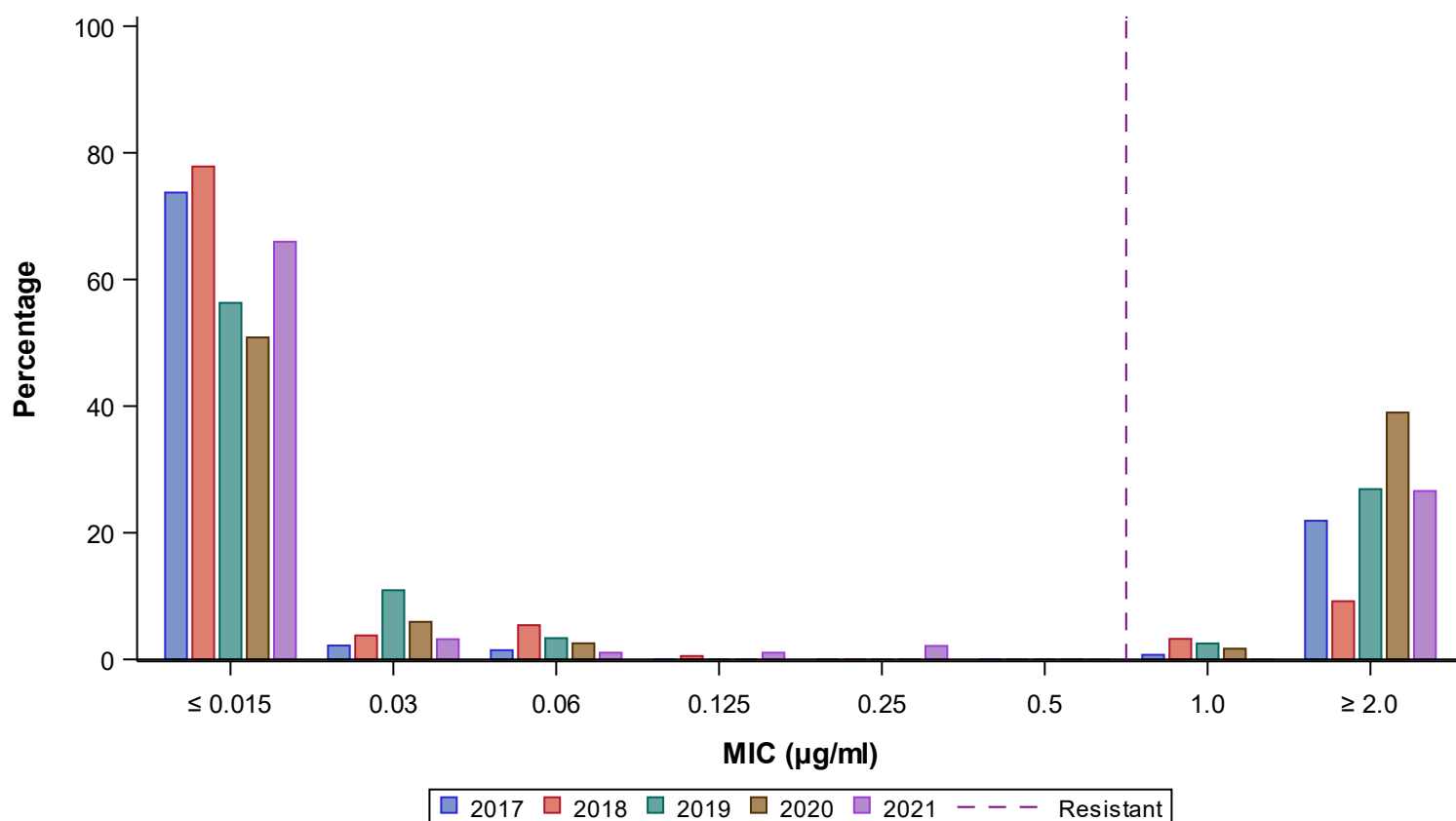
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

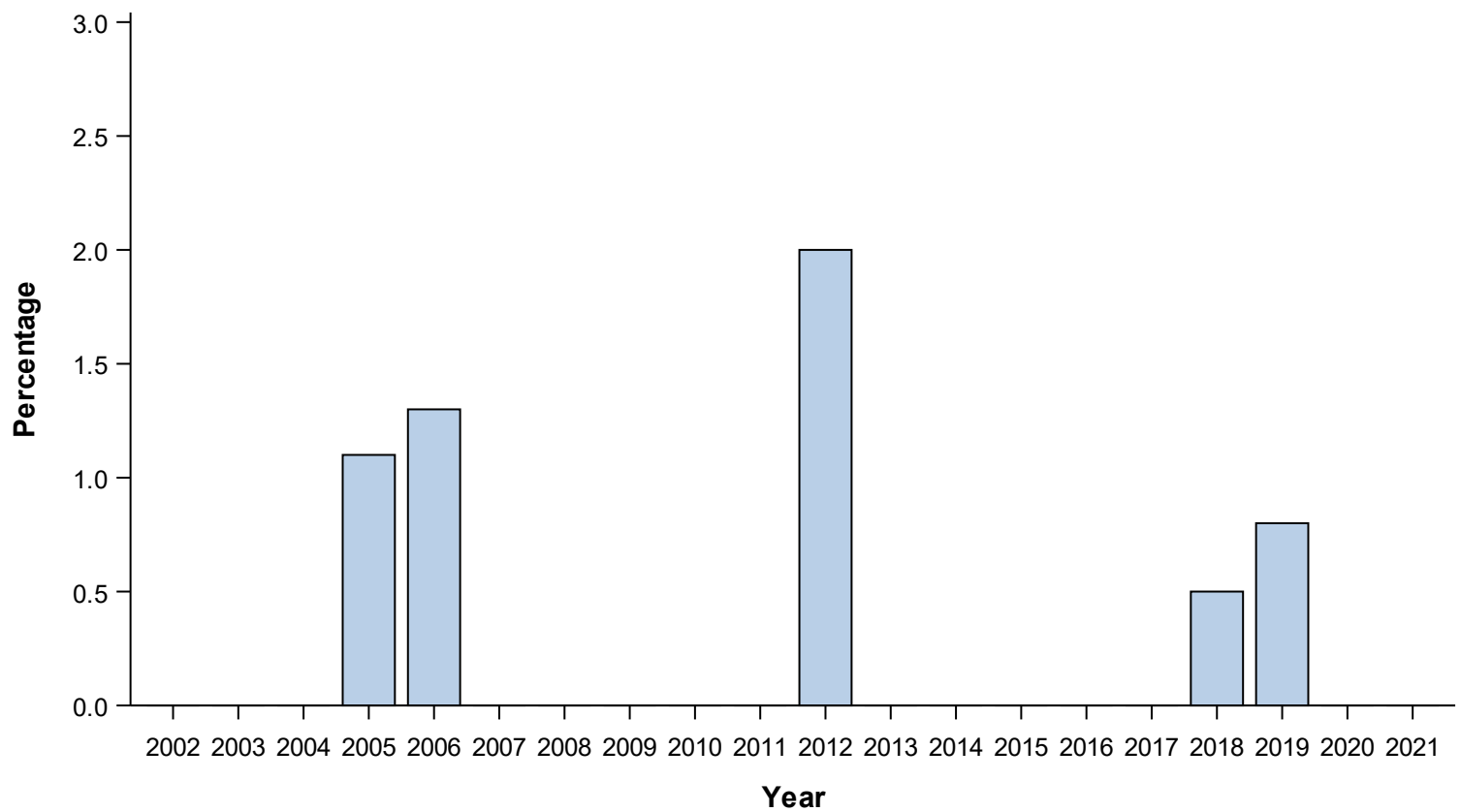
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	101 (73.7)	3 (2.2)	2 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.7)	30 (21.9)	137
2018	144 (77.8)	7 (3.8)	10 (5.4)	1 (0.5)	0 (0.0)	0 (0.0)	6 (3.2)	17 (9.2)	185
2019	67 (56.3)	13 (10.9)	4 (3.4)	0 (0.0)	0 (0.0)	0 (0.0)	3 (2.5)	32 (26.9)	119
2020	60 (50.8)	7 (5.9)	3 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.7)	46 (39.0)	118
2021	62 (66.0)	3 (3.2)	1 (1.1)	1 (1.1)	2 (2.1)	0 (0.0)	0 (0.0)	25 (26.6)	94

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2002-2021

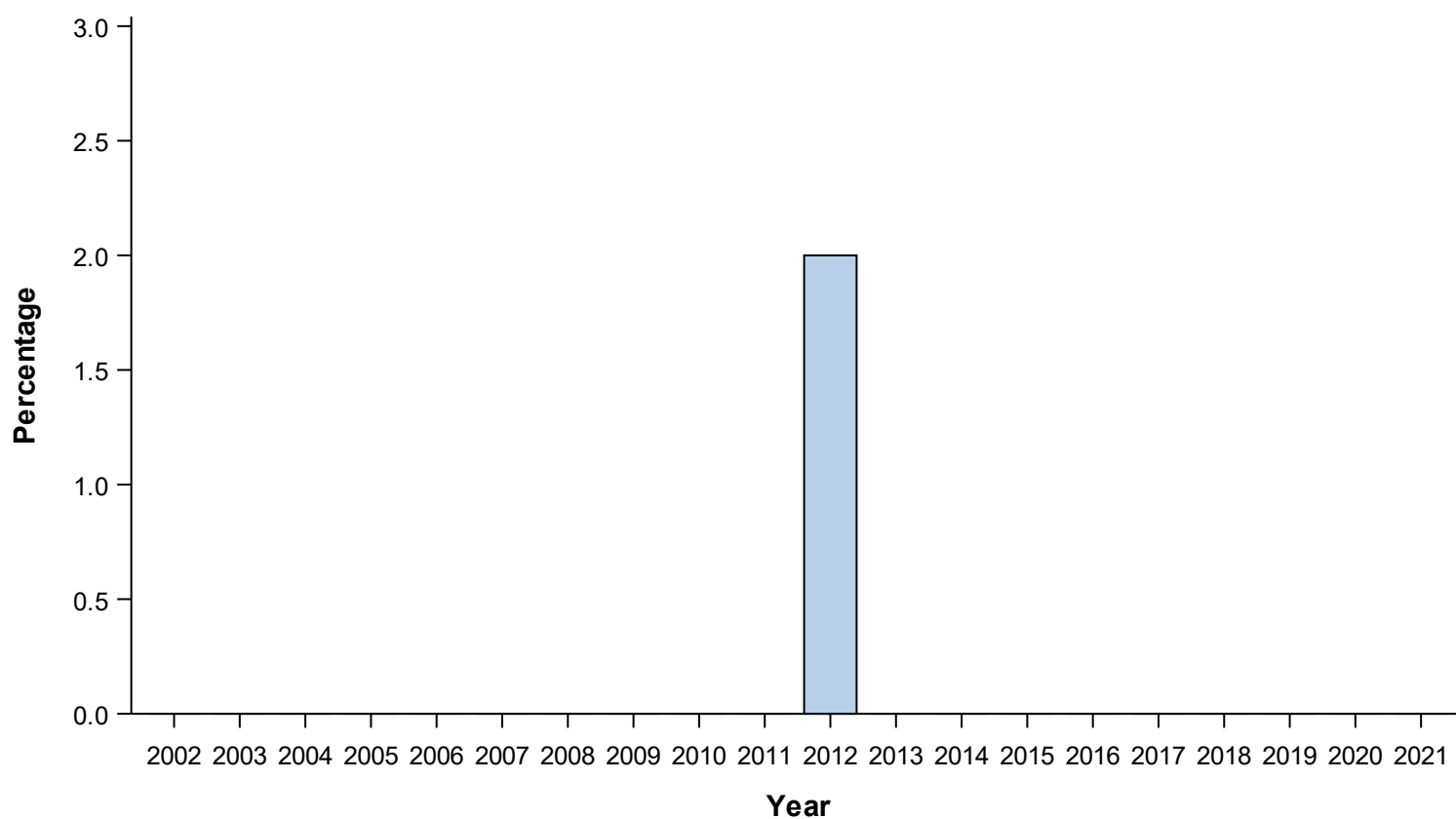


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	1 (1.1)	2 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
3 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)	1 (0.8)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC $\geq$ 0.25 μ g/ml.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2002-2021

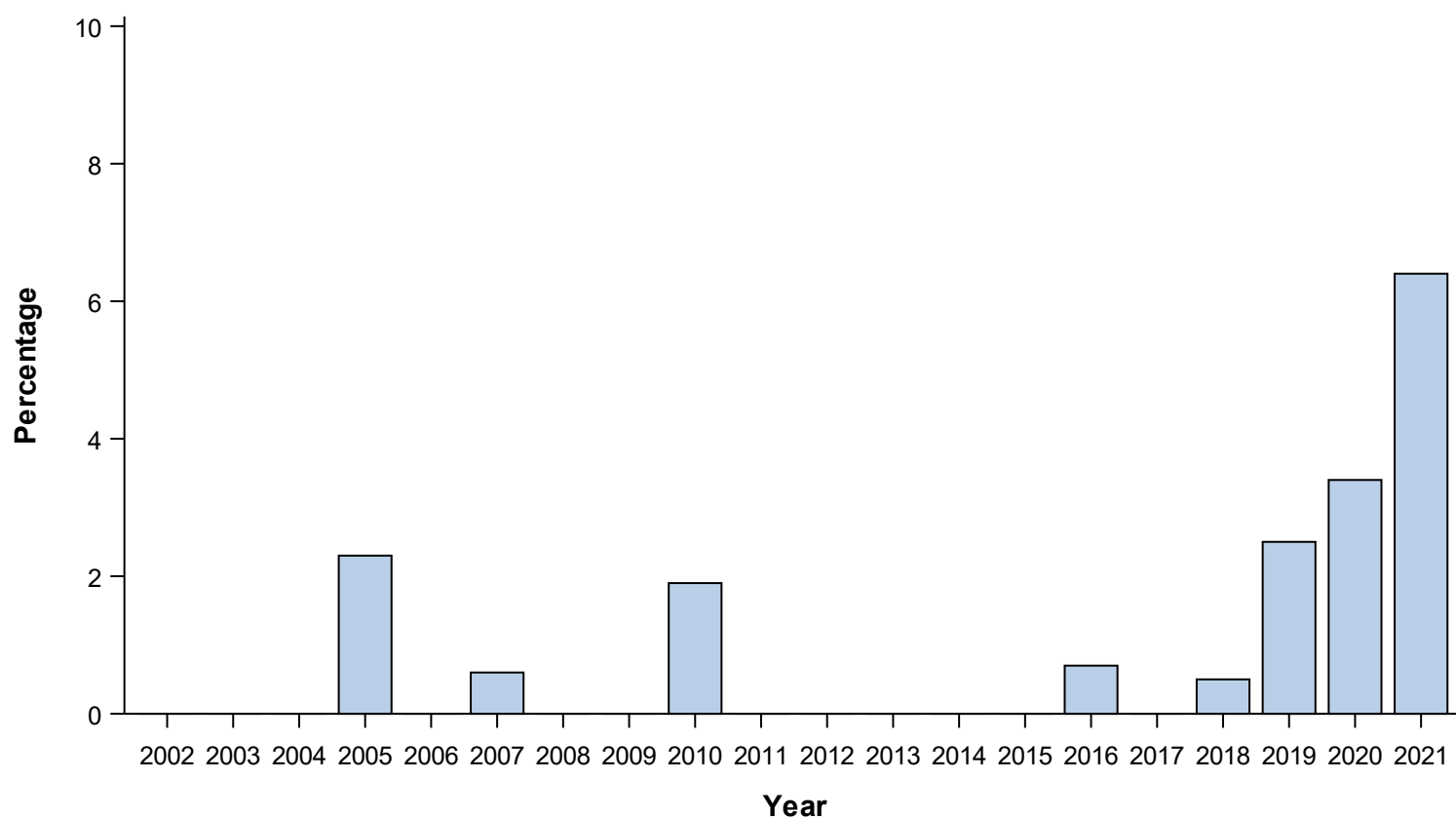


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
3 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Albuquerque, New Mexico, 2002-2021

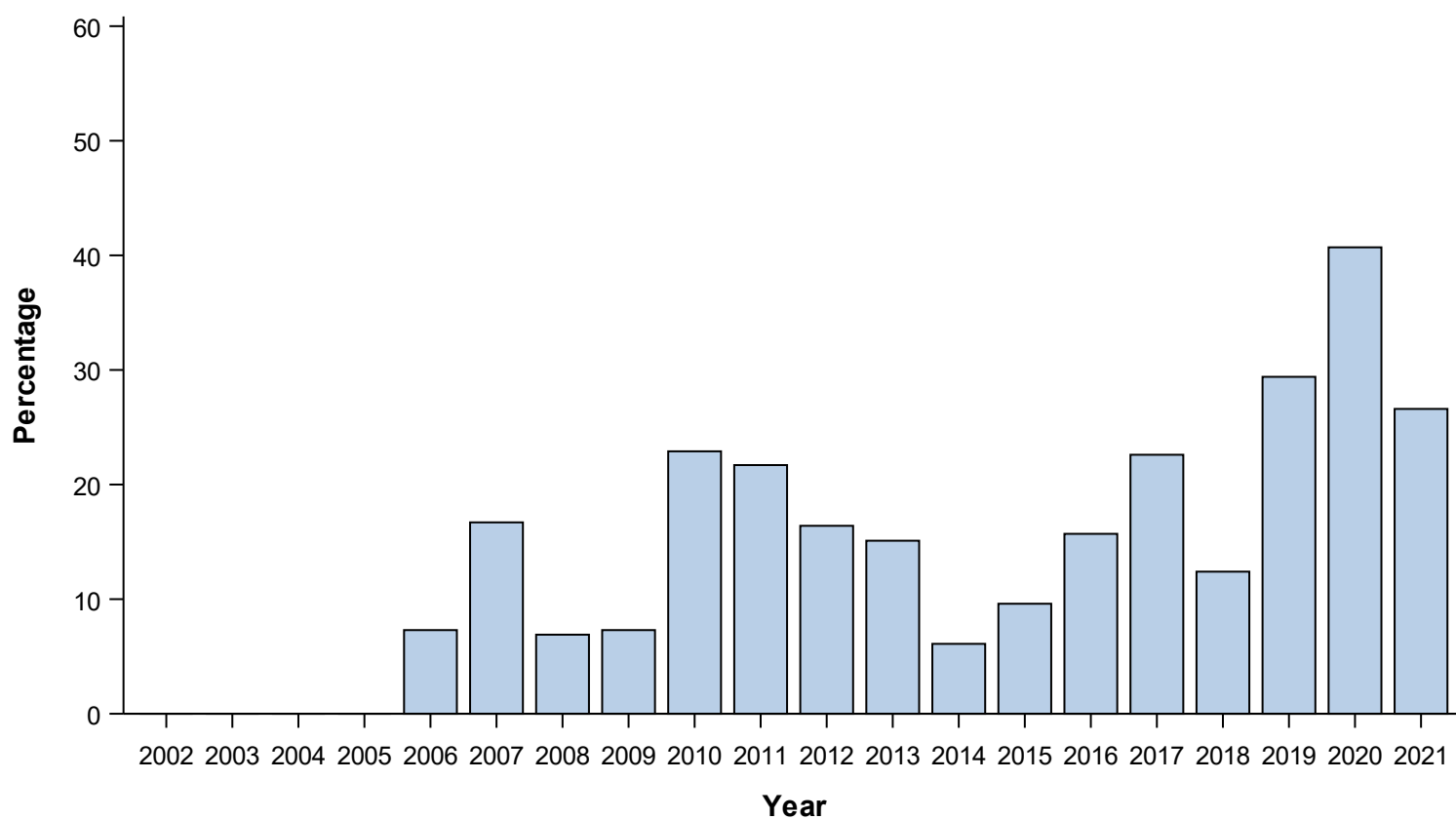


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	2 (2.3)	0 (0.0)	1 (0.6)	0 (0.0)	0 (0.0)	2 (1.9)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.7)	0 (0.0)	1 (0.5)	3 (2.5)	4 (3.4)	6 (6.4)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Albuquerque, New Mexico, 2002-2021

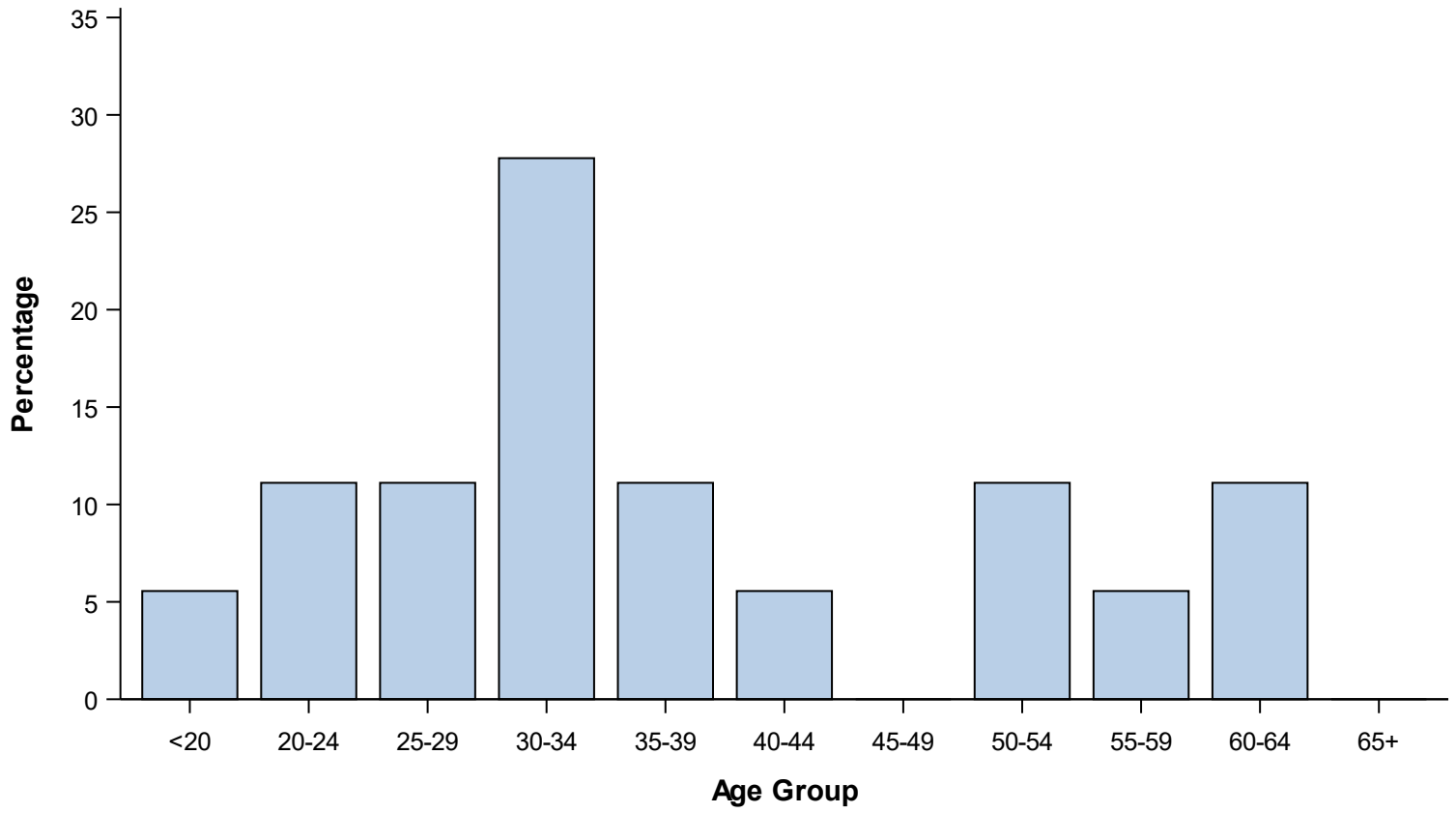


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	11 (7.3)	26 (16.7)	7 (6.9)	7 (7.3)	24 (22.9)	33 (21.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
25 (16.4)	21 (15.1)	7 (6.1)	11 (9.6)	22 (15.7)	31 (22.6)	23 (12.4)	35 (29.4)	48 (40.7)	25 (26.6)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

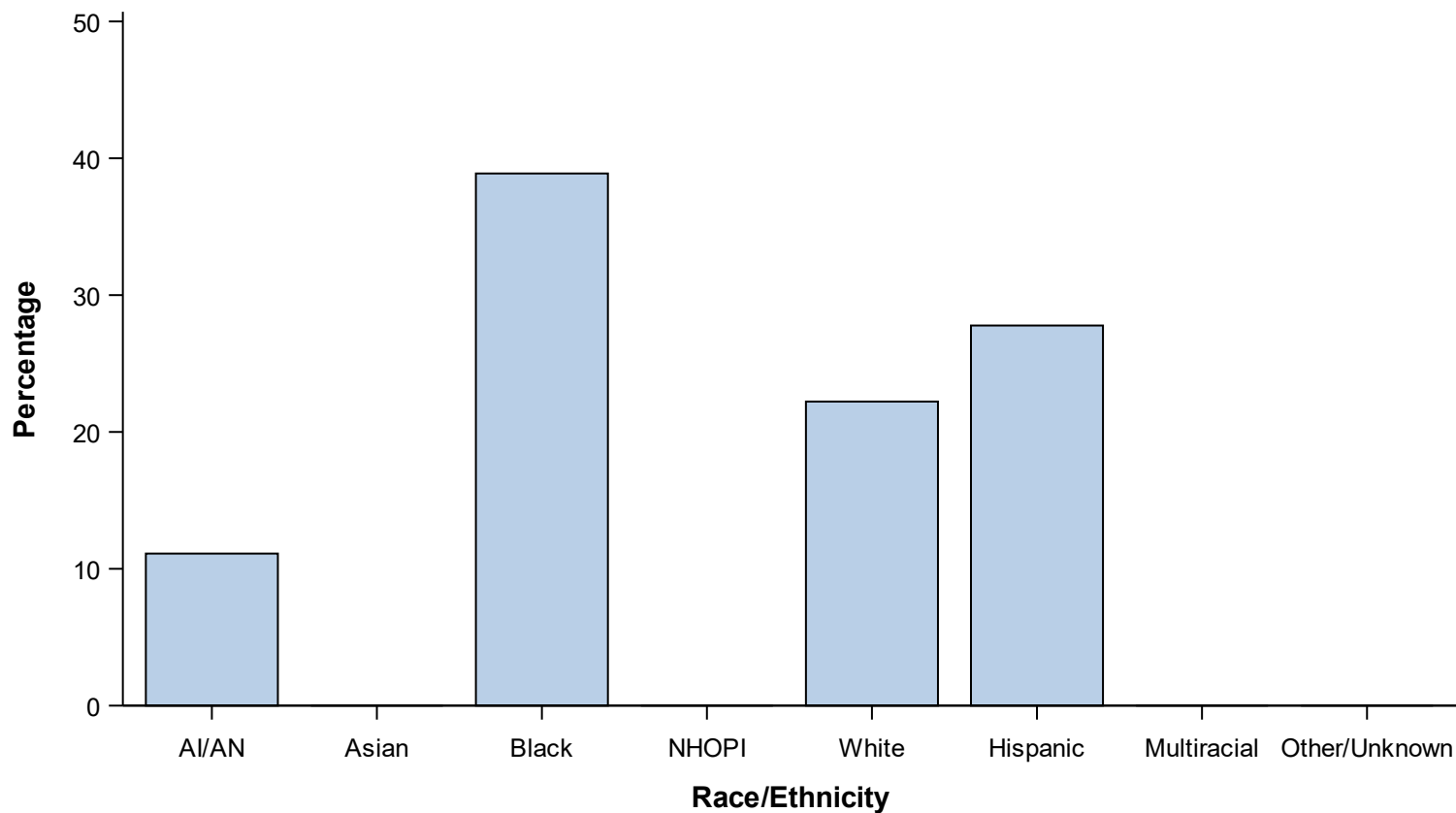
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
1 (5.6)	2 (11.1)	2 (11.1)	5 (27.8)	2 (11.1)	1 (5.6)	0 (0.0)	2 (11.1)	1 (5.6)	2 (11.1)	0 (0.0)	18

Note: Cases with unknown age were excluded.

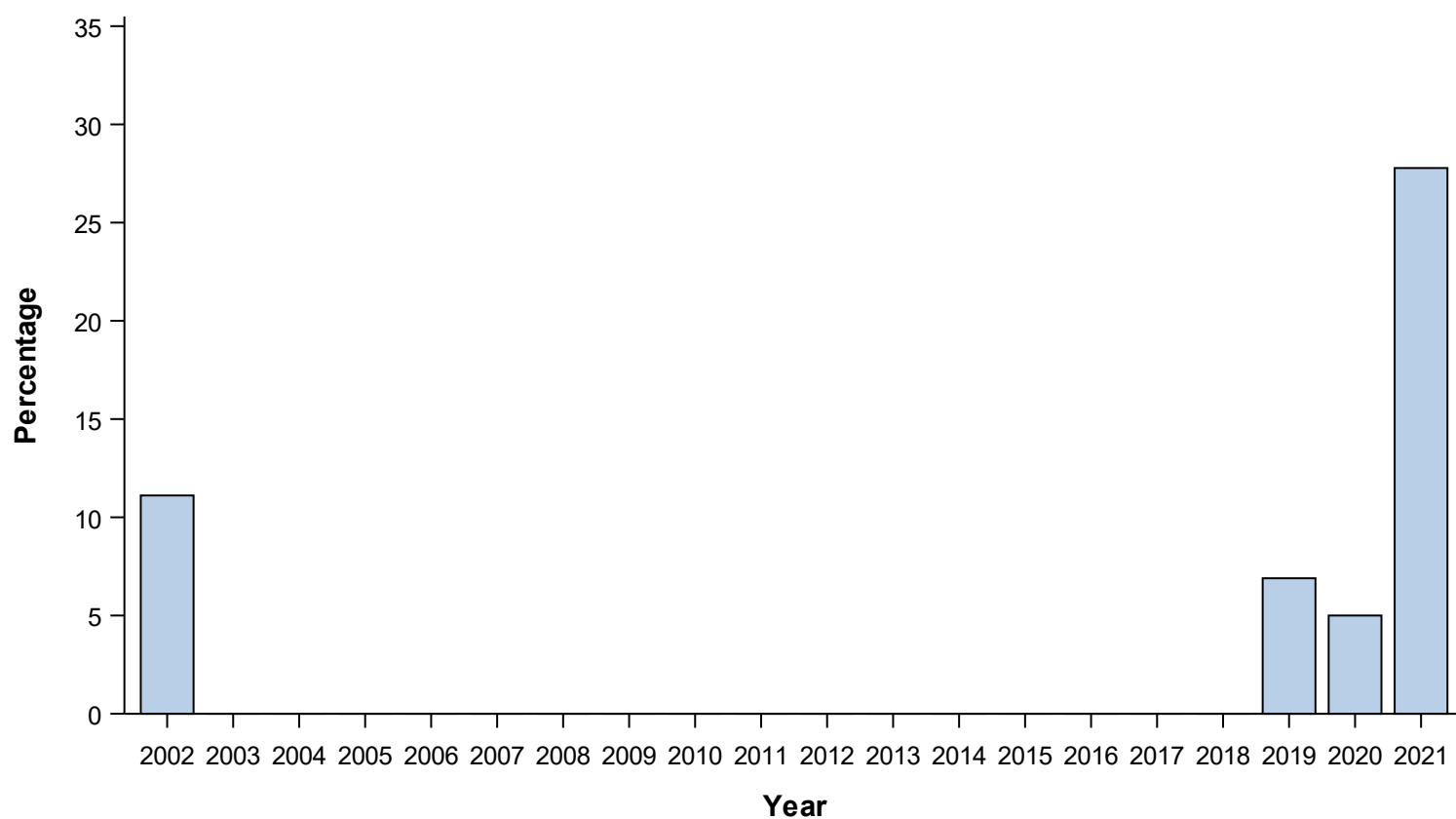
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
2 (11.1)	0 (0.0)	7 (38.9)	0 (0.0)	4 (22.2)	5 (27.8)	0 (0.0)	0 (0.0)	18

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Anchorage, Alaska, 2002-2021

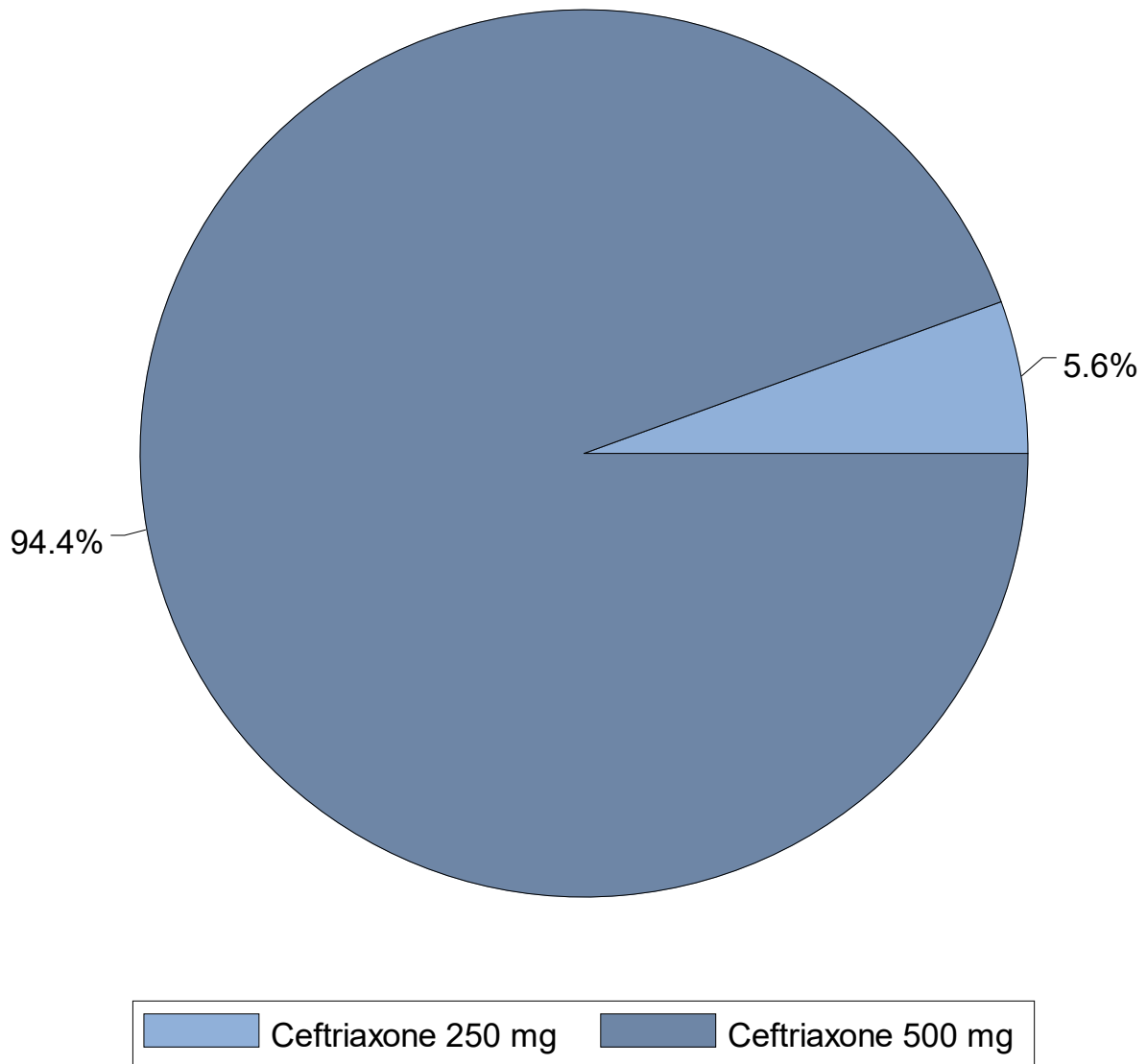


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
3 (11.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (6.9)	1 (5.0)	5 (27.8)

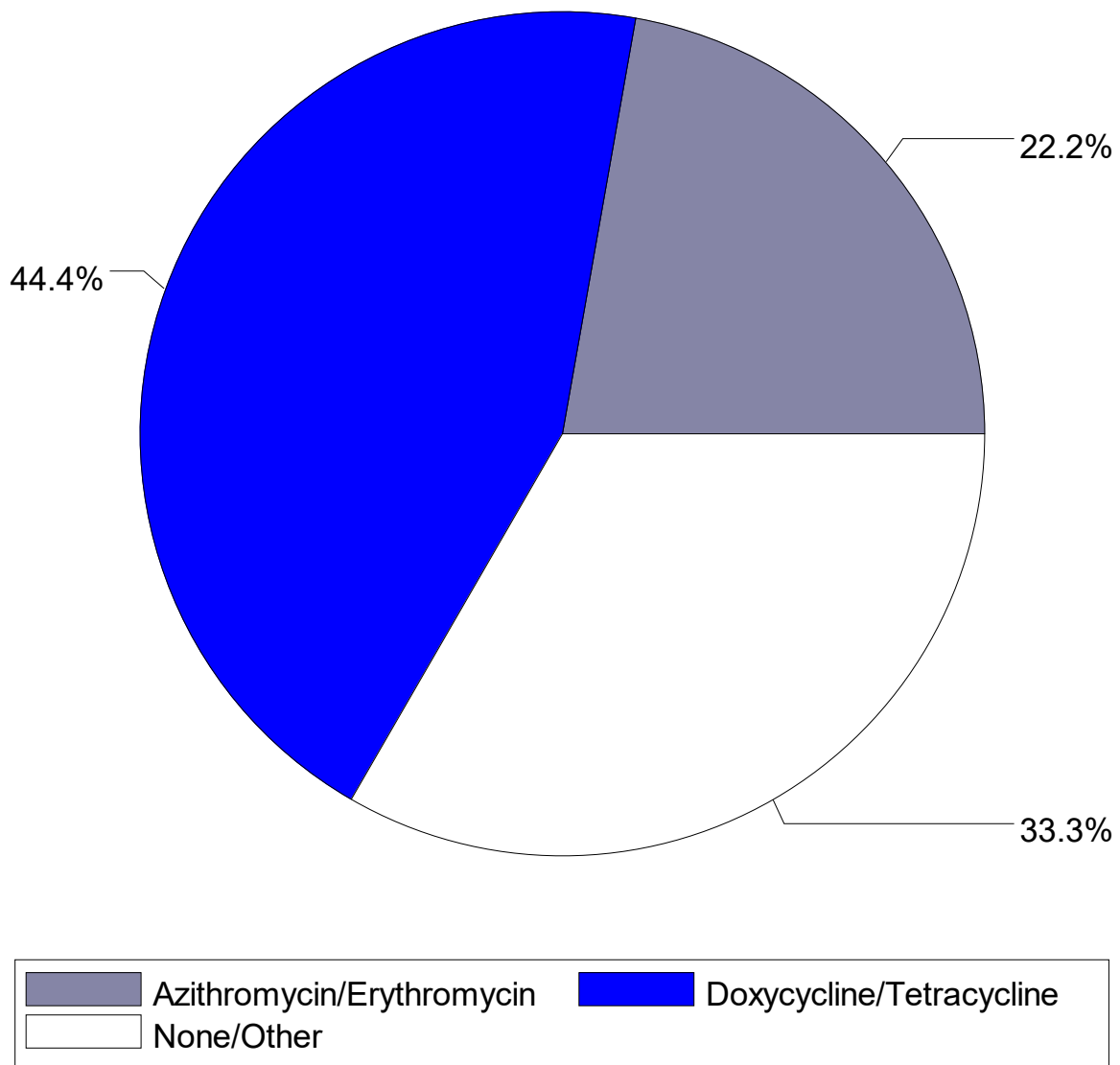
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.
Site participated in GISP during 2002-2003 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Anchorage, Alaska, 2021



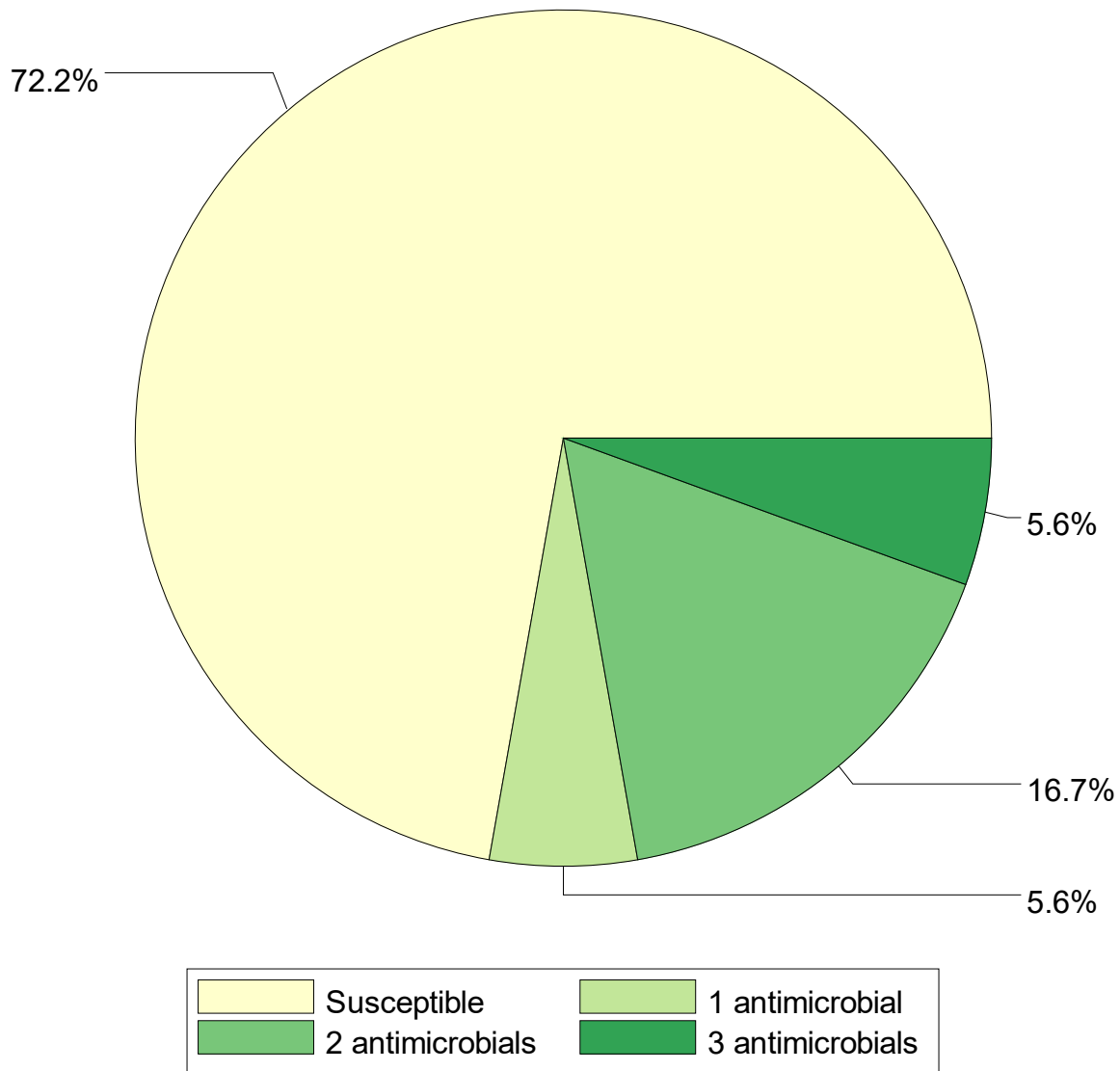
Primary Treatment	Count	Percentage
Ceftriaxone 250 mg	1	5.6
Ceftriaxone 500 mg	17	94.4

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	4	22.2
Doxycycline/Tetracycline	8	44.4
None/Other	6	33.3

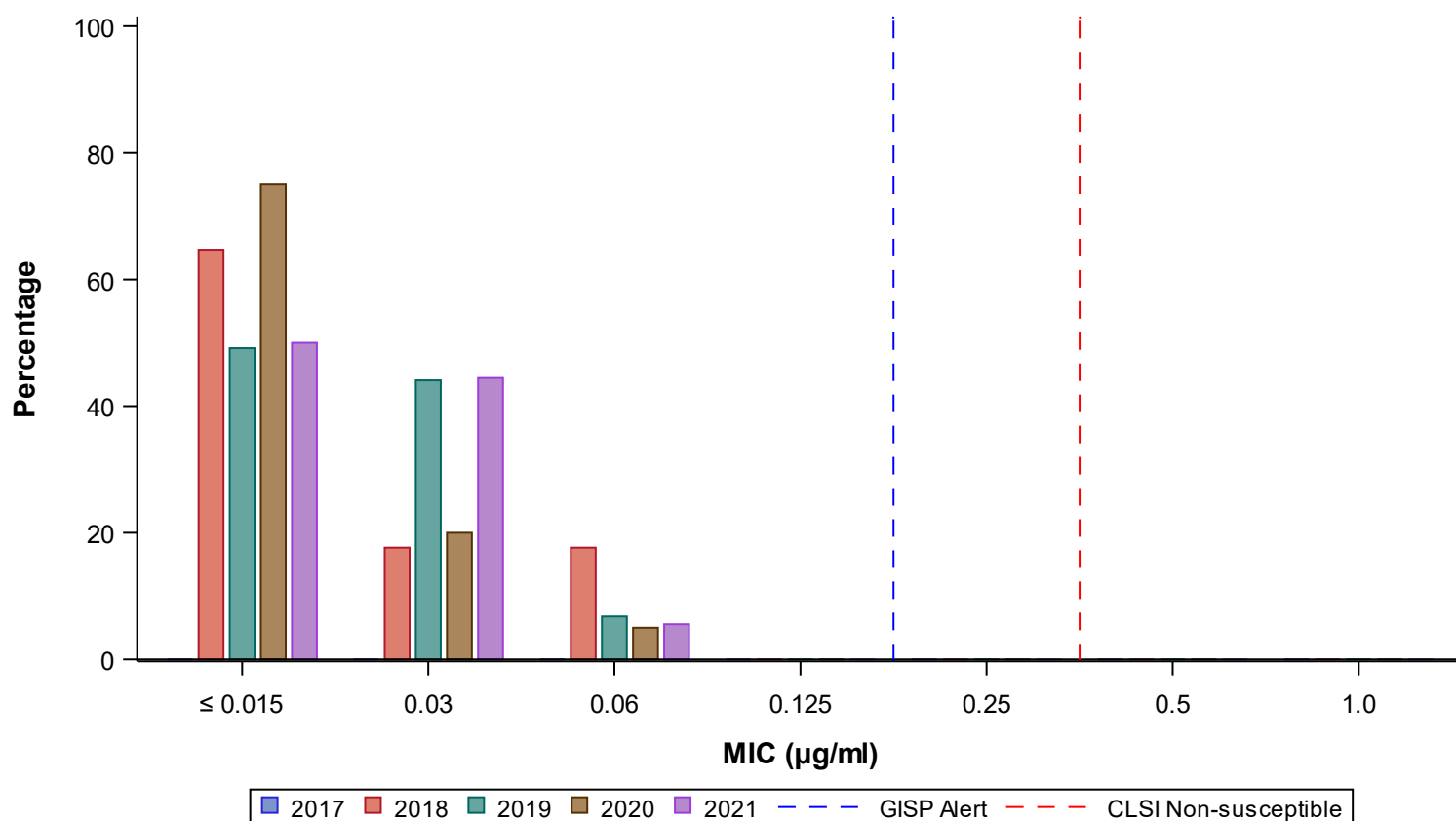
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	13	72.2
1 antimicrobial	1	5.6
2 antimicrobials	3	16.7
3 antimicrobials	1	5.6
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	11 (64.7)	3 (17.6)	3 (17.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	17
2019	29 (49.2)	26 (44.1)	4 (6.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	59
2020	15 (75.0)	4 (20.0)	1 (5.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	20
2021	9 (50.0)	8 (44.4)	1 (5.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	18

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

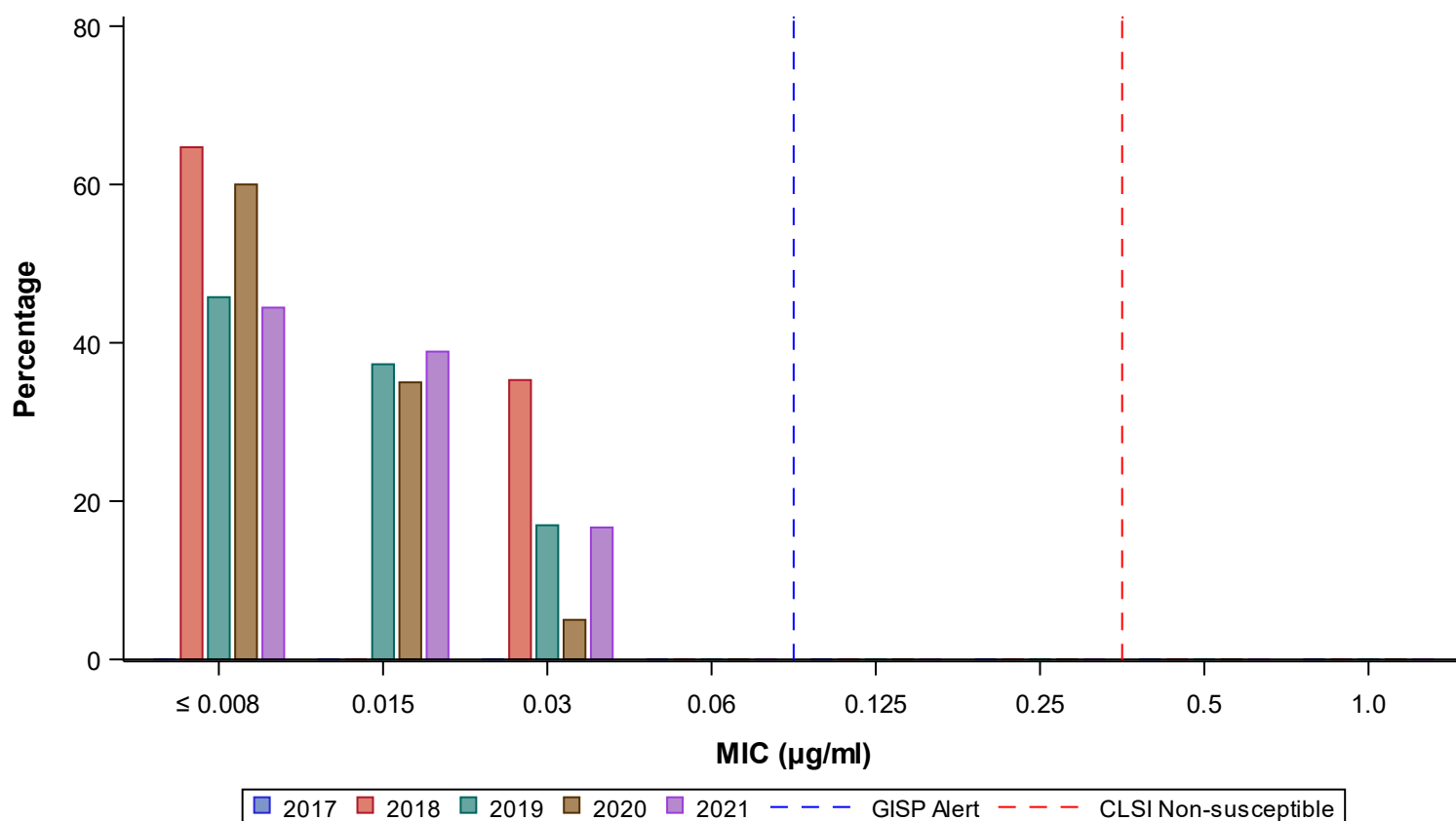
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	11 (64.7)	0 (0.0)	6 (35.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	17
2019	27 (45.8)	22 (37.3)	10 (16.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	59
2020	12 (60.0)	7 (35.0)	1 (5.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	20
2021	8 (44.4)	7 (38.9)	3 (16.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	18

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

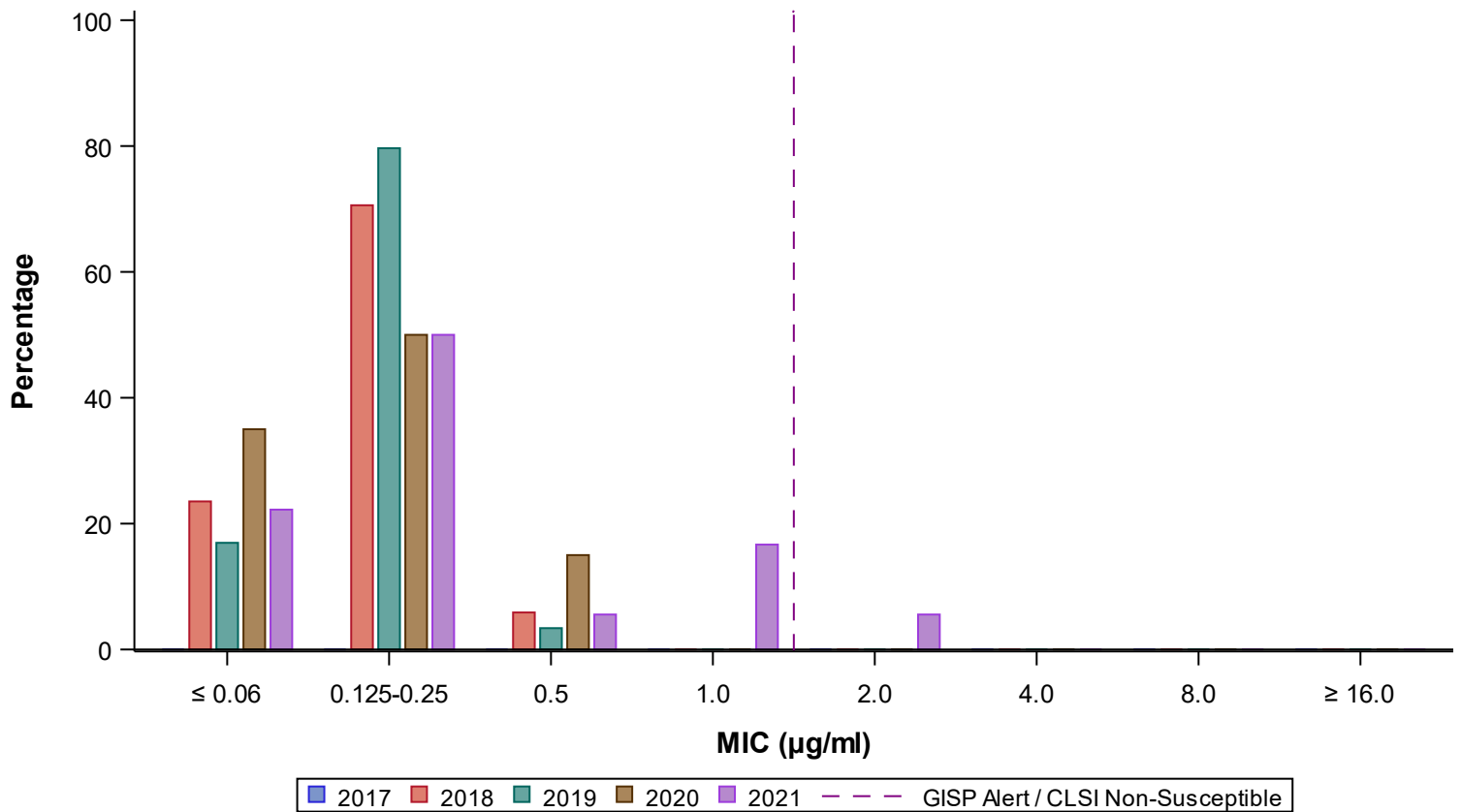
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	4 (23.5)	12 (70.6)	1 (5.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	17
2019	10 (16.9)	47 (79.7)	2 (3.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	59
2020	7 (35.0)	10 (50.0)	3 (15.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	20
2021	4 (22.2)	9 (50.0)	1 (5.6)	3 (16.7)	1 (5.6)	0 (0.0)	0 (0.0)	0 (0.0)	18

GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

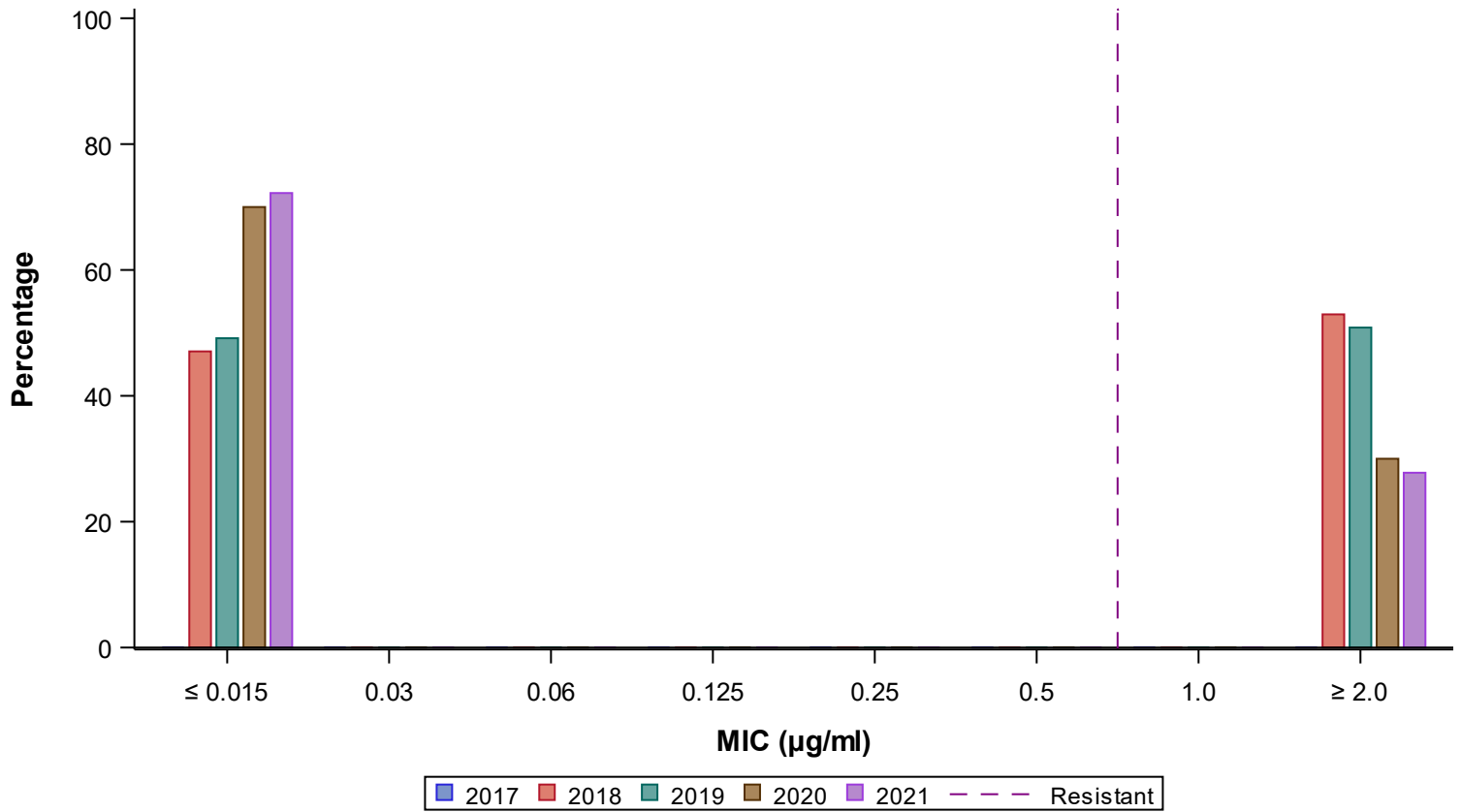
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2017-2021

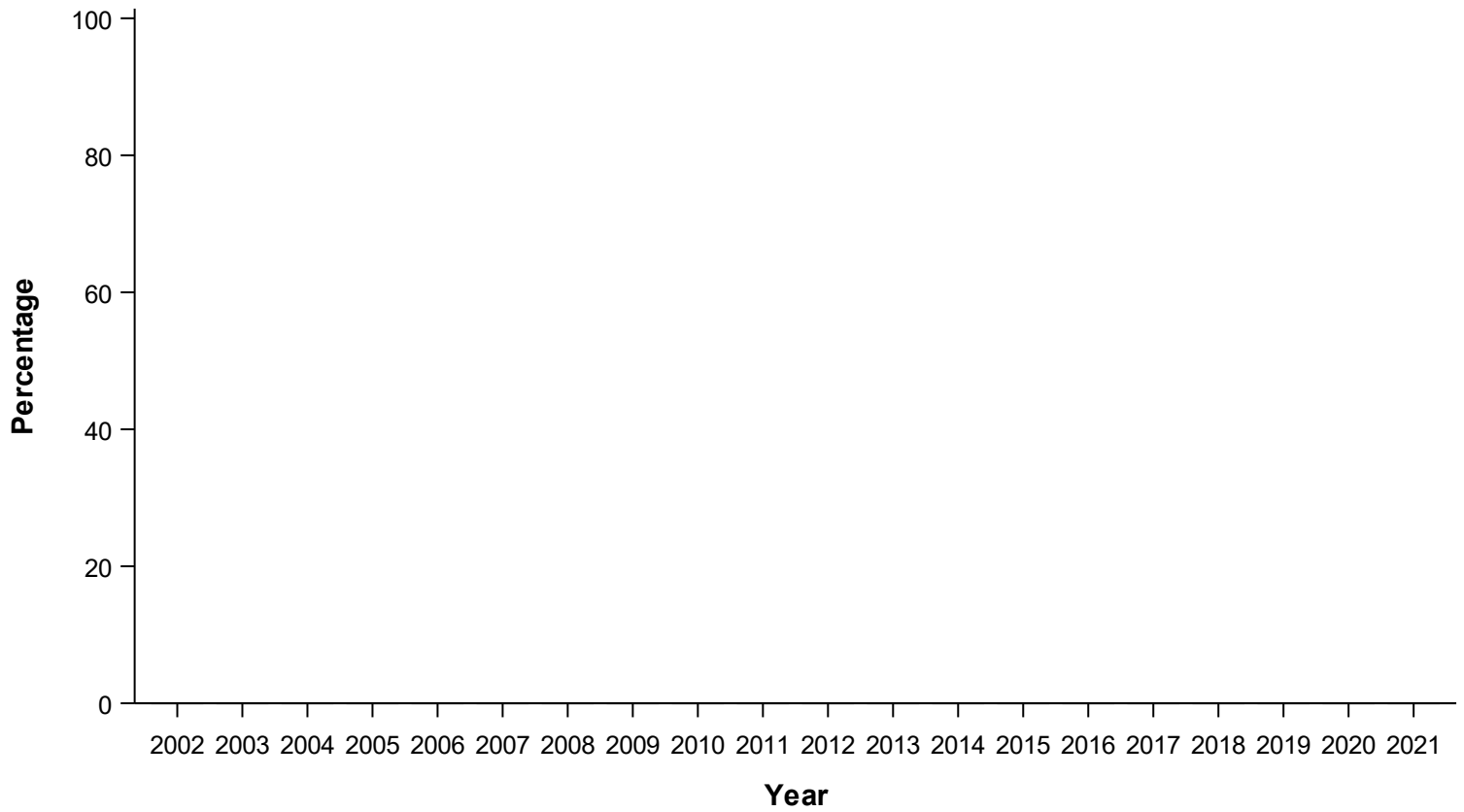


Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	8 (47.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	9 (52.9)	17
2019	29 (49.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	30 (50.8)	59
2020	14 (70.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	6 (30.0)	20
2021	13 (72.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (27.8)	18

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2002-2021



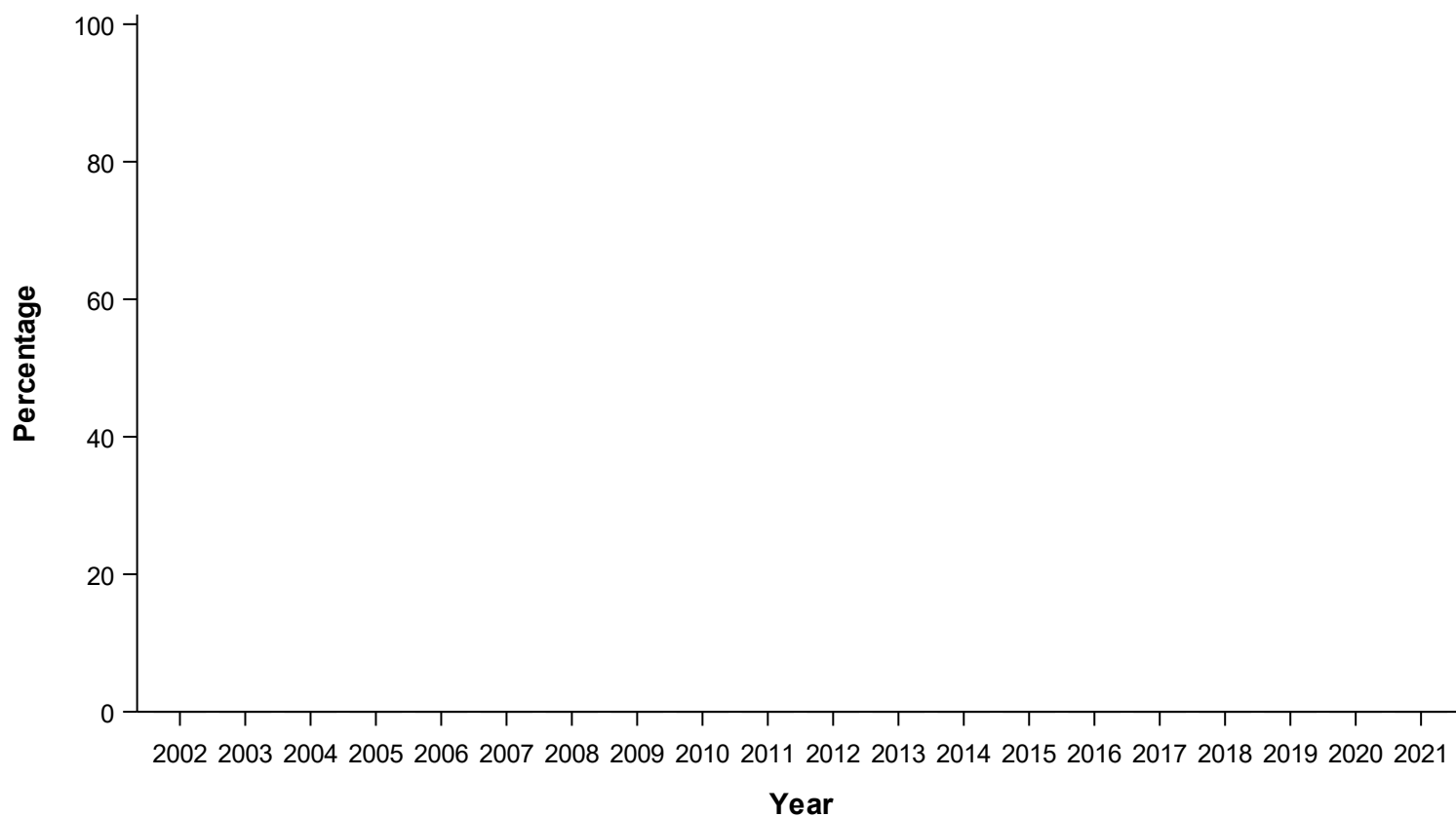
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2002-2003 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2002-2021



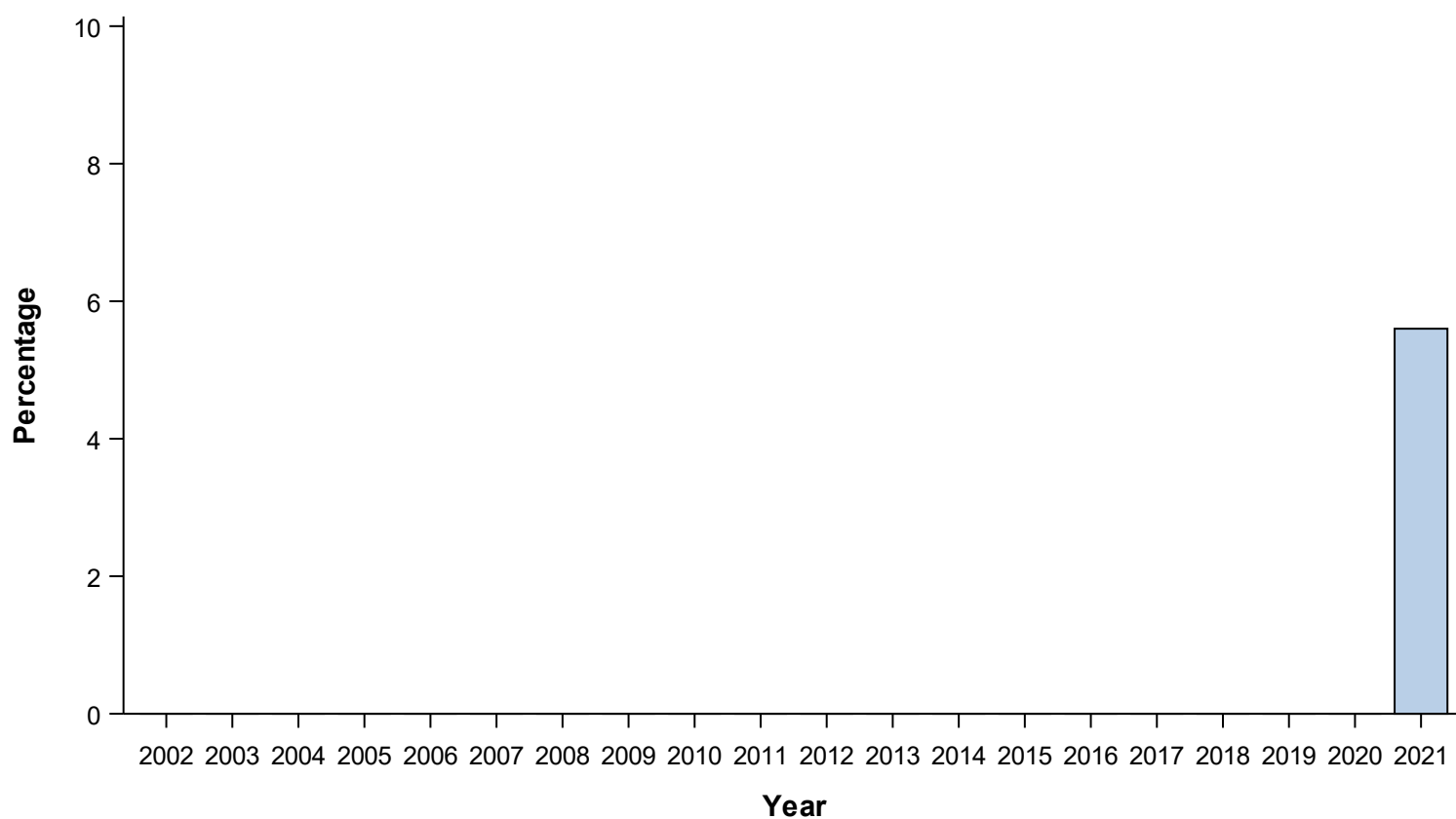
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2002-2003 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Anchorage, Alaska, 2002-2021



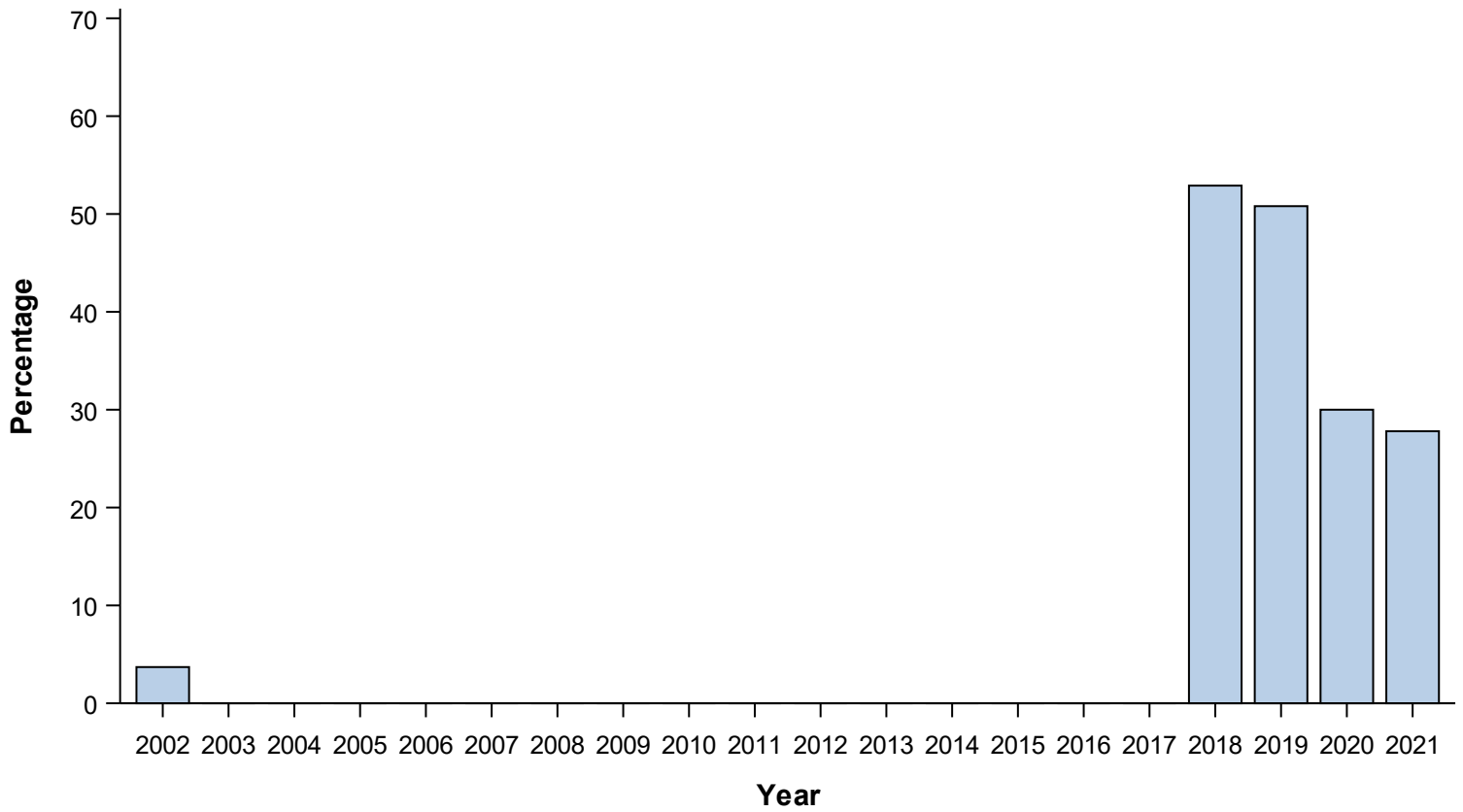
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (5.6)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2002-2003 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Anchorage, Alaska, 2002-2021



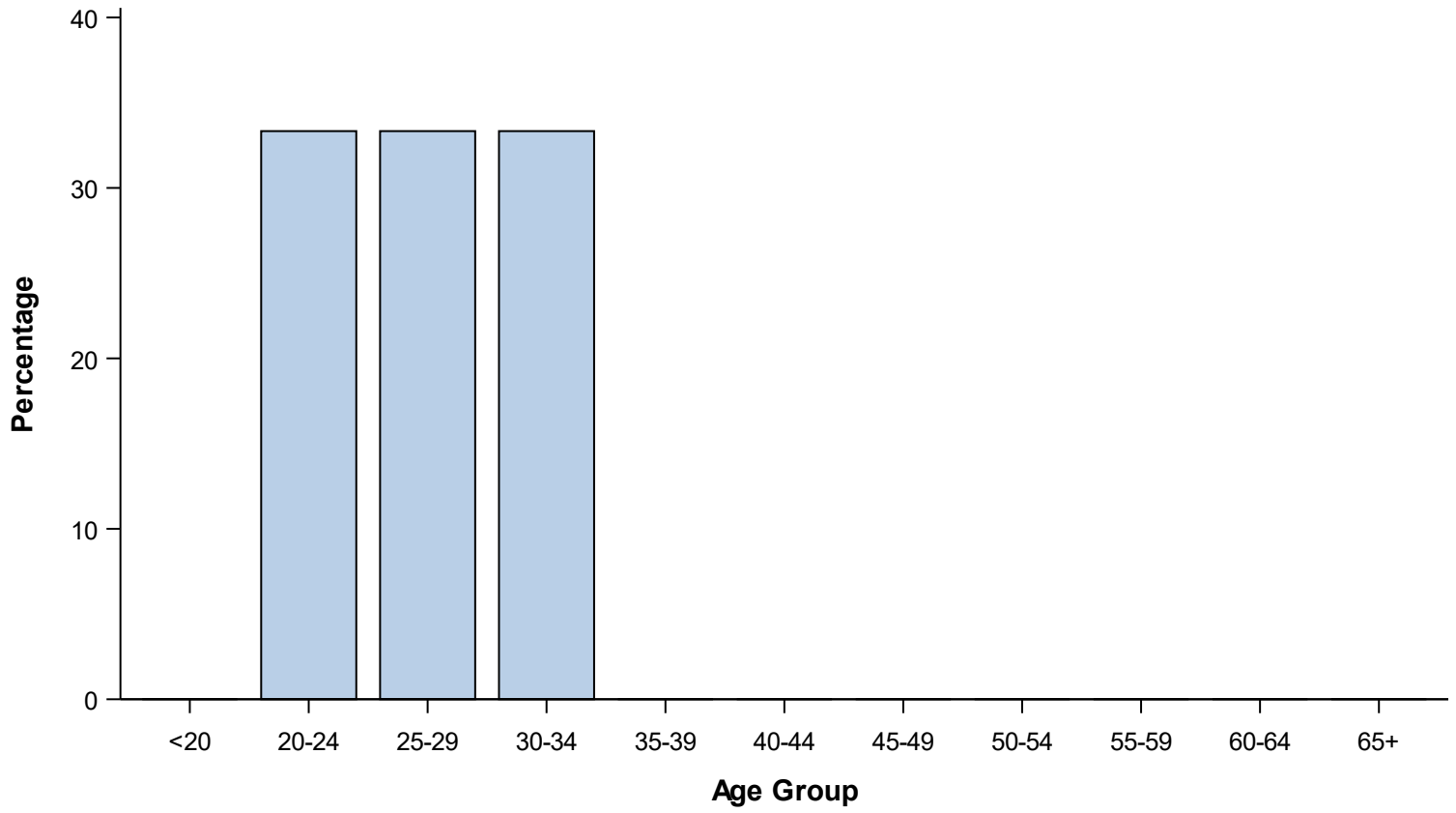
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (3.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	9 (52.9)	30 (50.8)	6 (30.0)	5 (27.8)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2002-2003 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

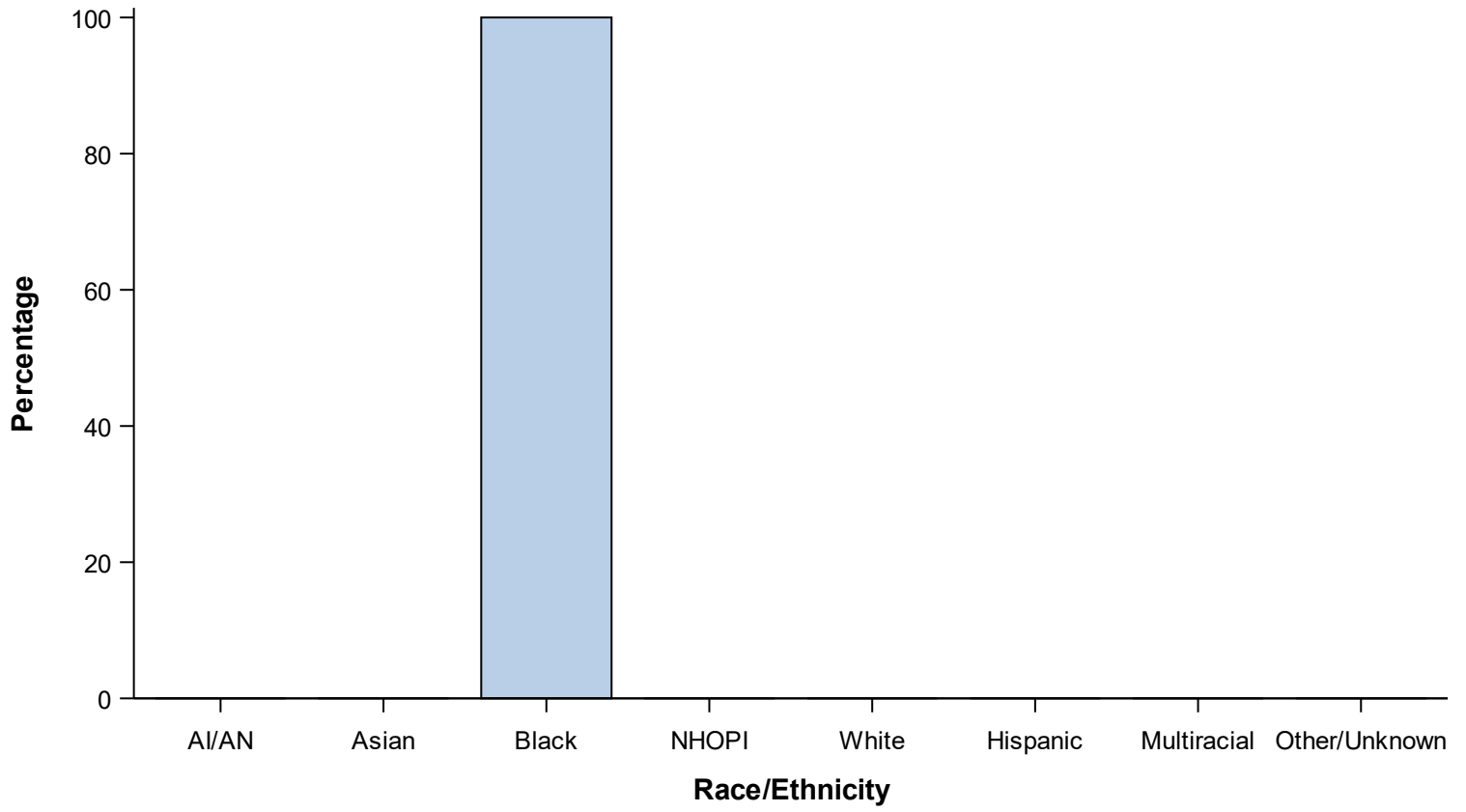
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
0 (0.0)	1 (33.3)	1 (33.3)	1 (33.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3

Note: Cases with unknown age were excluded.

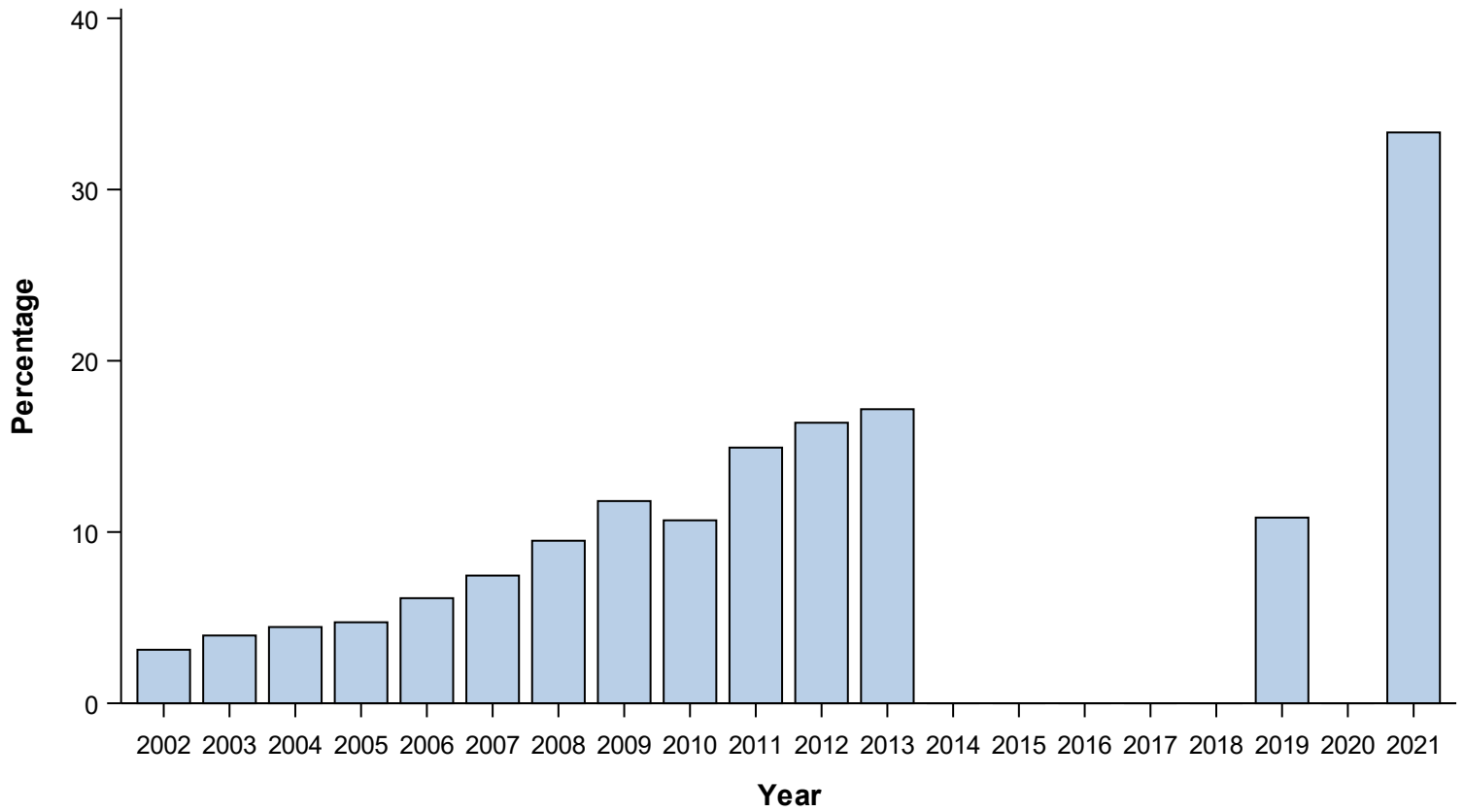
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	3 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Baltimore, Maryland, 2002-2021



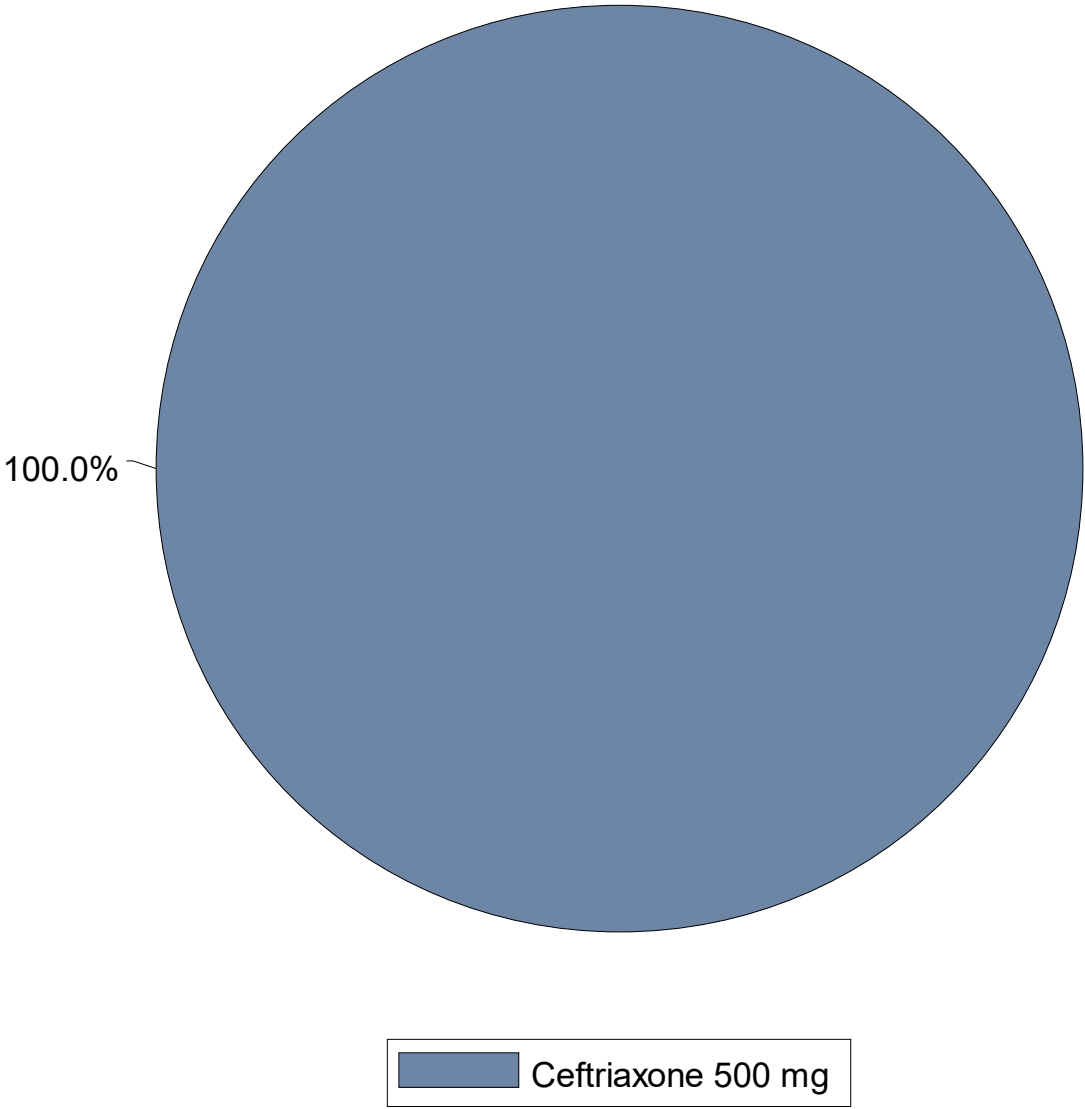
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
9 (3.1)	11 (4.0)	13 (4.5)	14 (4.7)	17 (6.1)	22 (7.5)	28 (9.5)	32 (11.8)	25 (10.7)	43 (14.9)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
48 (16.4)	51 (17.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	9 (10.8)	0 (0.0)	1 (33.3)

Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

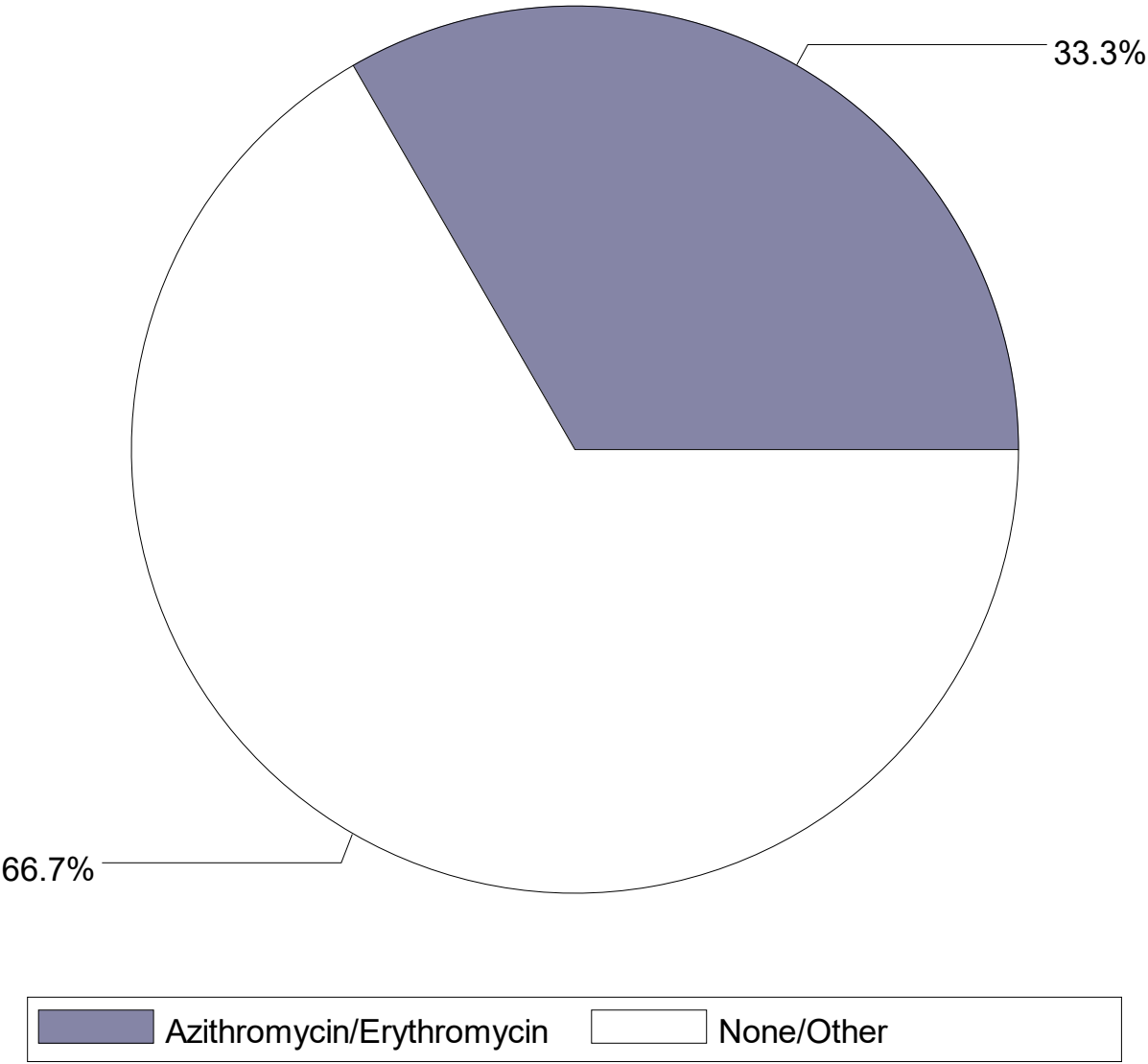
Site participated in GISP during 2002-2013 and 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2021



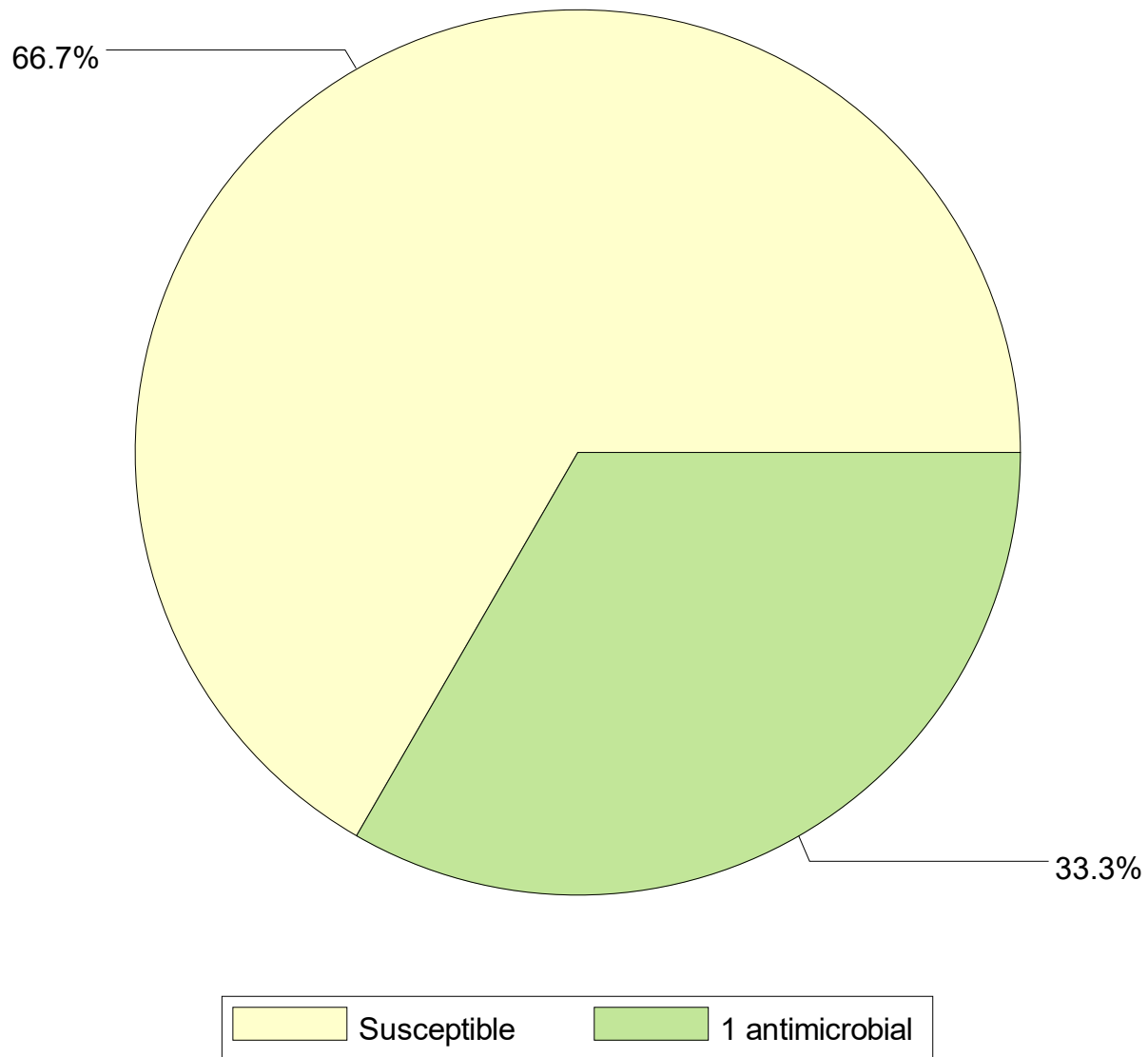
Primary Treatment	Count	Percentage
Ceftriaxone 500 mg	3	100.0

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	1	33.3
None/Other	2	66.7

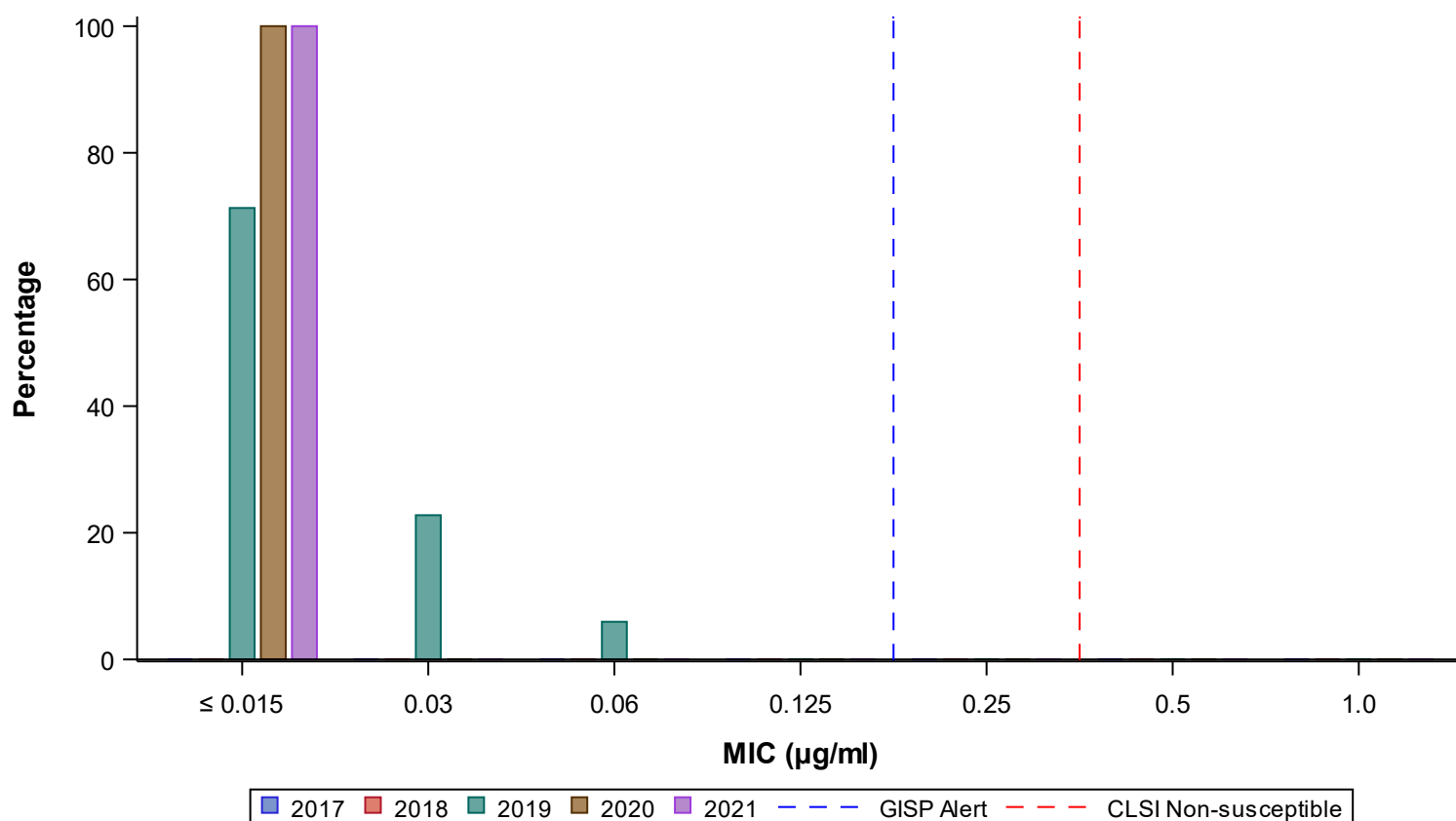
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	2	66.7
1 antimicrobial	1	33.3
2 antimicrobials	0	0.0
3 antimicrobials	0	0.0
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2019	72 (71.3)	23 (22.8)	6 (5.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	101
2020	3 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3
2021	3 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

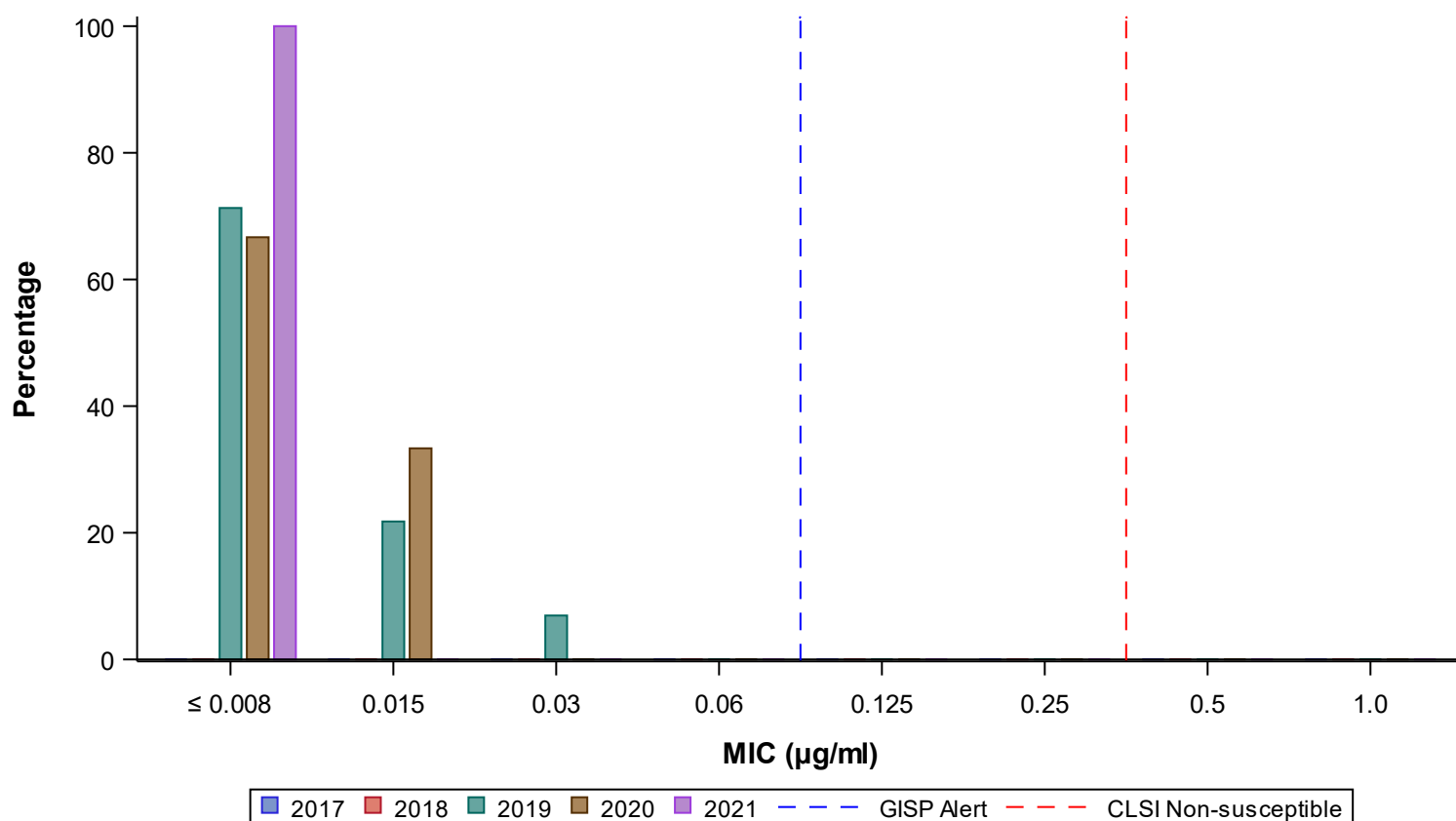
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2019	72 (71.3)	22 (21.8)	7 (6.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	101
2020	2 (66.7)	1 (33.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3
2021	3 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

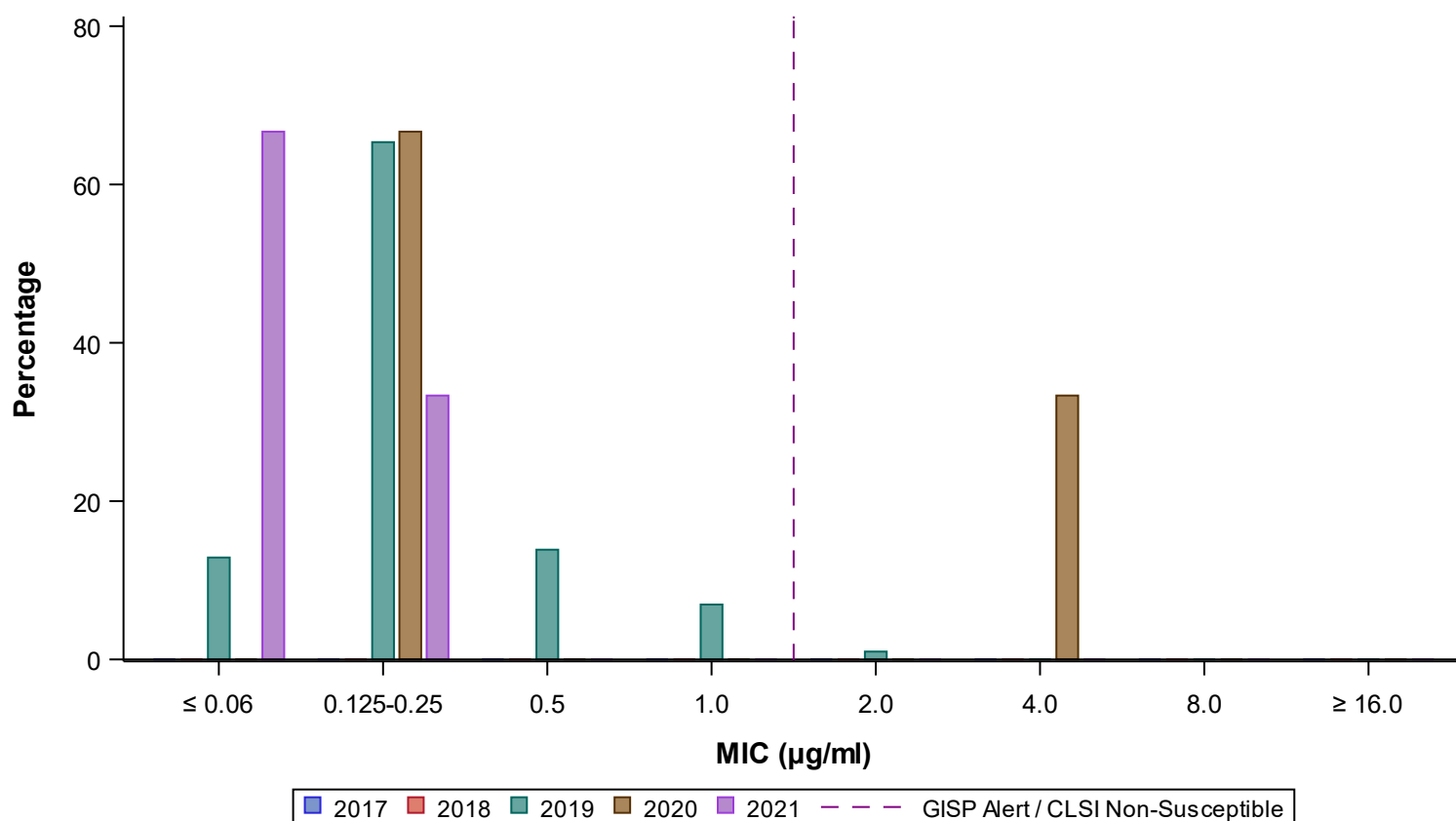
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2019	13 (12.9)	66 (65.3)	14 (13.9)	7 (6.9)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	101
2020	0 (0.0)	2 (66.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (33.3)	0 (0.0)	0 (0.0)	3
2021	2 (66.7)	1 (33.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3

GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

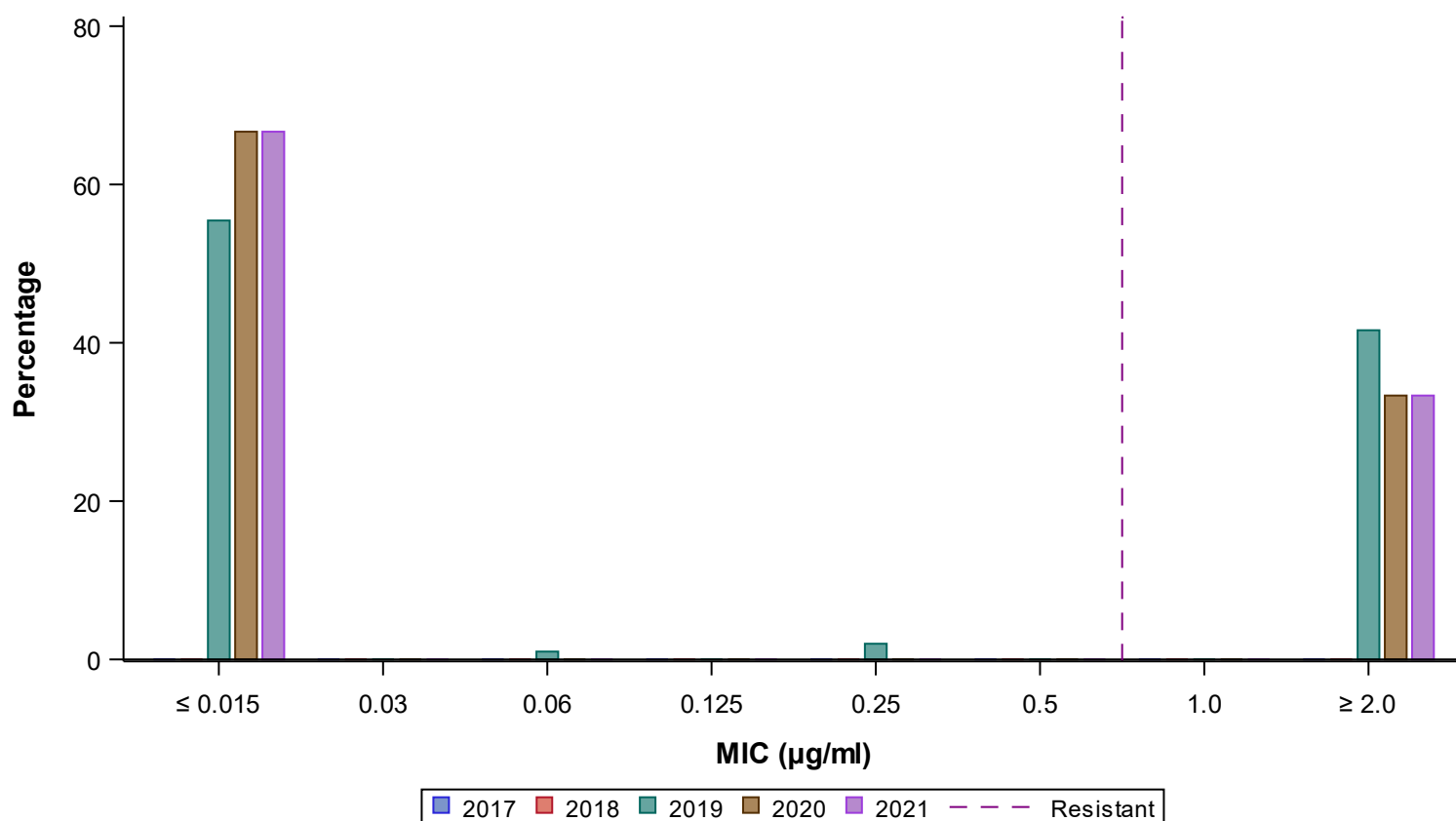
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2017-2021

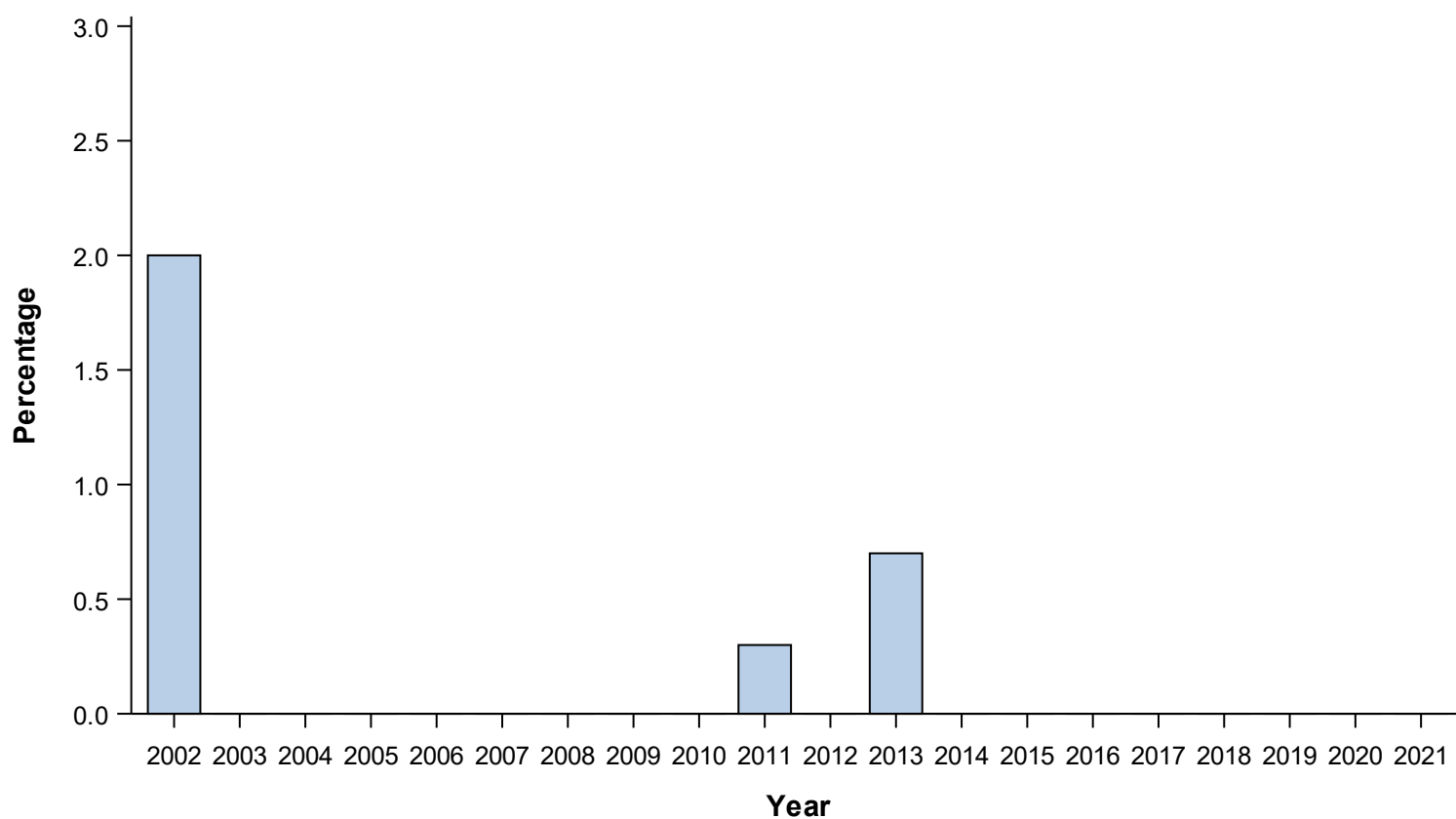


Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2019	56 (55.4)	0 (0.0)	1 (1.0)	0 (0.0)	2 (2.0)	0 (0.0)	0 (0.0)	42 (41.6)	101
2020	2 (66.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (33.3)	3
2021	2 (66.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (33.3)	3

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Note: Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2002-2021



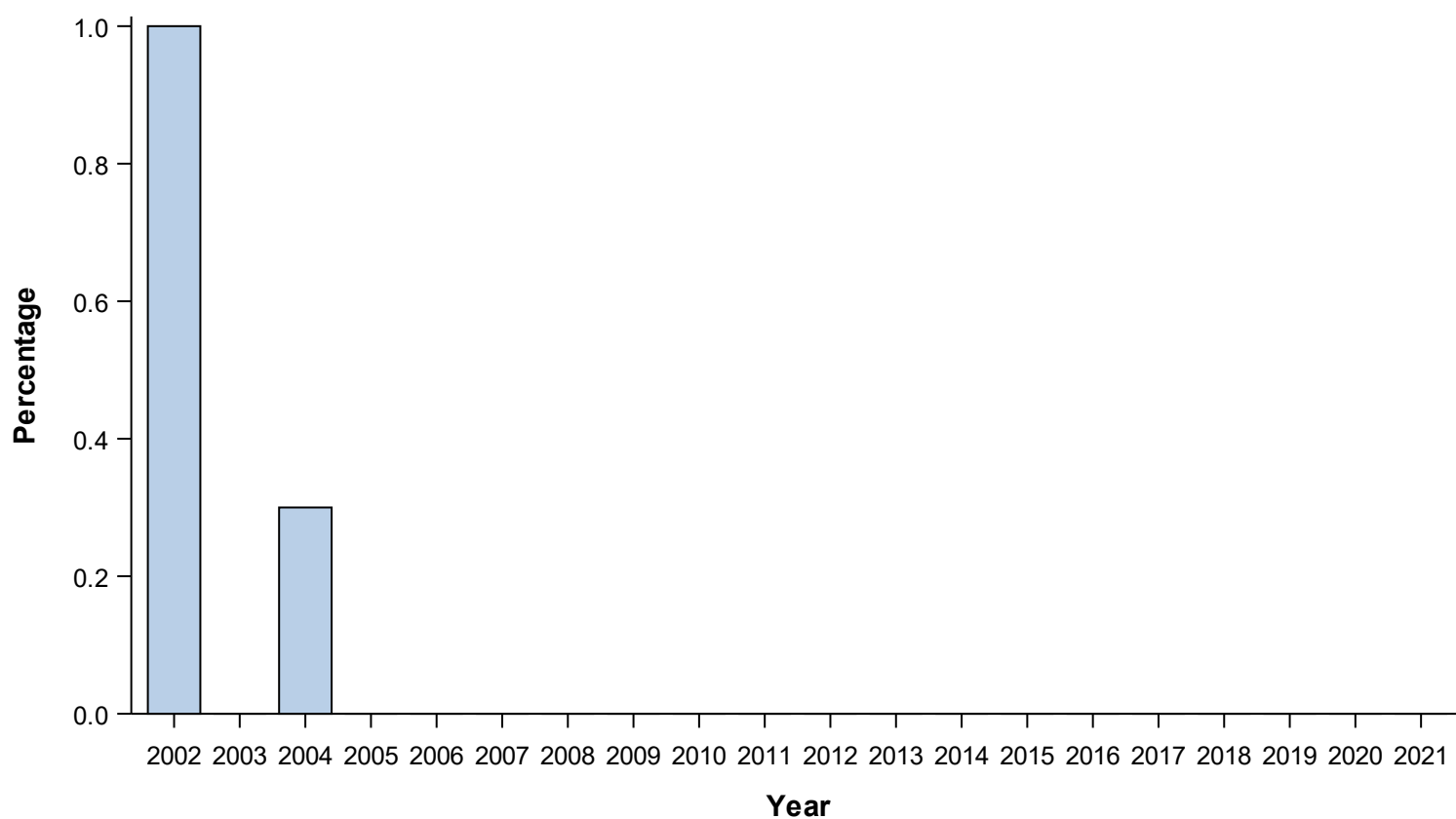
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
6 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2002-2013 and 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2002-2021



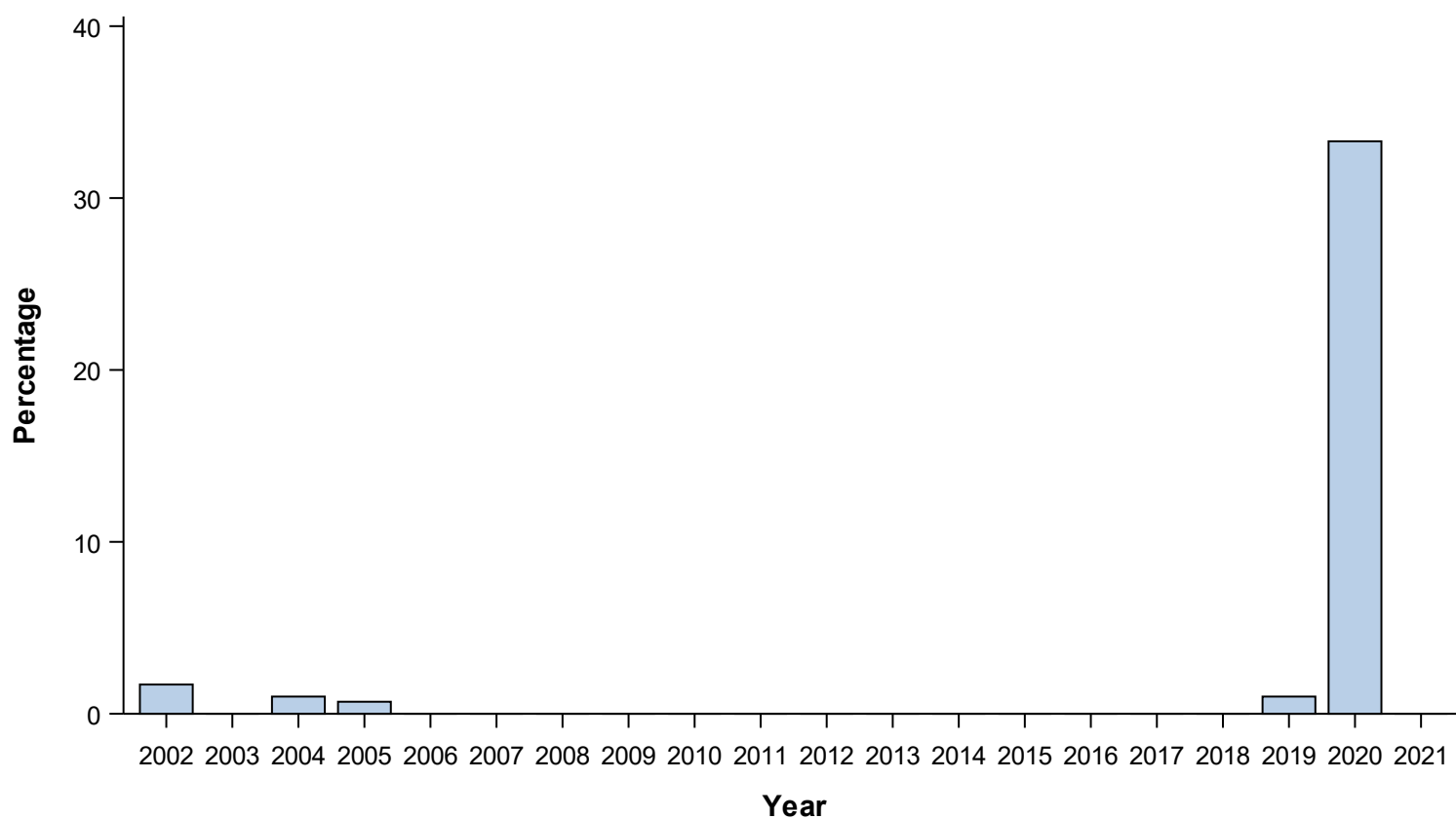
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
3 (1.0)	0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2002-2013 and 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Baltimore, Maryland, 2002-2021



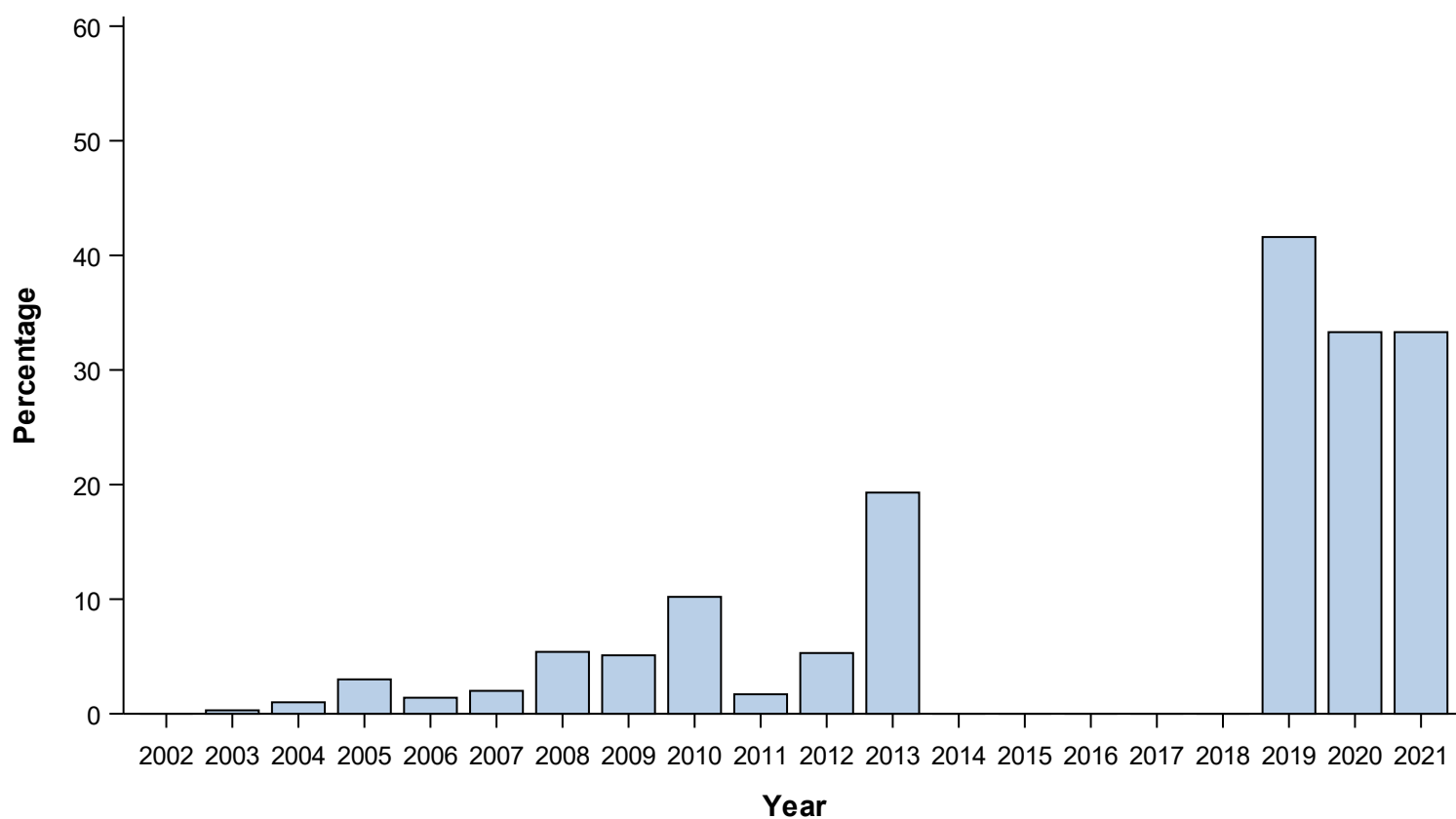
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
5 (1.7)	0 (0.0)	3 (1.0)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)	1 (33.3)	0 (0.0)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2002-2013 and 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Baltimore, Maryland, 2002-2021



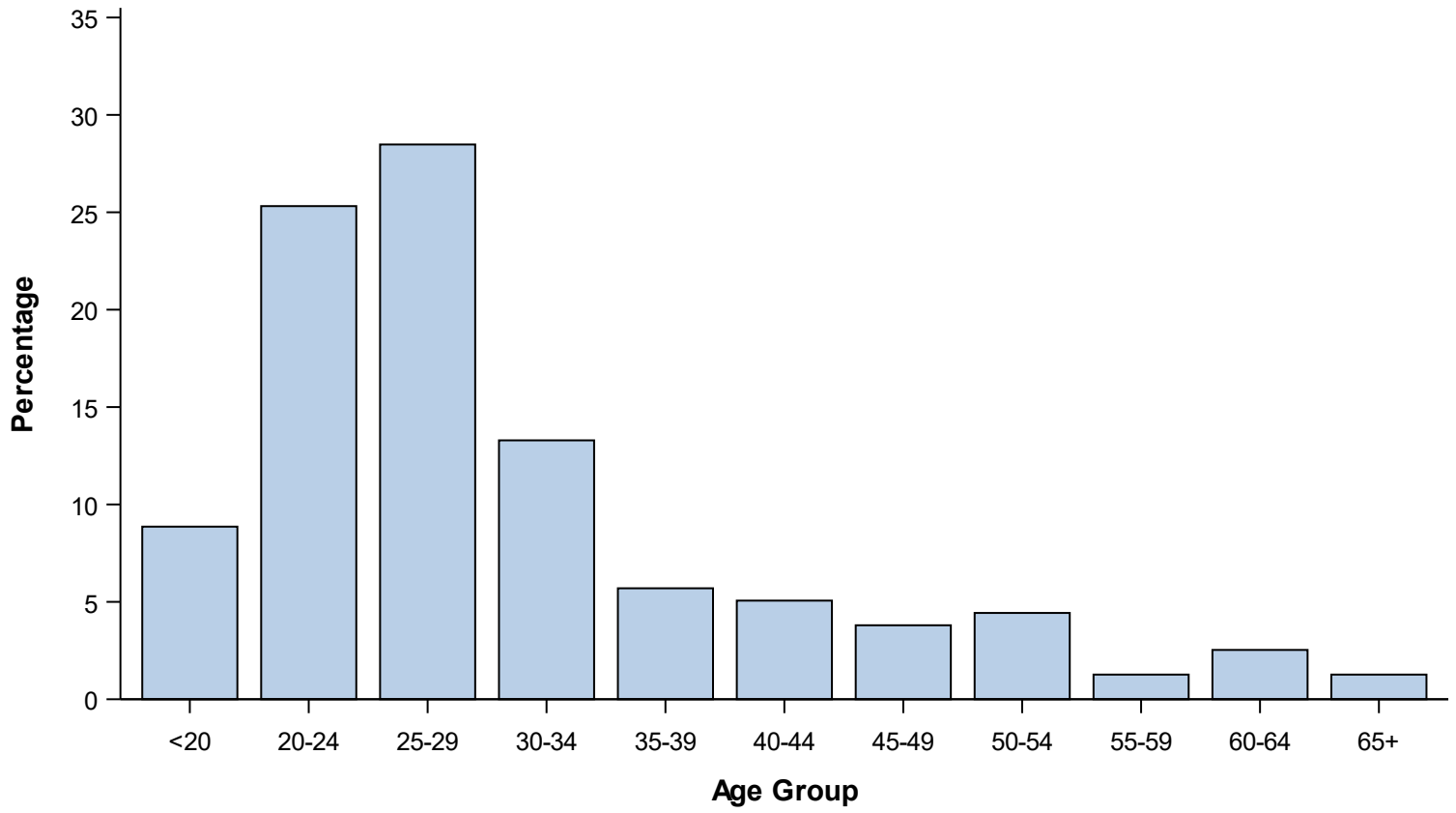
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	1 (0.3)	3 (1.0)	9 (3.0)	4 (1.4)	6 (2.0)	16 (5.4)	14 (5.1)	25 (10.2)	5 (1.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
16 (5.3)	58 (19.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	42 (41.6)	1 (33.3)	1 (33.3)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2002-2013 and 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

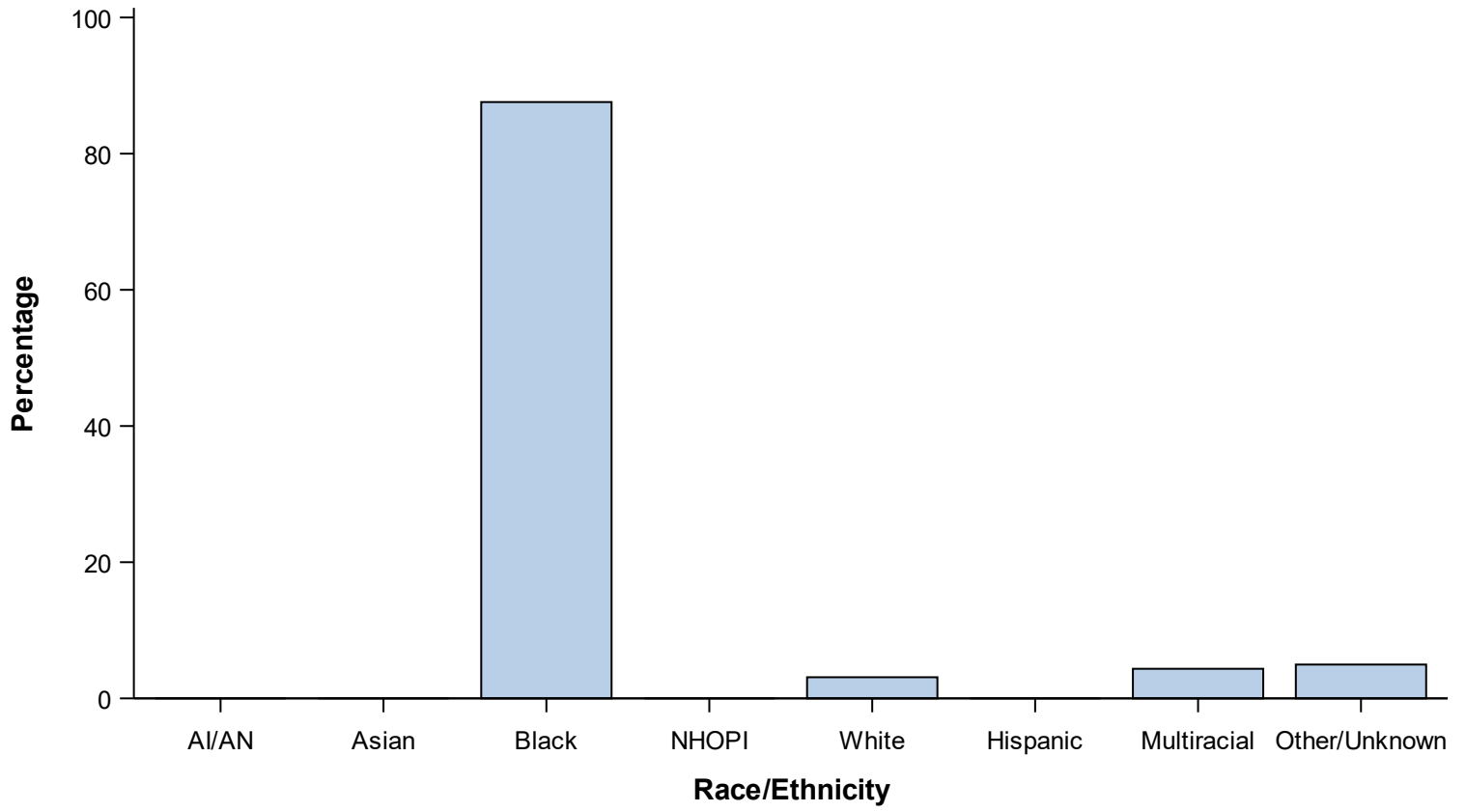
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
14 (8.9)	40 (25.3)	45 (28.5)	21 (13.3)	9 (5.7)	8 (5.1)	6 (3.8)	7 (4.4)	2 (1.3)	4 (2.5)	2 (1.3)	158

Note: Cases with unknown age were excluded.

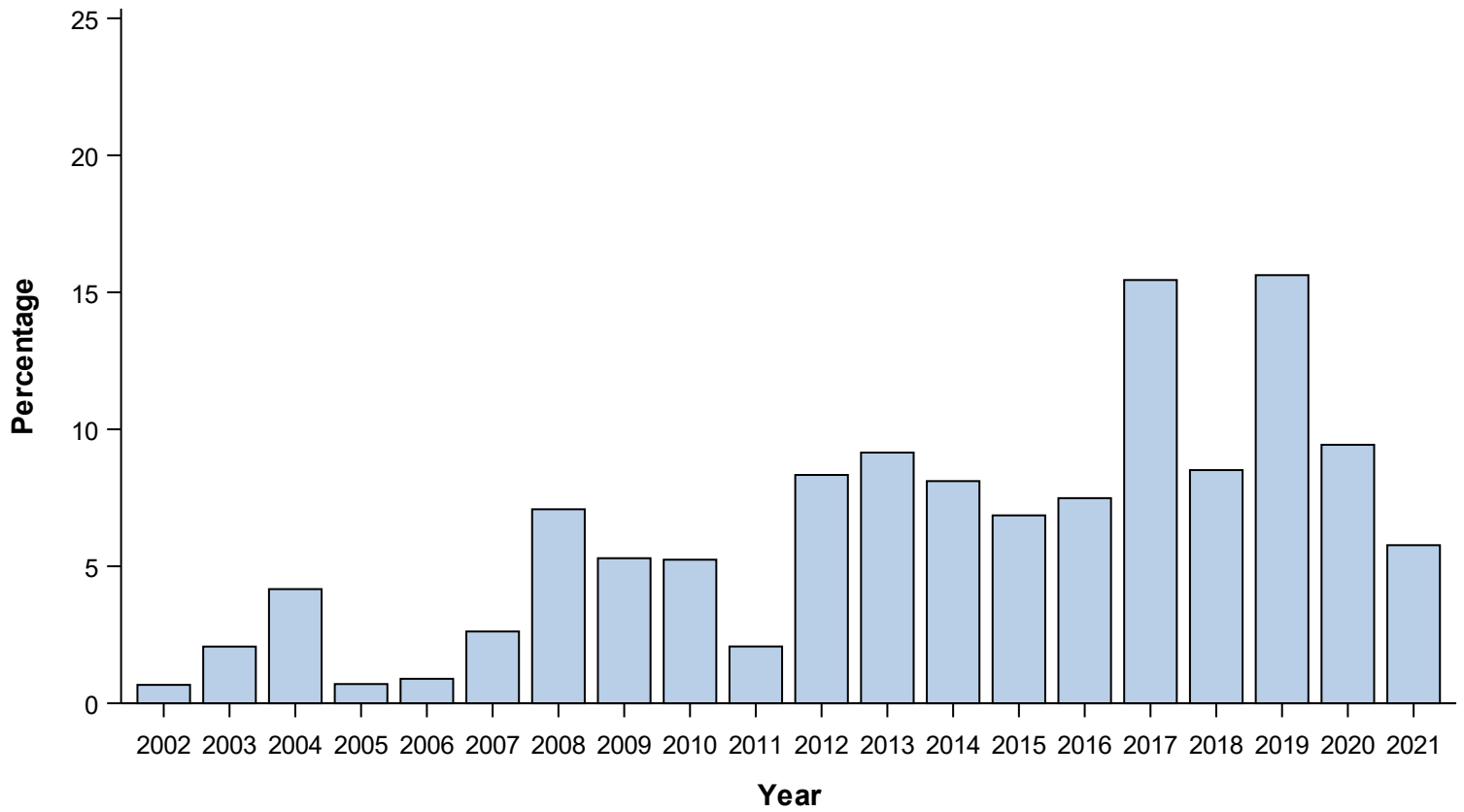
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	141 (87.6)	0 (0.0)	5 (3.1)	0 (0.0)	7 (4.3)	8 (5.0)	161

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Birmingham, Alabama, 2002-2021

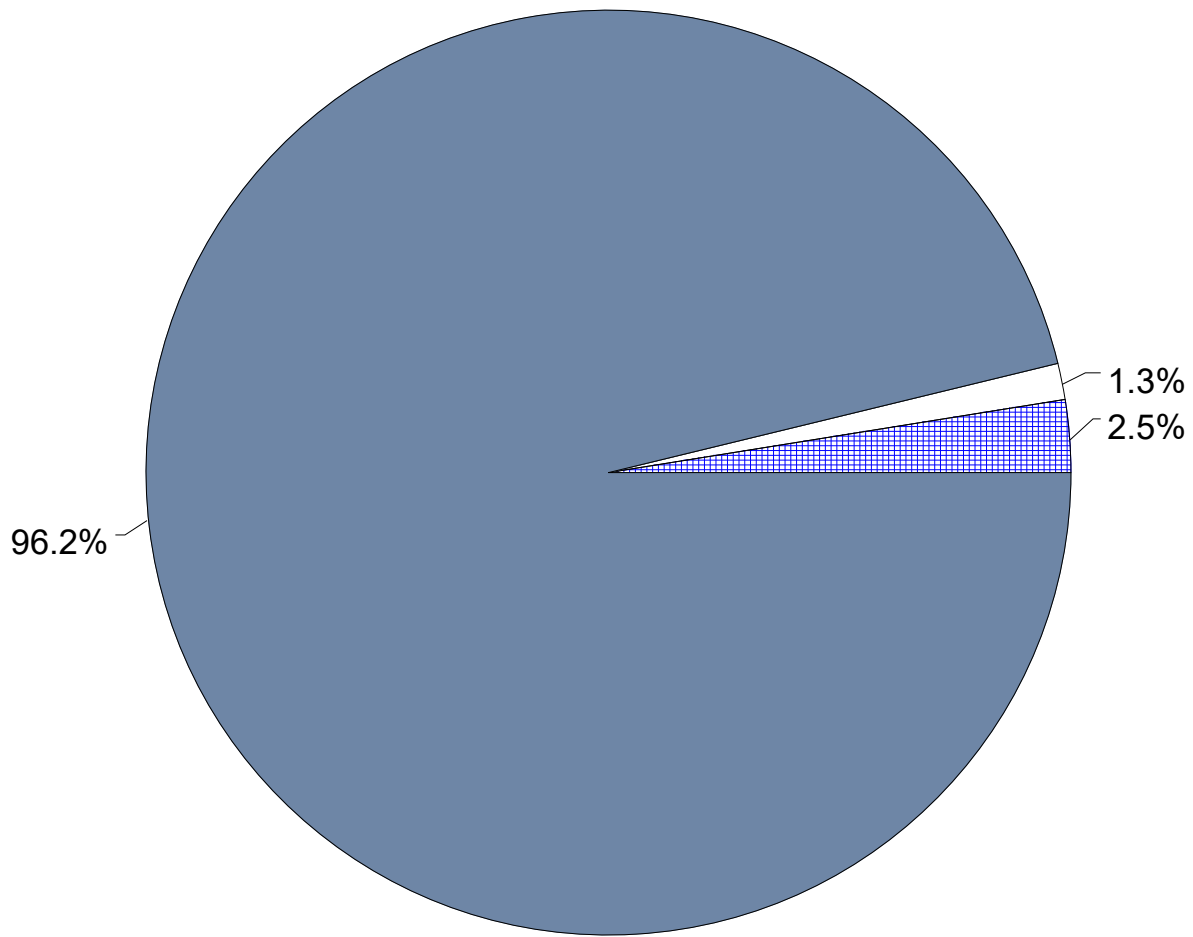


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
2 (0.7)	6 (2.1)	12 (4.2)	2 (0.7)	2 (0.9)	6 (2.6)	16 (7.1)	9 (5.3)	12 (5.2)	4 (2.1)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
25 (8.3)	14 (9.2)	18 (8.1)	12 (6.9)	14 (7.5)	19 (15.4)	8 (8.5)	15 (15.6)	10 (9.4)	9 (5.8)

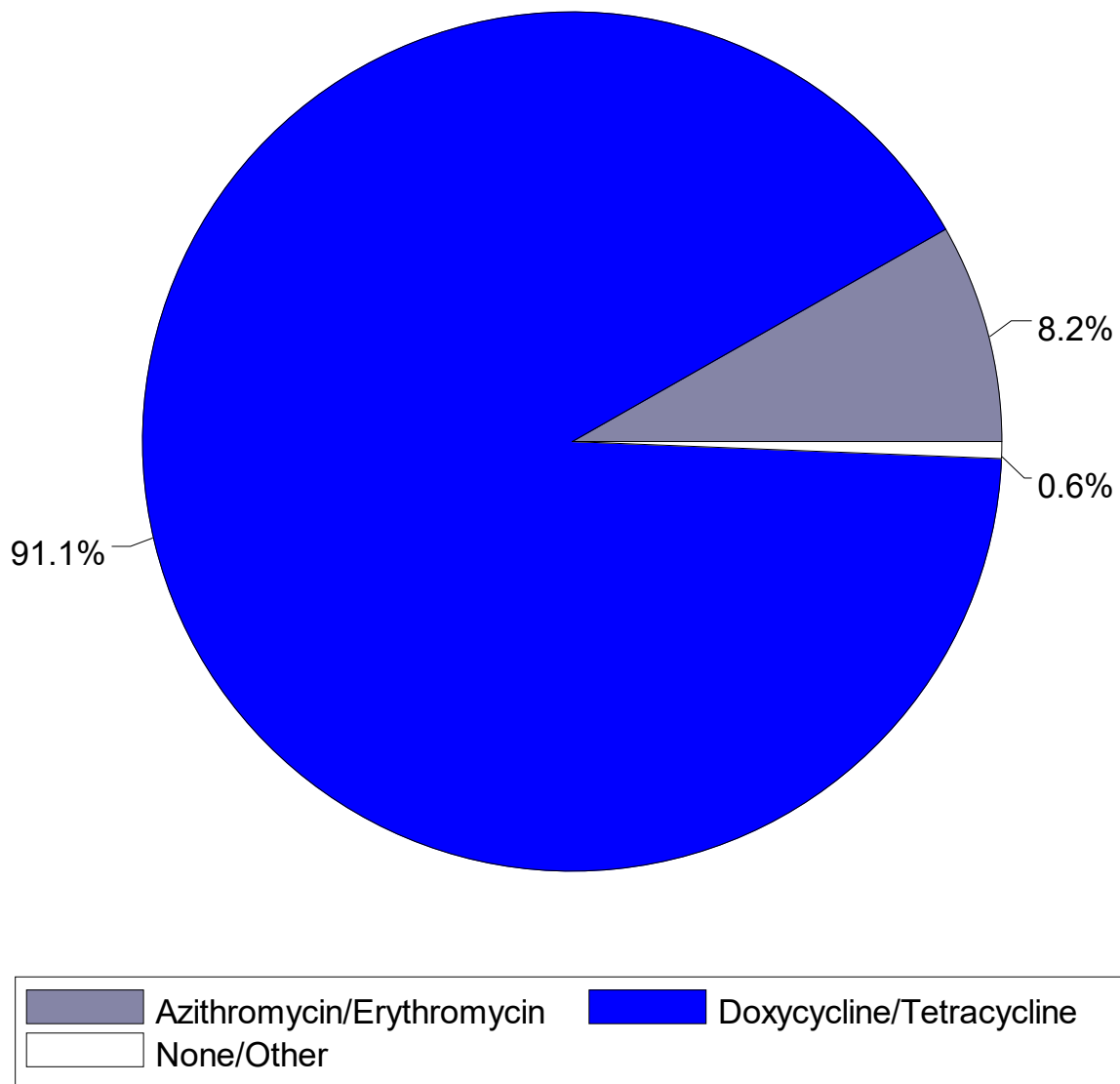
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Birmingham, Alabama, 2021



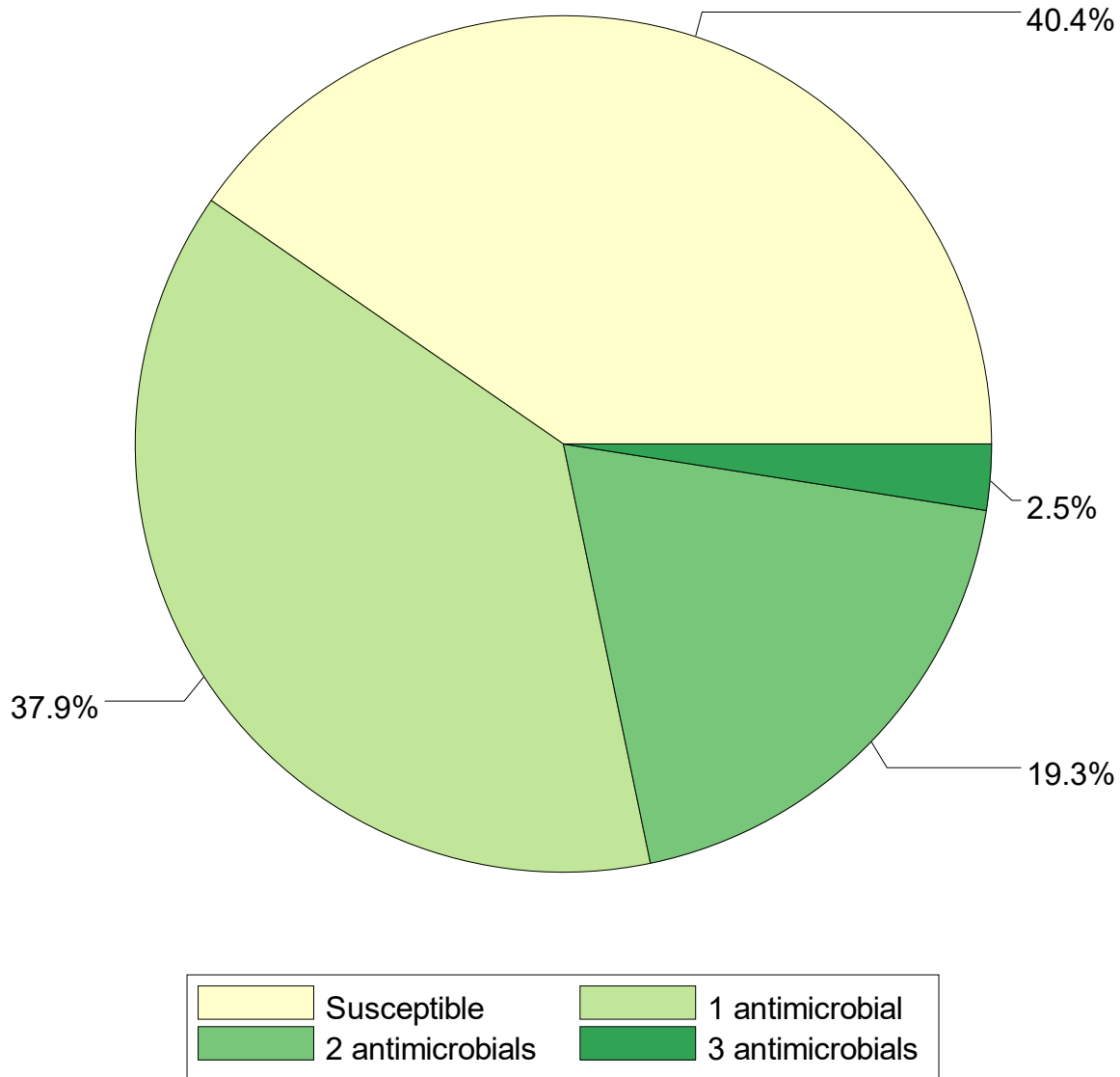
Primary Treatment	Count	Percentage
Azithromycin 2 gm	4	2.5
Gentamicin 240 mg	2	1.3
Ceftriaxone 500 mg	152	96.2

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	13	8.2
Doxycycline/Tetracycline	144	91.1
None/Other	1	0.6

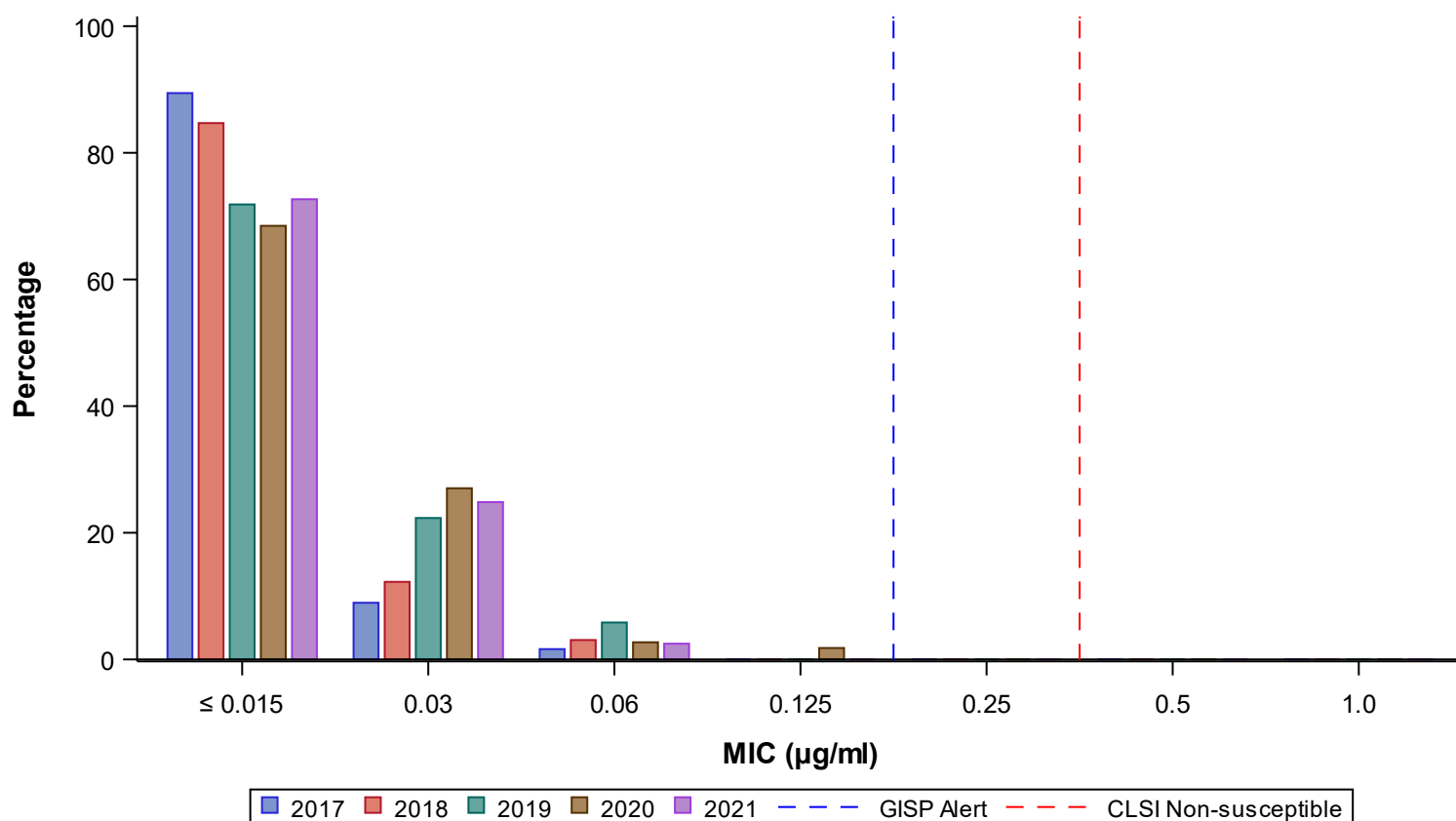
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	65	40.4
1 antimicrobial	61	37.9
2 antimicrobials	31	19.3
3 antimicrobials	4	2.5
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC $\geq$ 0.125 μ g/mL; Cefixime: MIC $\geq$ 0.25 μ g/mL; Azithromycin: MIC $\geq$ 2.0 μ g/ml; Resistance = Tetracycline: MIC $\geq$ 2.0 μ g/mL; Ciprofloxacin: MIC $\geq$ 1.0 μ g/mL; Penicillin: MIC $\geq$ 2.0 μ g/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2017-2021



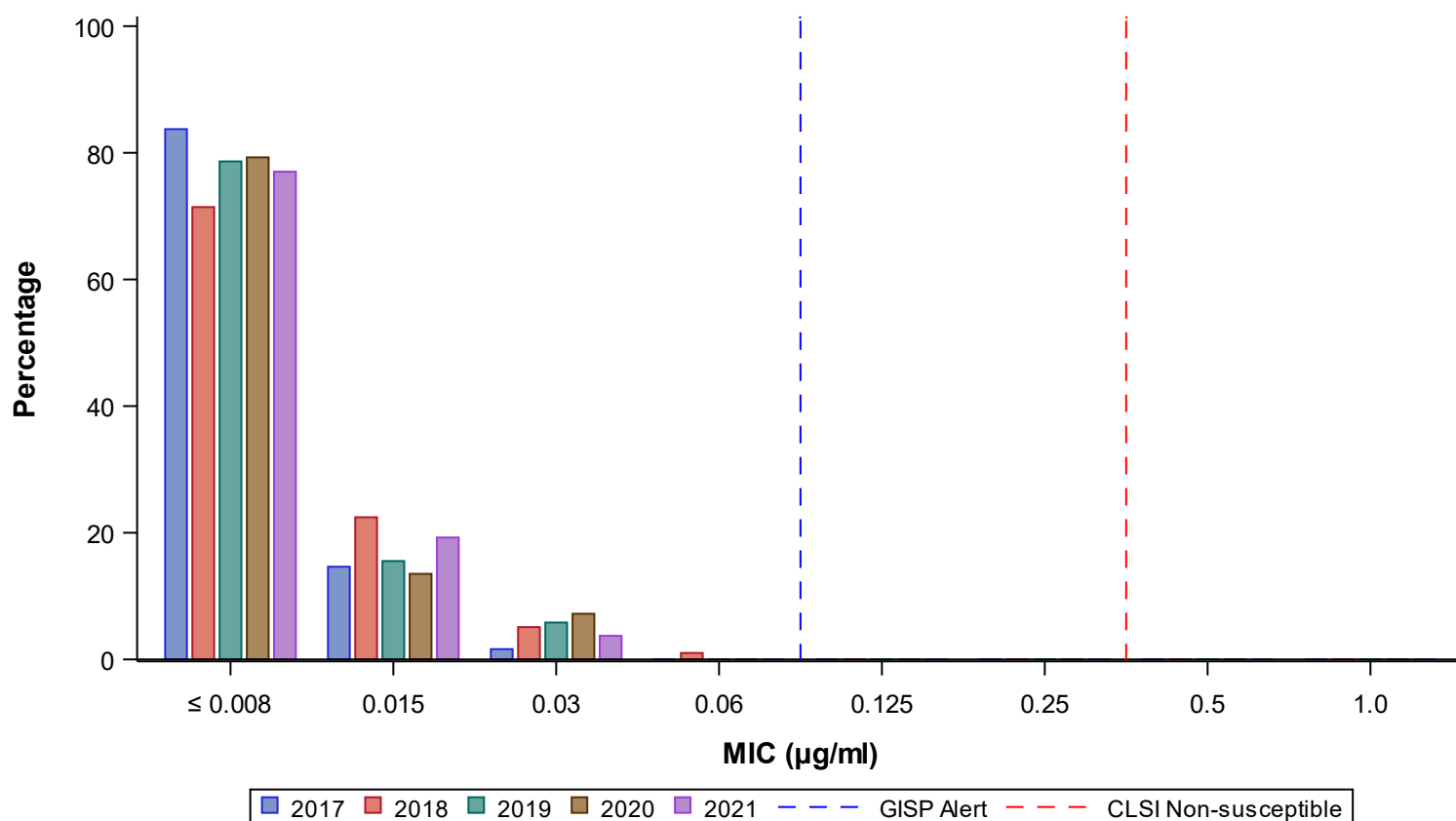
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	110 (89.4)	11 (8.9)	2 (1.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	123
2018	83 (84.7)	12 (12.2)	3 (3.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	98
2019	74 (71.8)	23 (22.3)	6 (5.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	103
2020	76 (68.5)	30 (27.0)	3 (2.7)	2 (1.8)	0 (0.0)	0 (0.0)	0 (0.0)	111
2021	117 (72.7)	40 (24.8)	4 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	161

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	103 (83.7)	18 (14.6)	2 (1.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	123
2018	70 (71.4)	22 (22.4)	5 (5.1)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	98
2019	81 (78.6)	16 (15.5)	6 (5.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	103
2020	88 (79.3)	15 (13.5)	8 (7.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	111
2021	124 (77.0)	31 (19.3)	6 (3.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	161

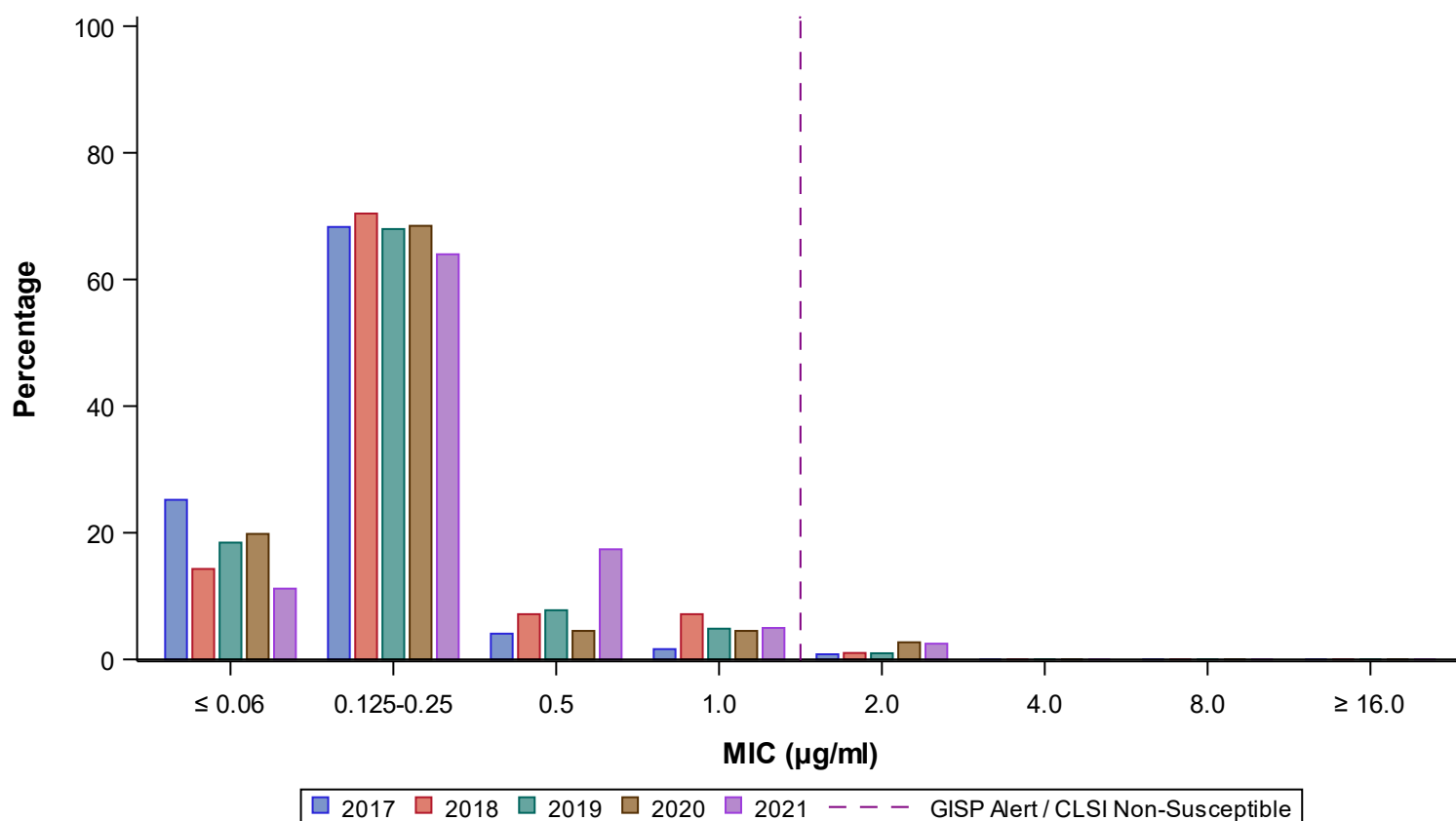
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	31 (25.2)	84 (68.3)	5 (4.1)	2 (1.6)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	123
2018	14 (14.3)	69 (70.4)	7 (7.1)	7 (7.1)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	98
2019	19 (18.4)	70 (68.0)	8 (7.8)	5 (4.9)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	103
2020	22 (19.8)	76 (68.5)	5 (4.5)	5 (4.5)	3 (2.7)	0 (0.0)	0 (0.0)	0 (0.0)	111
2021	18 (11.2)	103 (64.0)	28 (17.4)	8 (5.0)	4 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	161

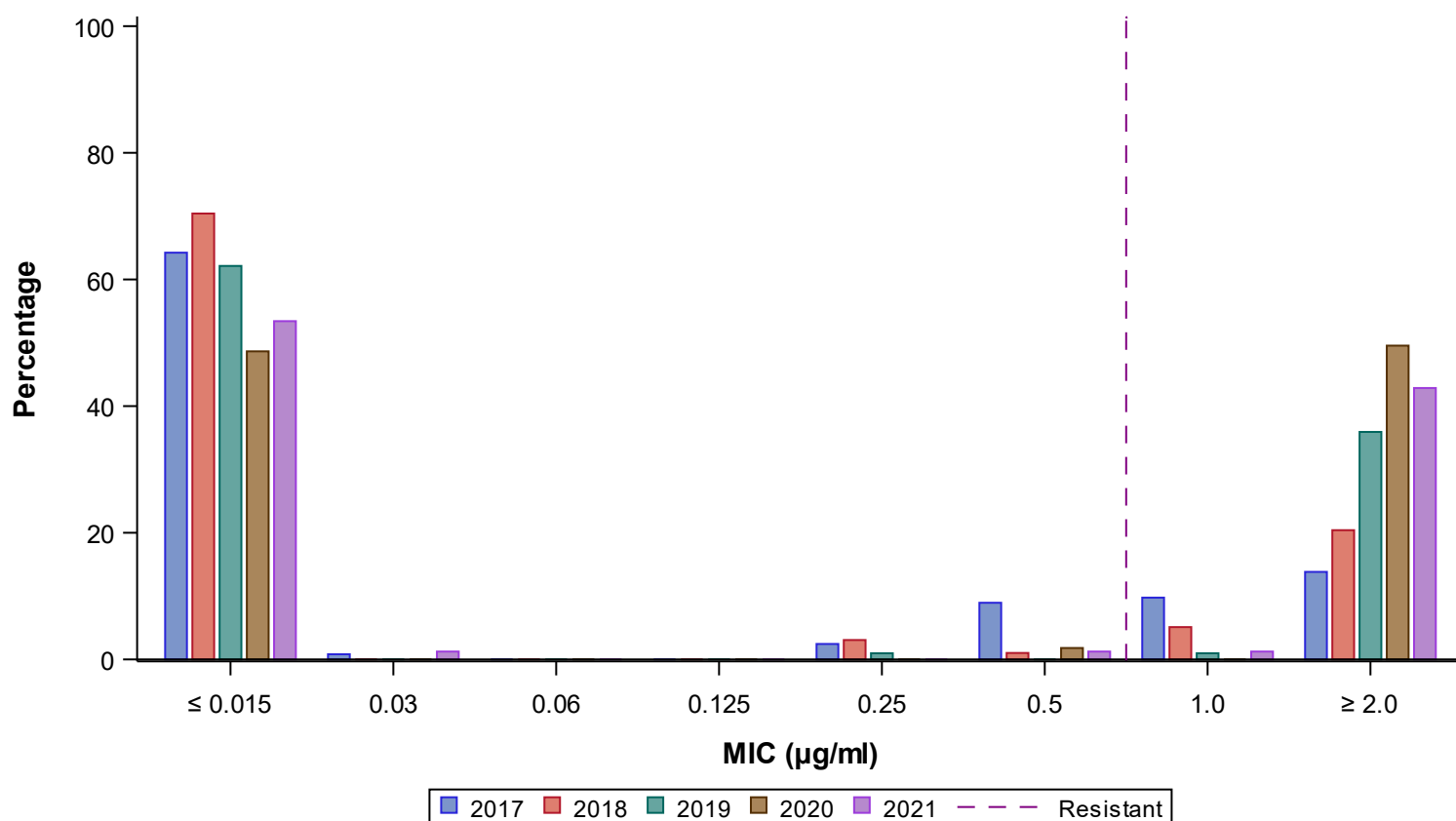
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

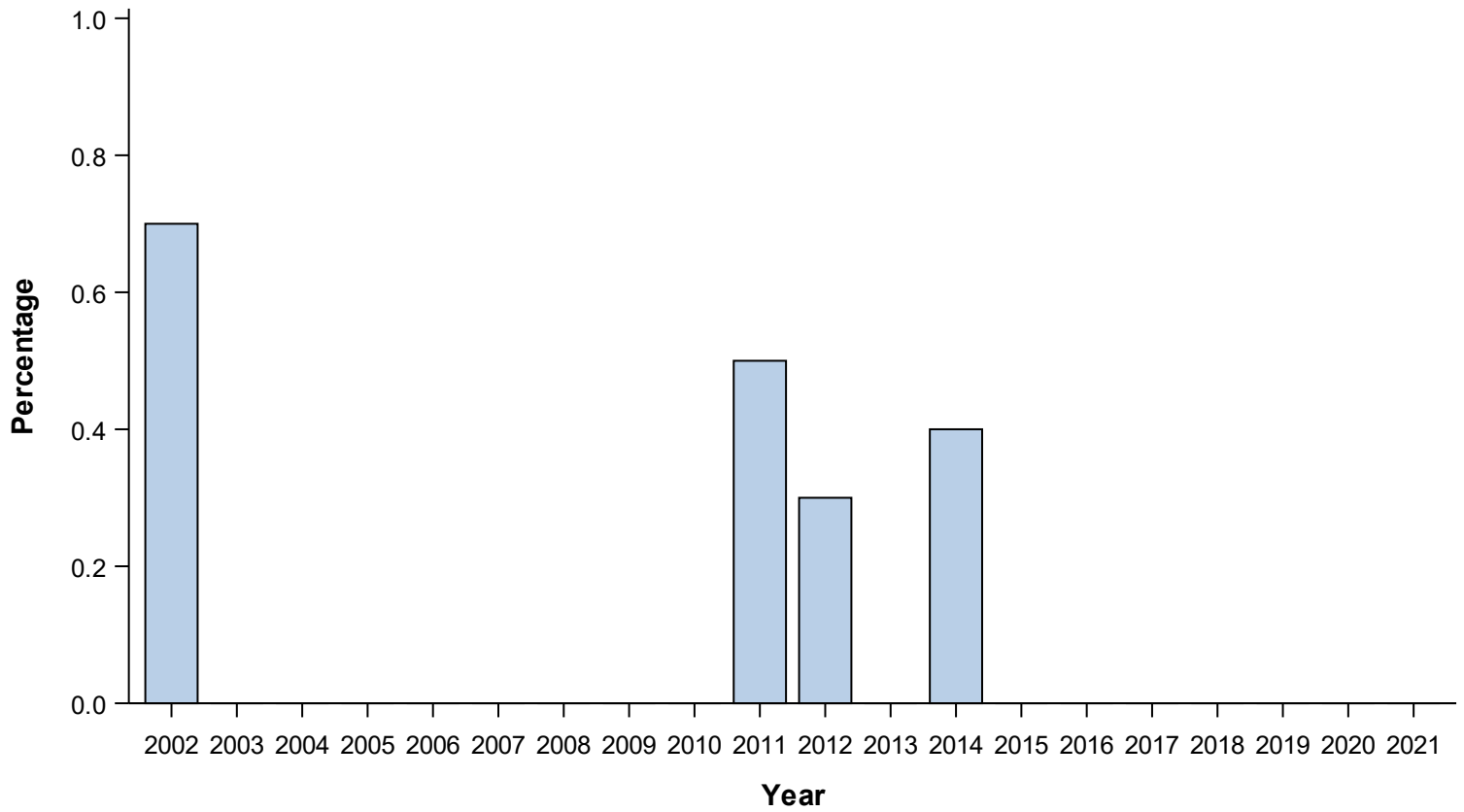
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	79 (64.2)	1 (0.8)	0 (0.0)	0 (0.0)	3 (2.4)	11 (8.9)	12 (9.8)	17 (13.8)	123
2018	69 (70.4)	0 (0.0)	0 (0.0)	0 (0.0)	3 (3.1)	1 (1.0)	5 (5.1)	20 (20.4)	98
2019	64 (62.1)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)	0 (0.0)	1 (1.0)	37 (35.9)	103
2020	54 (48.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.8)	0 (0.0)	55 (49.5)	111
2021	86 (53.4)	2 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.2)	2 (1.2)	69 (42.9)	161

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2002-2021

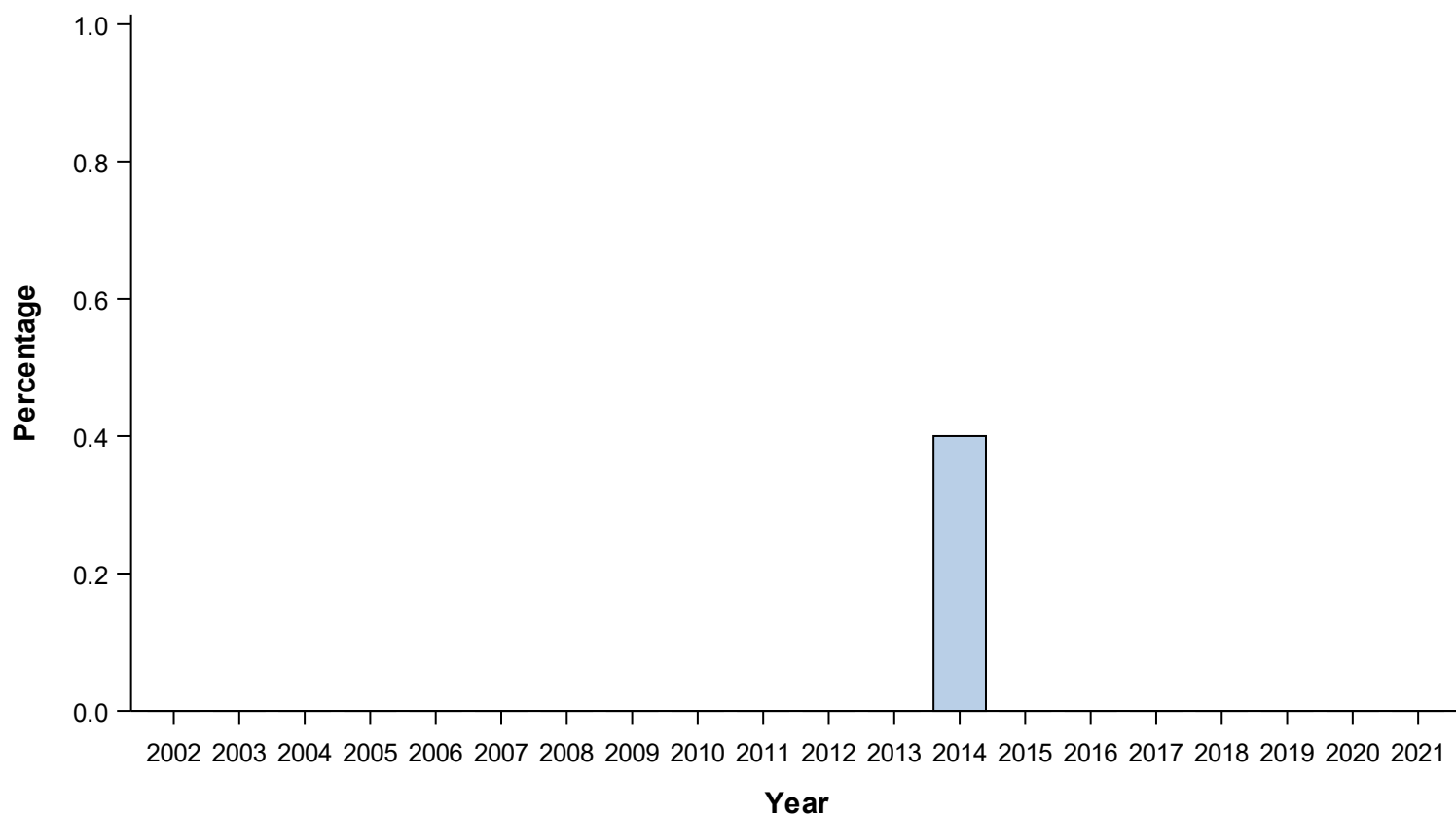


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.3)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2002-2021

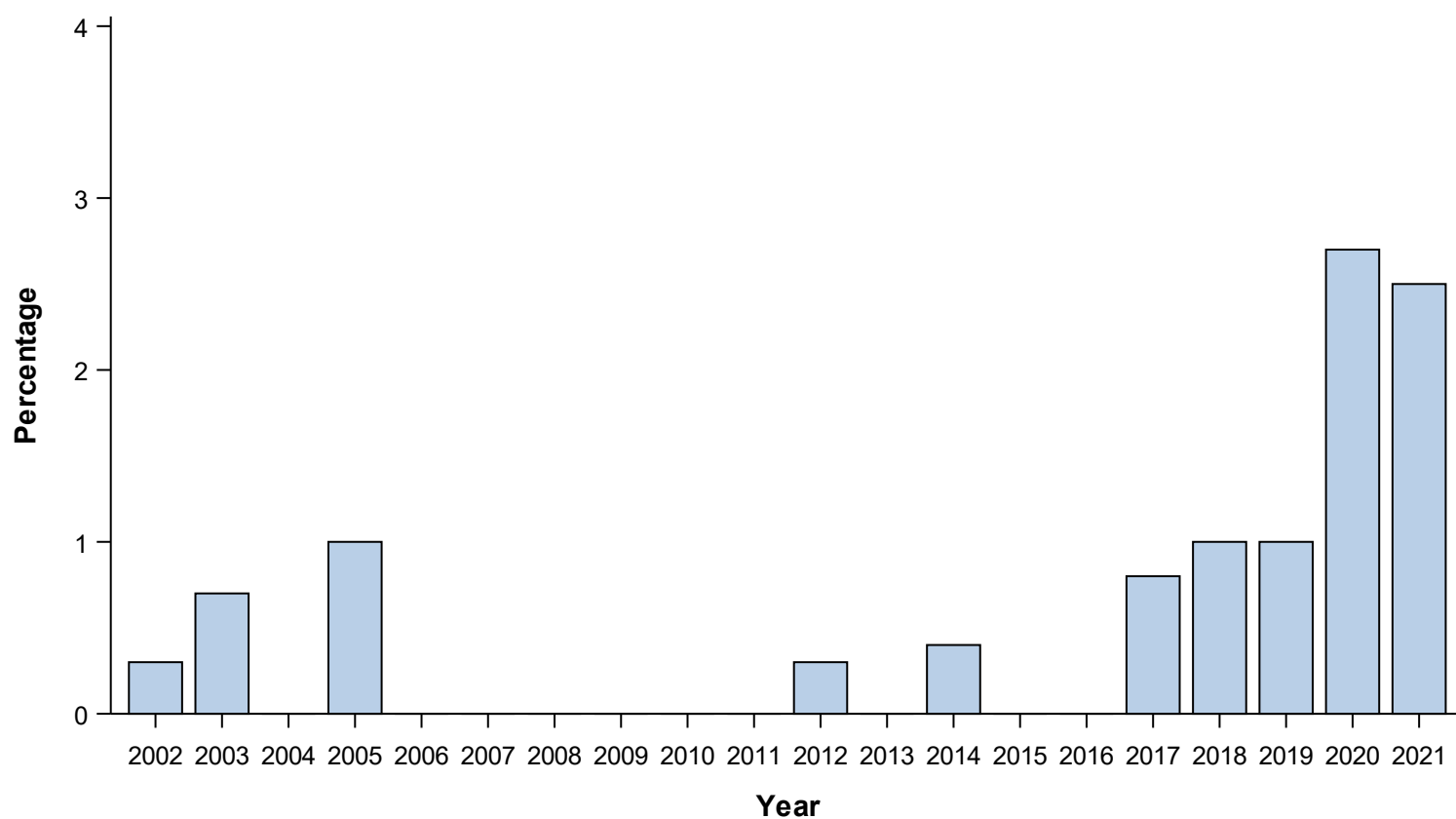


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Birmingham, Alabama, 2002-2021

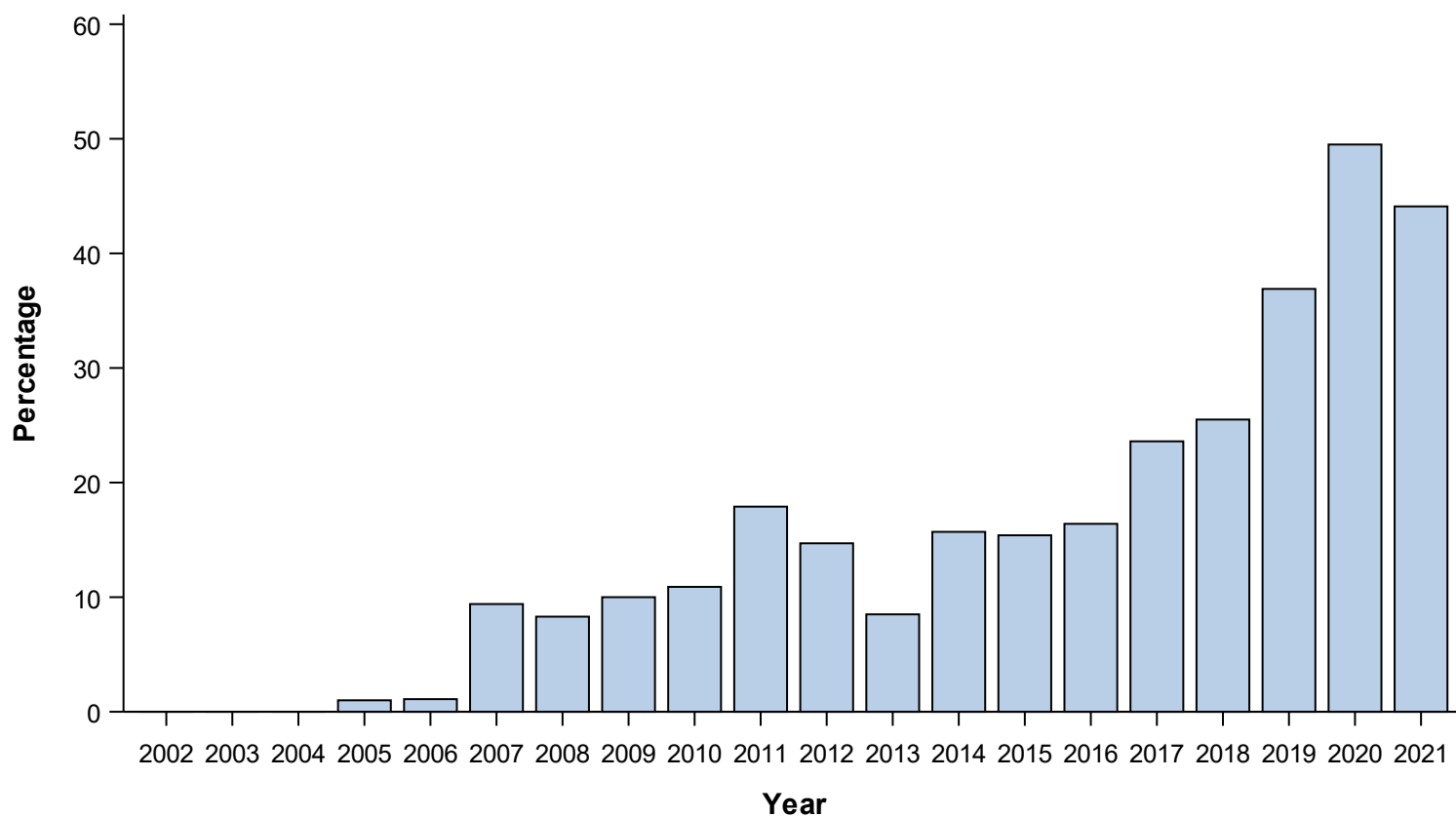


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (0.3)	2 (0.7)	0 (0.0)	3 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.3)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	1 (0.8)	1 (1.0)	1 (1.0)	3 (2.7)	4 (2.5)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Birmingham, Alabama, 2002-2021

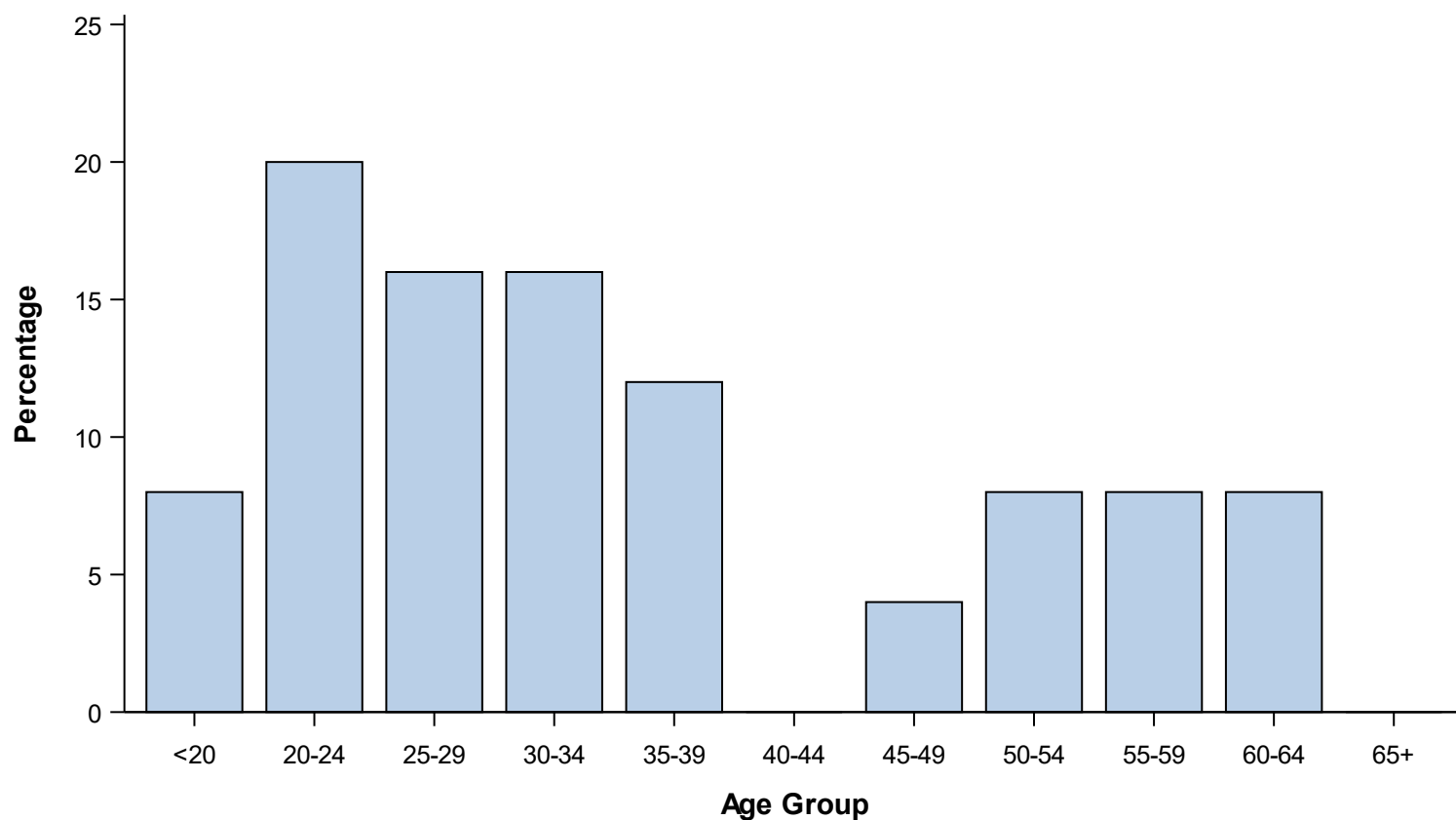


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	3 (1.0)	3 (1.1)	26 (9.4)	20 (8.3)	21 (10.0)	29 (10.9)	38 (17.9)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
44 (14.7)	13 (8.5)	35 (15.7)	27 (15.4)	31 (16.4)	29 (23.6)	25 (25.5)	38 (36.9)	55 (49.5)	71 (44.1)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

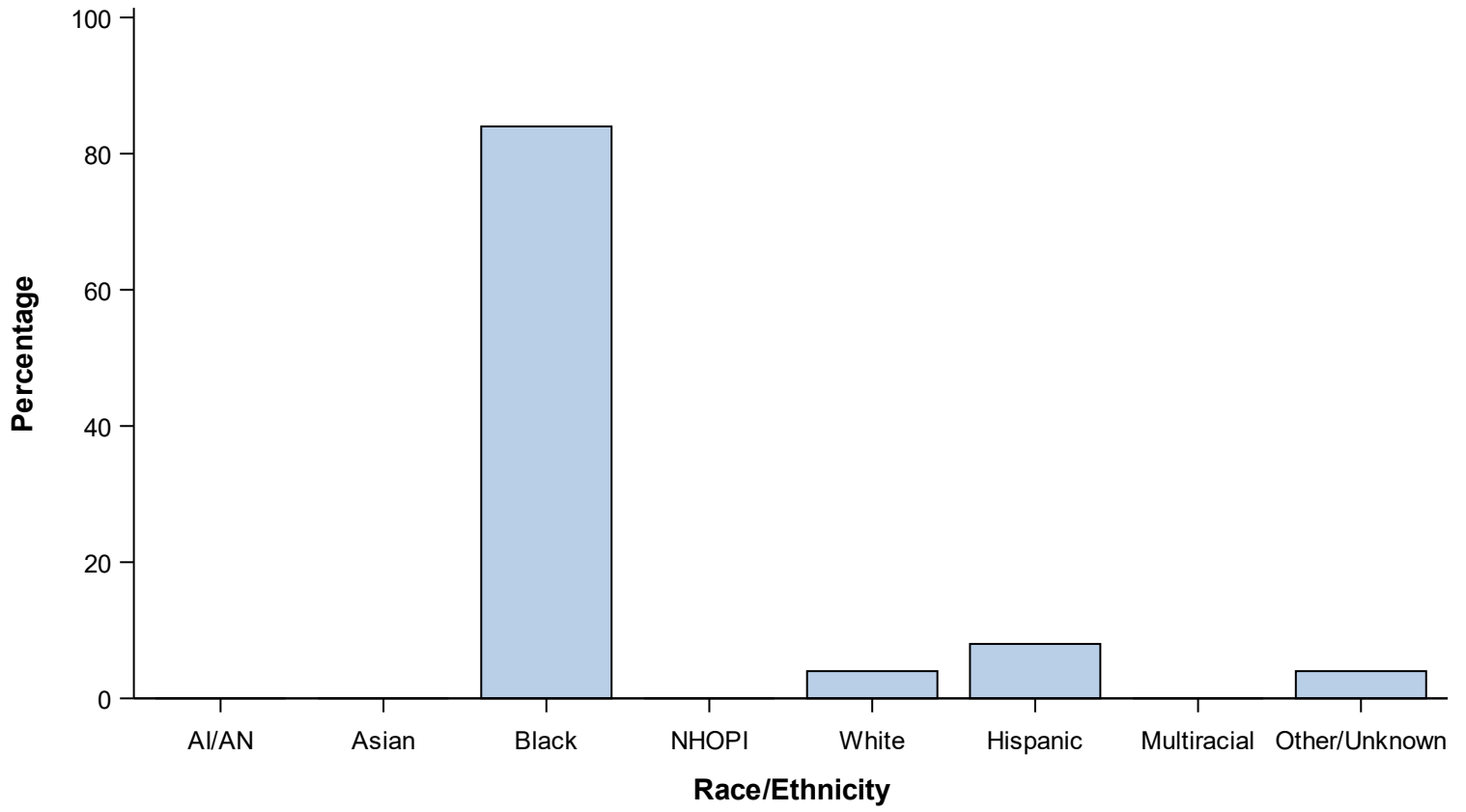
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
2 (8.0)	5 (20.0)	4 (16.0)	4 (16.0)	3 (12.0)	0 (0.0)	1 (4.0)	2 (8.0)	2 (8.0)	2 (8.0)	0 (0.0)	25

Note: Cases with unknown age were excluded.

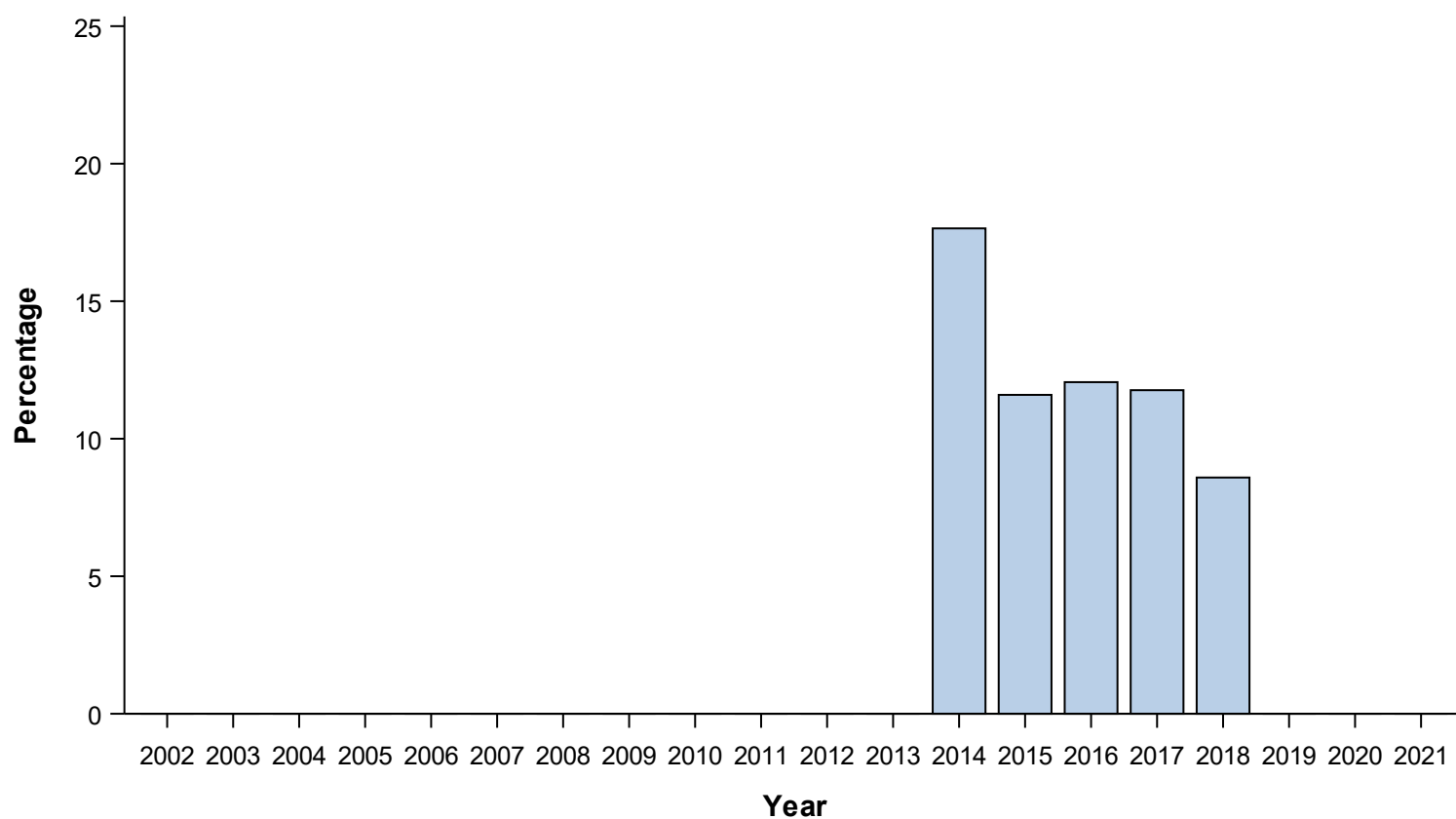
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	21 (84.0)	0 (0.0)	1 (4.0)	2 (8.0)	0 (0.0)	1 (4.0)	25

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Buffalo, New York, 2002-2021

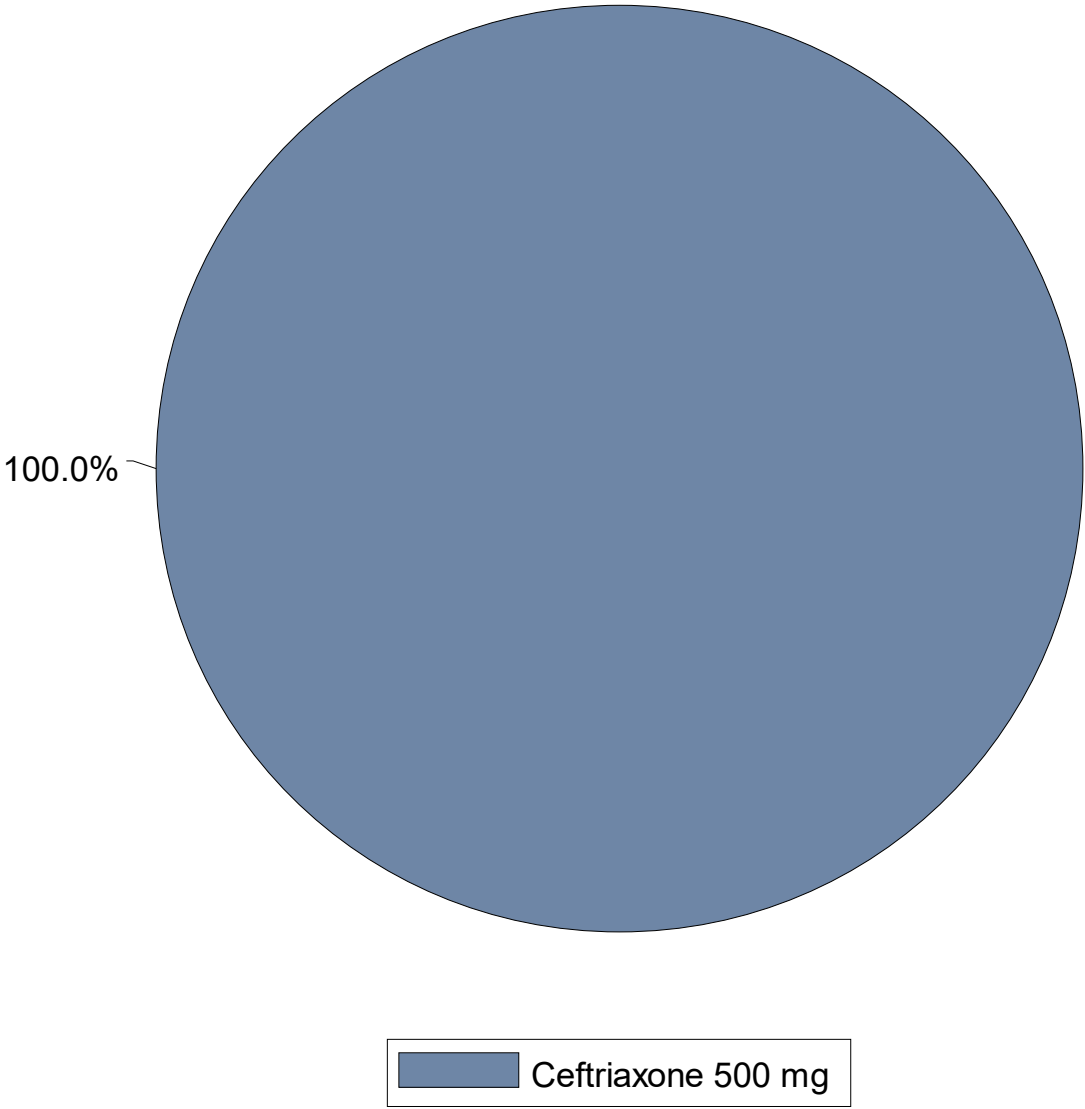


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	15 (17.6)	16 (11.6)	17 (12.1)	16 (11.8)	14 (8.6)	0 (0.0)	0 (0.0)	0 (0.0)

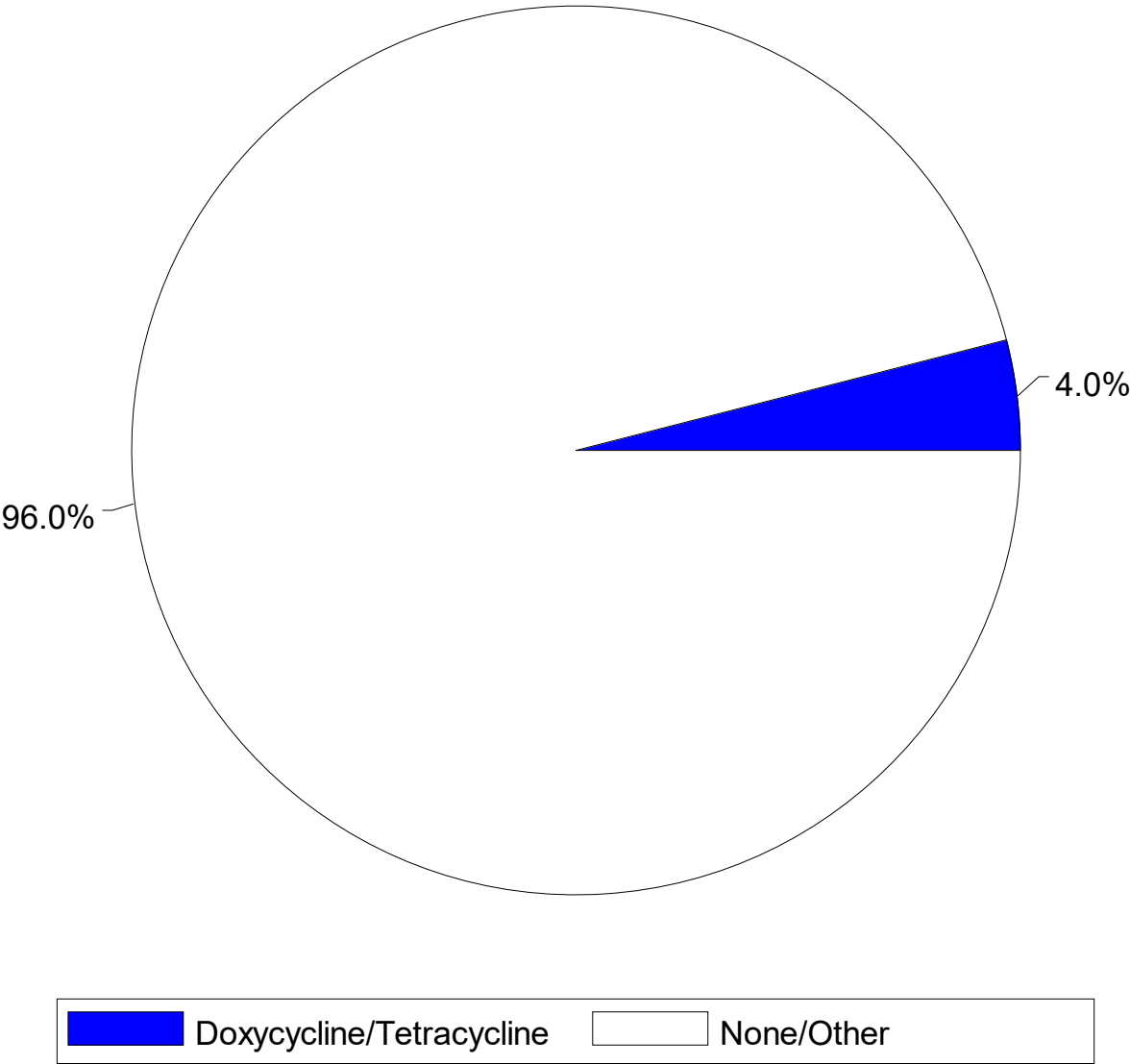
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.
Site participated in GISP during 2014-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2021



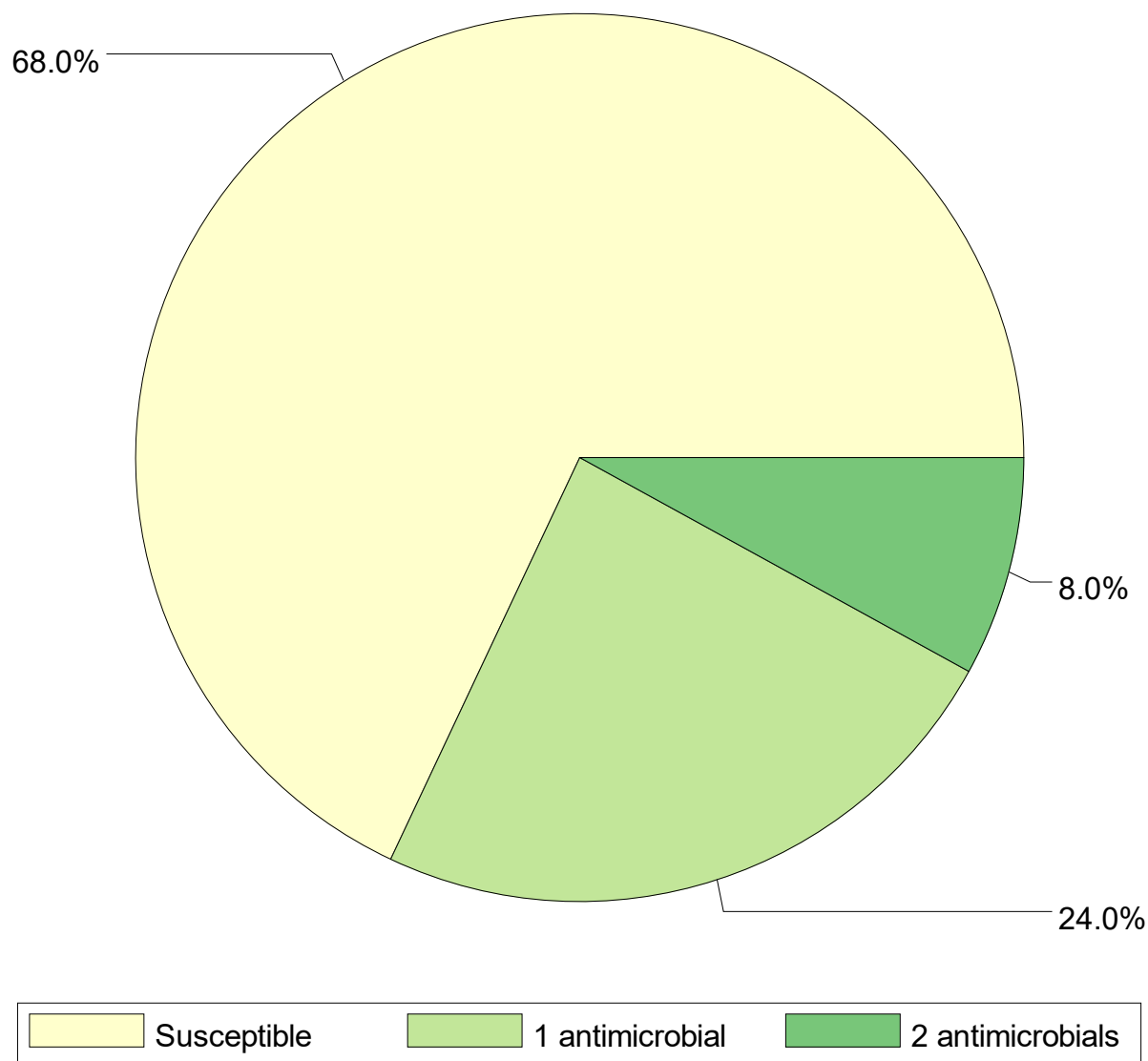
Primary Treatment	Count	Percentage
Ceftriaxone 500 mg	25	100.0

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2021



Secondary Treatment	Count	Percentage
Doxycycline/Tetracycline	1	4.0
None/Other	24	96.0

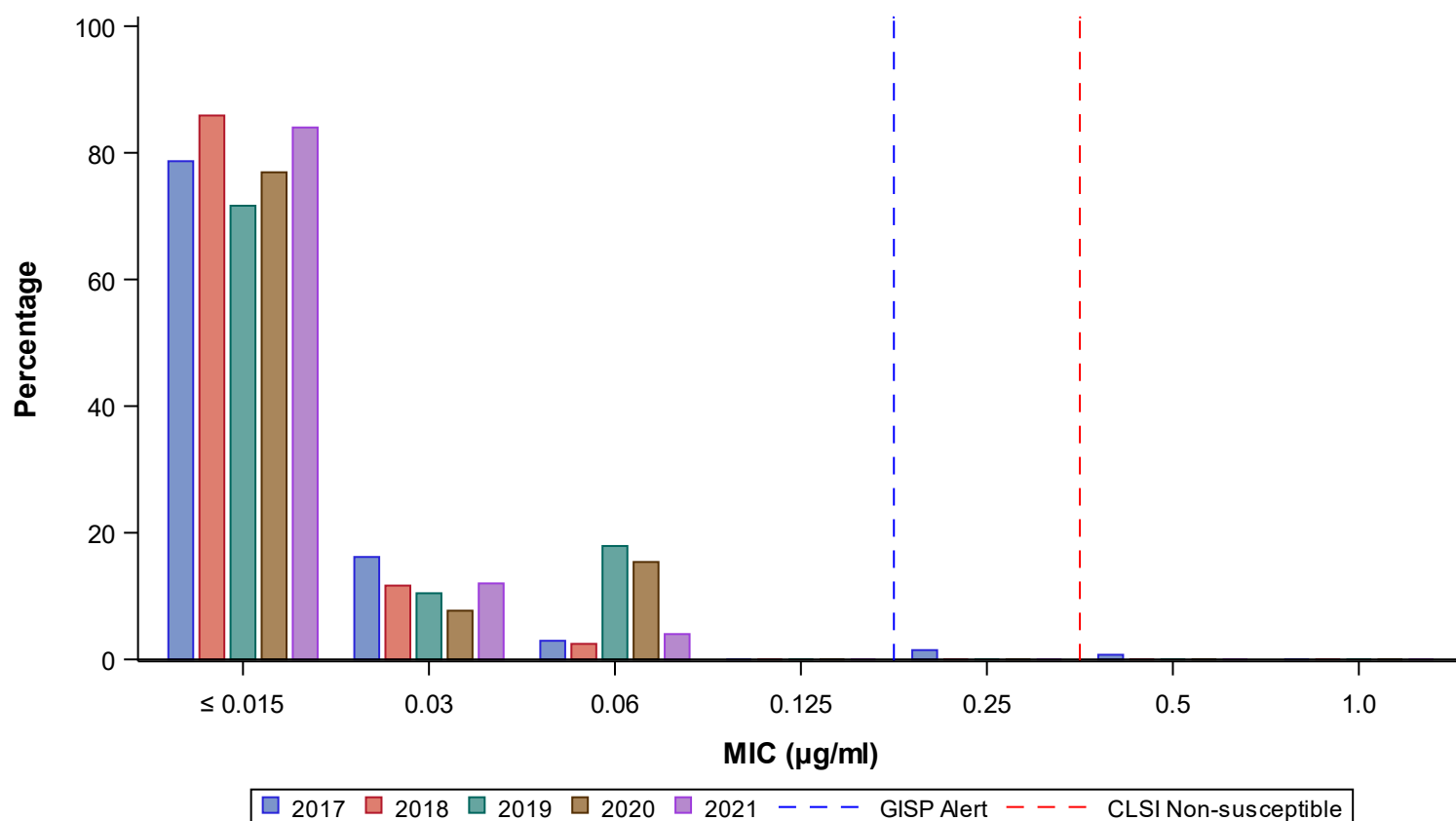
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	17	68.0
1 antimicrobial	6	24.0
2 antimicrobials	2	8.0
3 antimicrobials	0	0.0
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC $\geq$ 0.125 μ g/mL; Cefixime: MIC $\geq$ 0.25 μ g/mL; Azithromycin: MIC $\geq$ 2.0 μ g/ml; Resistance = Tetracycline: MIC $\geq$ 2.0 μ g/mL; Ciprofloxacin: MIC $\geq$ 1.0 μ g/mL; Penicillin: MIC $\geq$ 2.0 μ g/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2017-2021



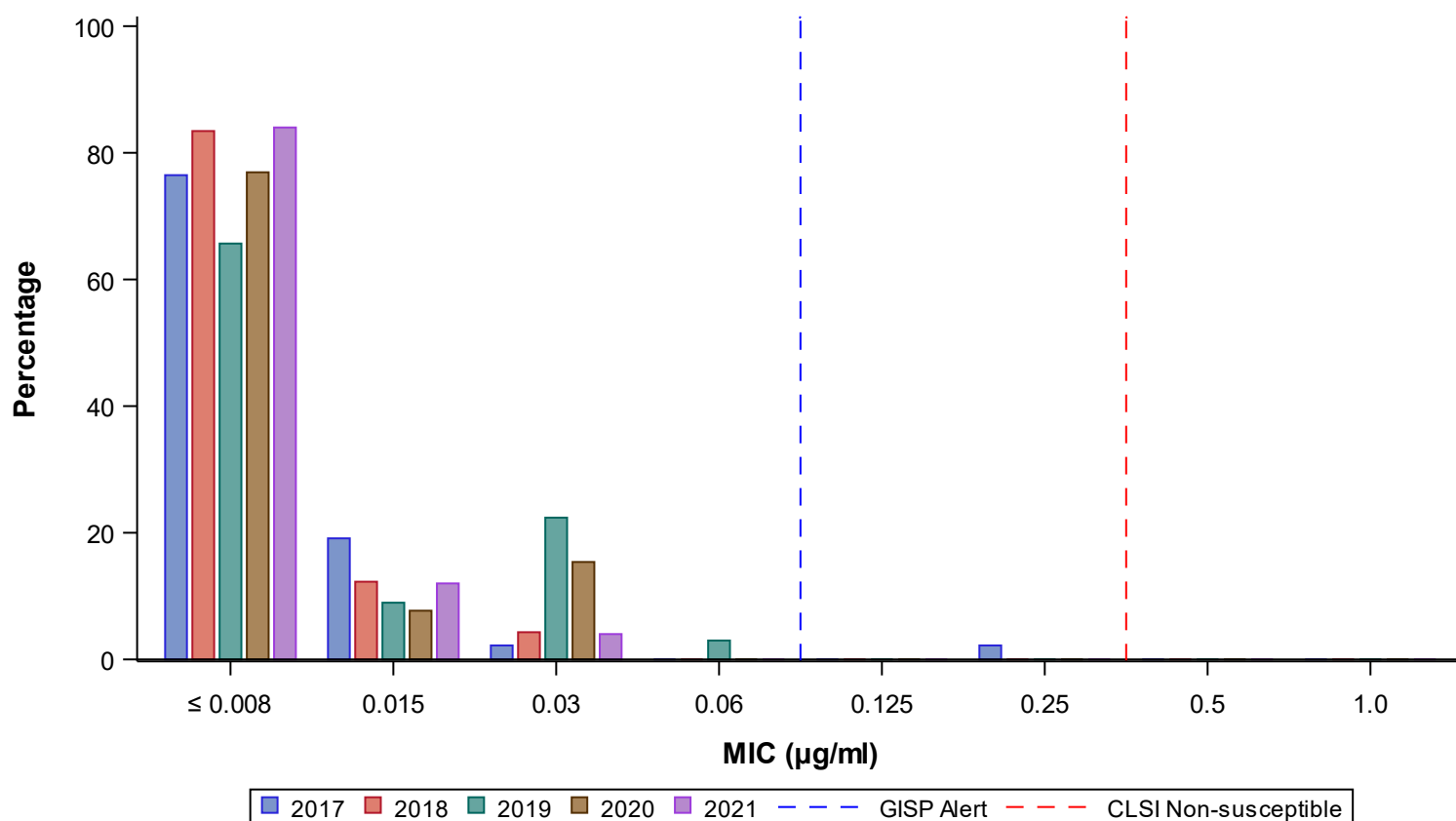
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	107 (78.7)	22 (16.2)	4 (2.9)	0 (0.0)	2 (1.5)	1 (0.7)	0 (0.0)	136
2018	140 (85.9)	19 (11.7)	4 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	163
2019	48 (71.6)	7 (10.4)	12 (17.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	67
2020	10 (76.9)	1 (7.7)	2 (15.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	13
2021	21 (84.0)	3 (12.0)	1 (4.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	25

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	104 (76.5)	26 (19.1)	3 (2.2)	0 (0.0)	0 (0.0)	3 (2.2)	0 (0.0)	0 (0.0)	136
2018	136 (83.4)	20 (12.3)	7 (4.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	163
2019	44 (65.7)	6 (9.0)	15 (22.4)	2 (3.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	67
2020	10 (76.9)	1 (7.7)	2 (15.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	13
2021	21 (84.0)	3 (12.0)	1 (4.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	25

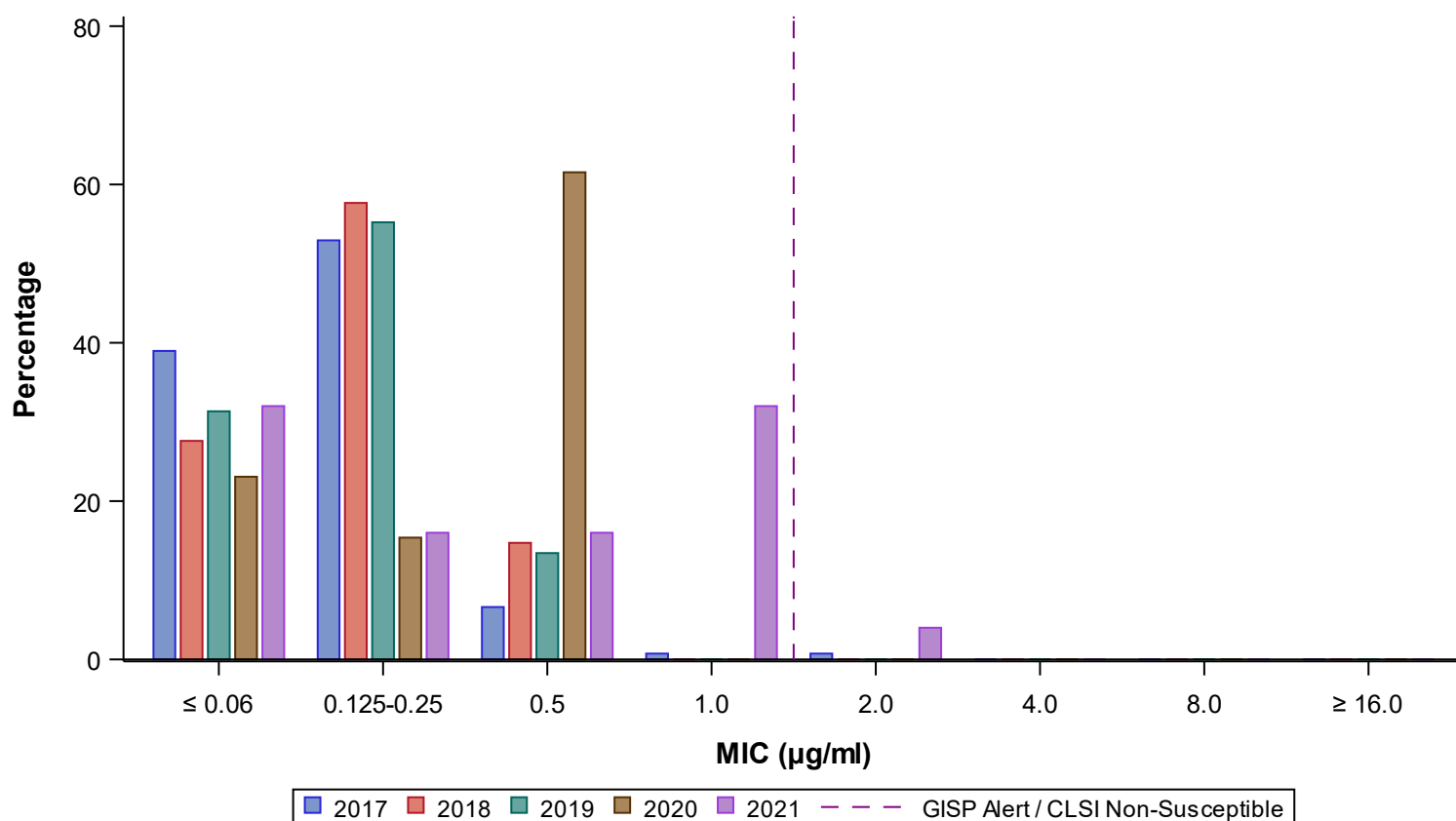
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	53 (39.0)	72 (52.9)	9 (6.6)	1 (0.7)	1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	136
2018	45 (27.6)	94 (57.7)	24 (14.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	163
2019	21 (31.3)	37 (55.2)	9 (13.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	67
2020	3 (23.1)	2 (15.4)	8 (61.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	13
2021	8 (32.0)	4 (16.0)	4 (16.0)	8 (32.0)	1 (4.0)	0 (0.0)	0 (0.0)	0 (0.0)	25

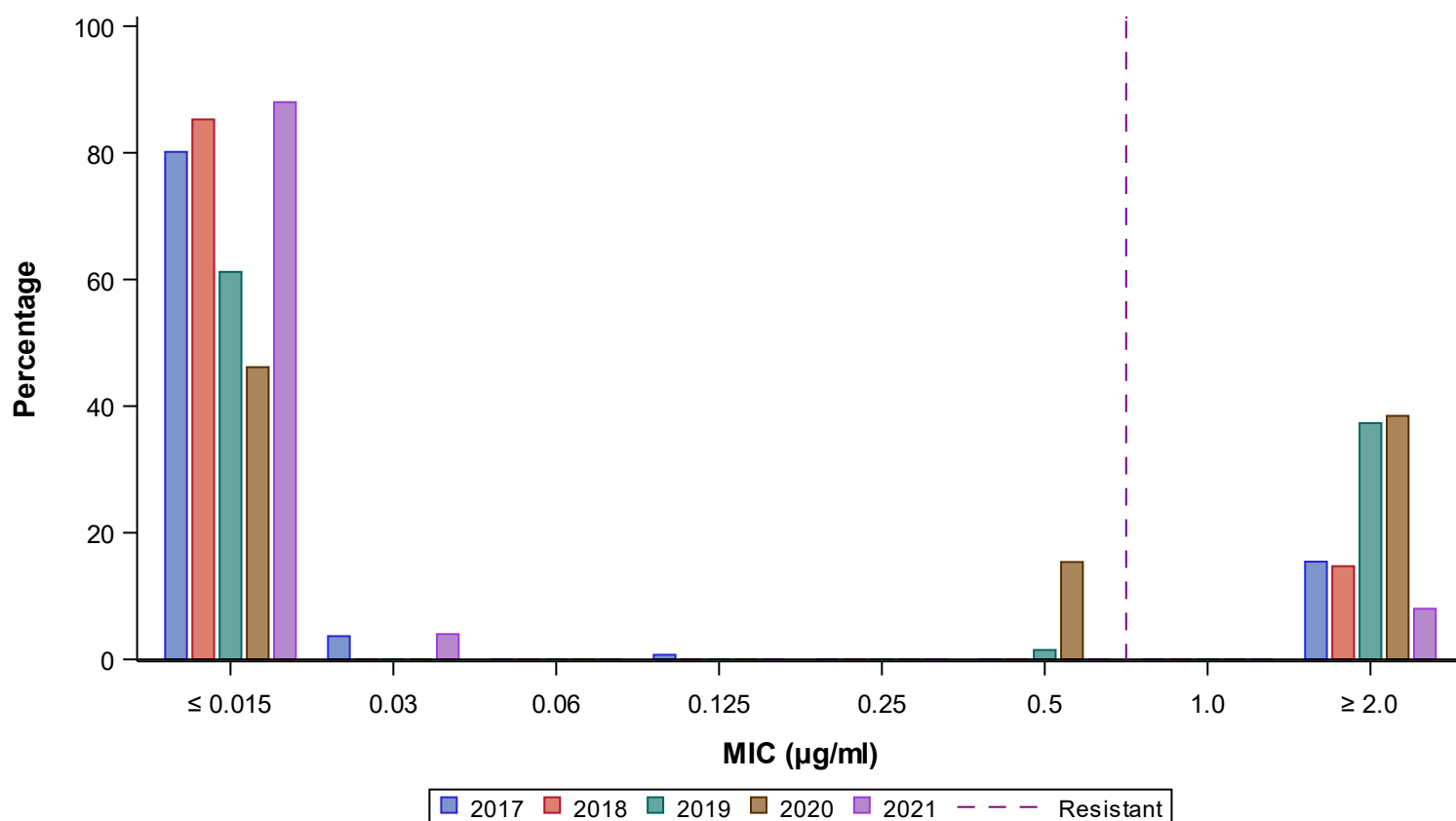
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

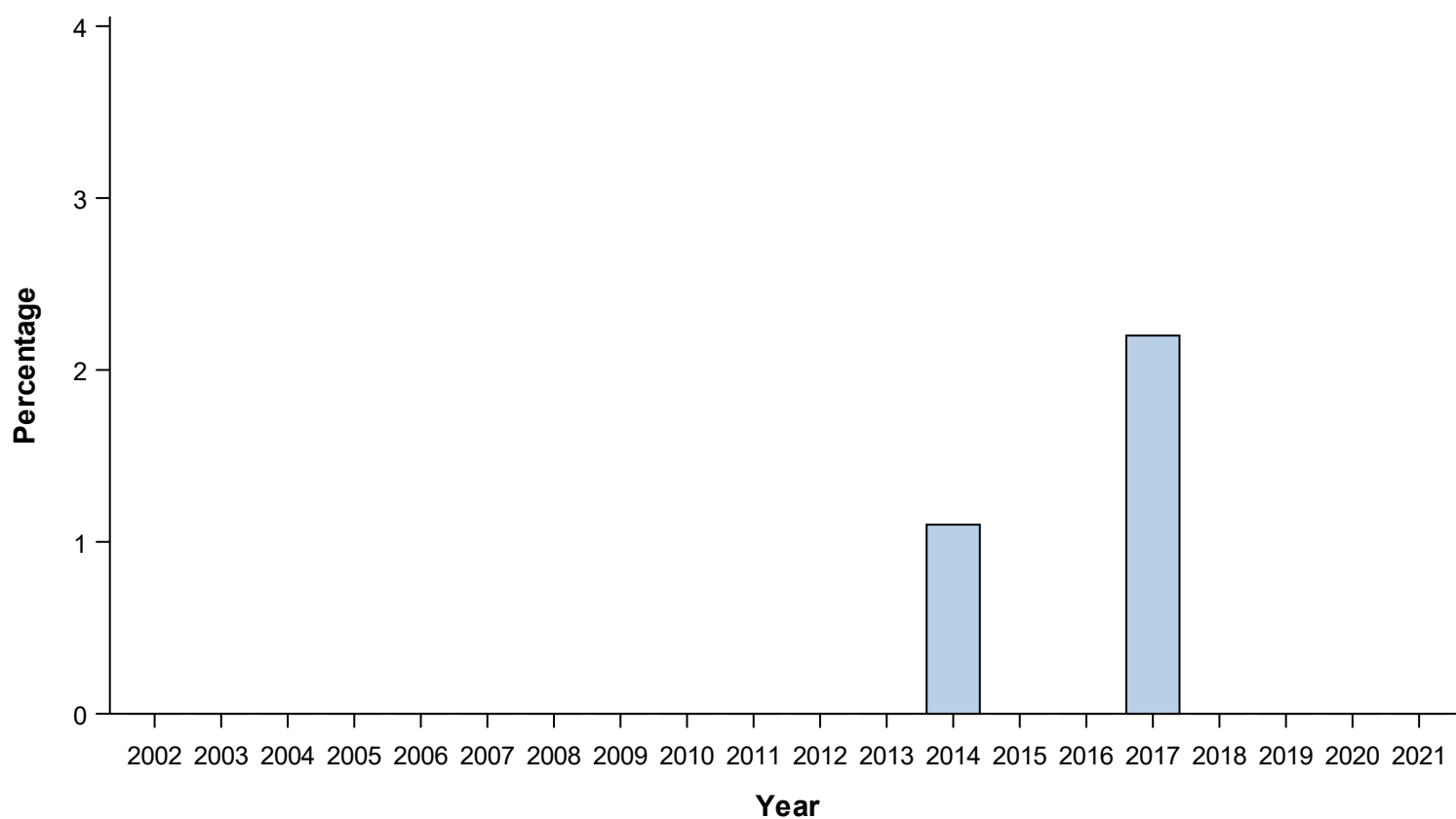
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	109 (80.1)	5 (3.7)	0 (0.0)	1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	21 (15.4)	136
2018	139 (85.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	24 (14.7)	163
2019	41 (61.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.5)	0 (0.0)	25 (37.3)	67
2020	6 (46.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (15.4)	0 (0.0)	5 (38.5)	13
2021	22 (88.0)	1 (4.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (8.0)	25

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2002-2021



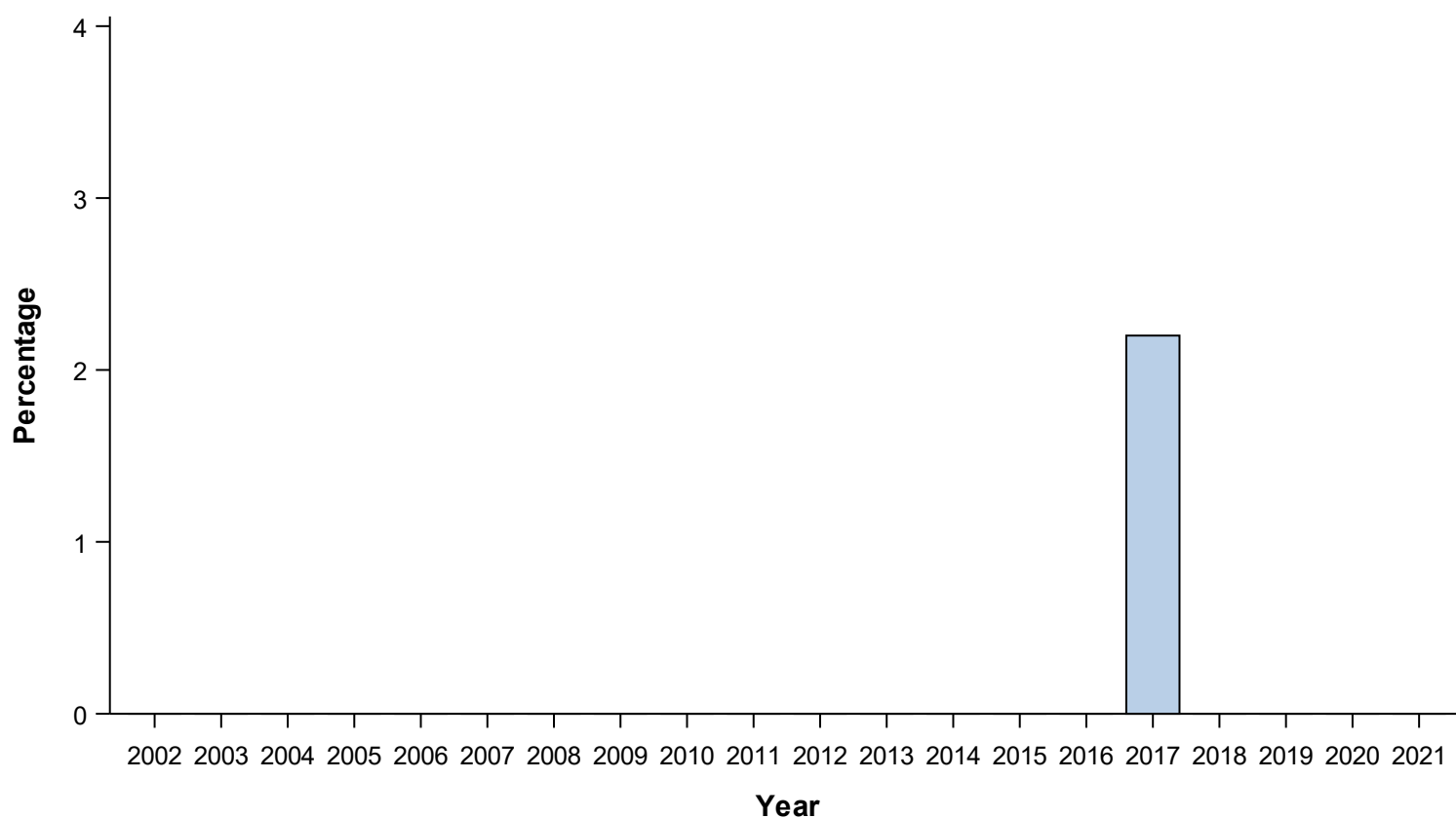
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	1 (1.1)	0 (0.0)	0 (0.0)	3 (2.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2014-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2002-2021



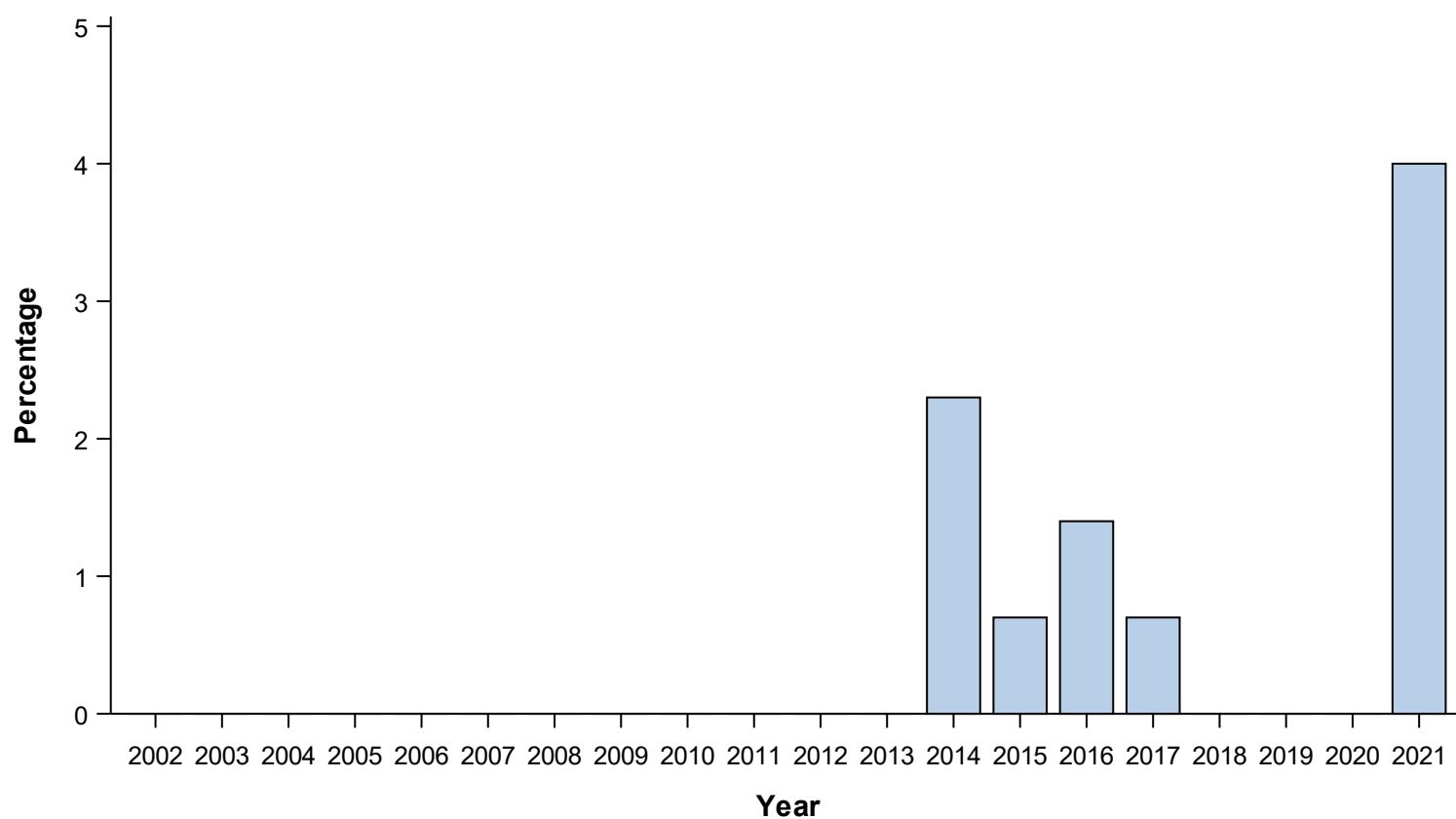
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (2.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2014-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Buffalo, New York, 2002-2021



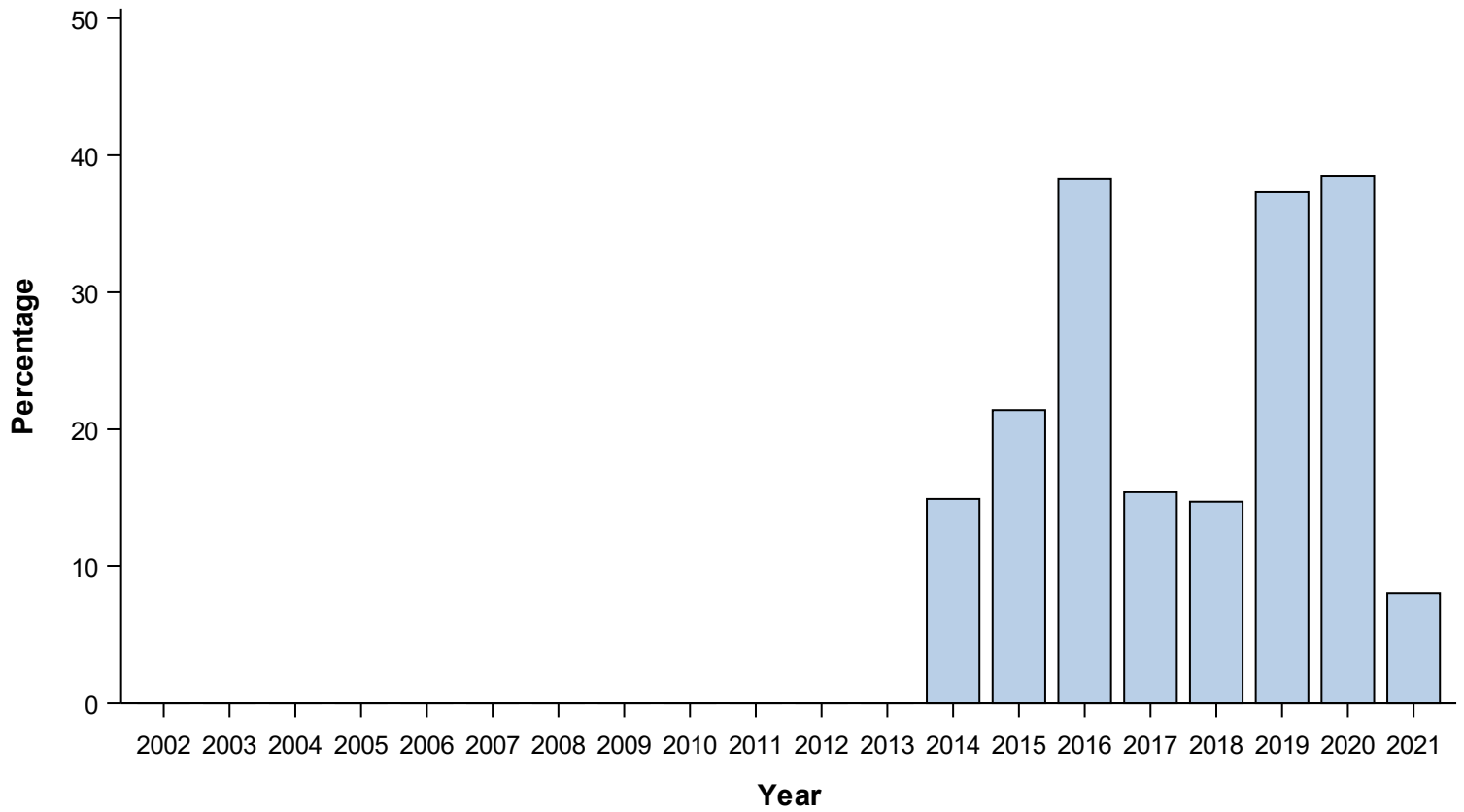
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	2 (2.3)	1 (0.7)	2 (1.4)	1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (4.0)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2014-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Buffalo, New York, 2002-2021



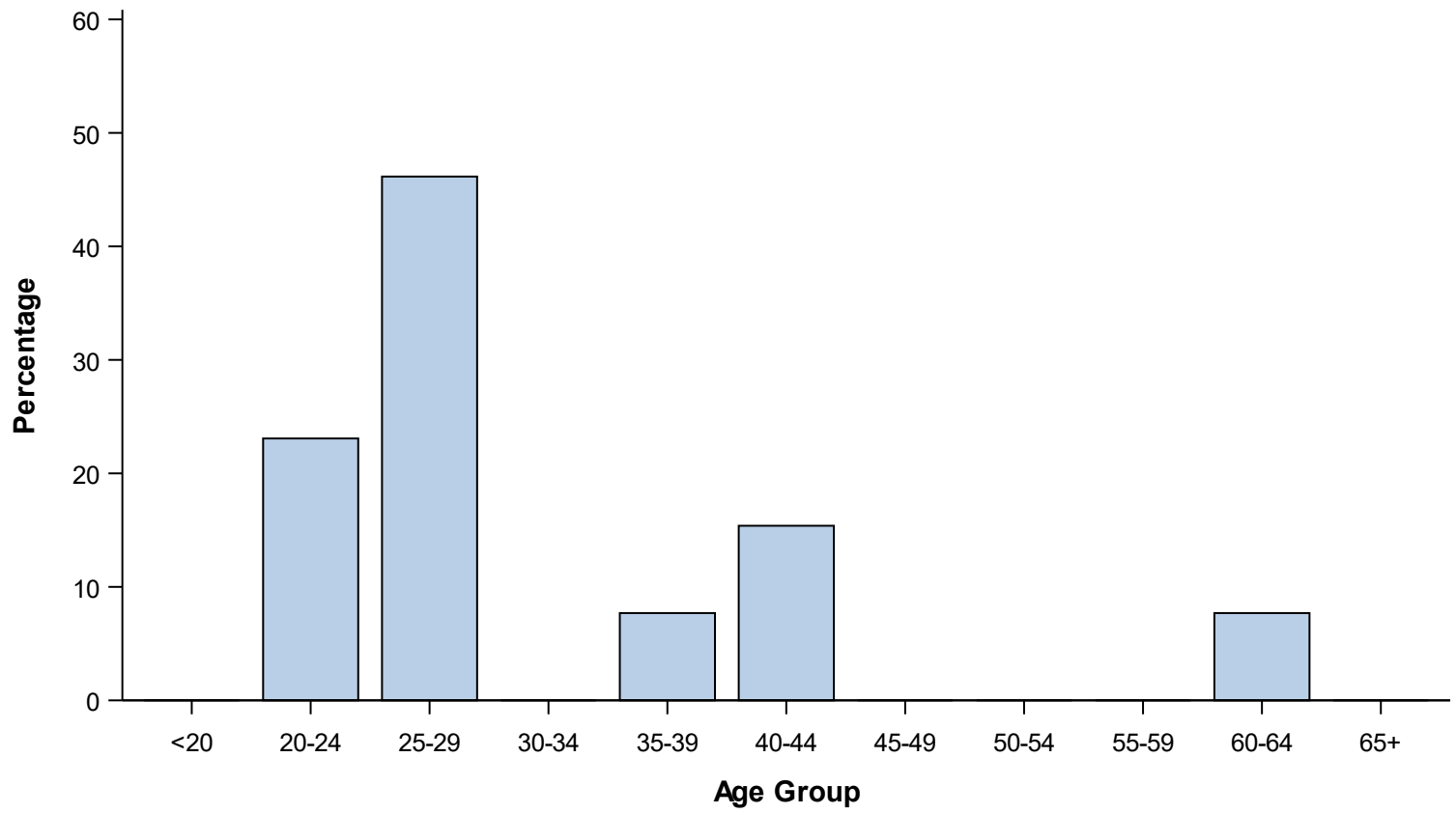
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	13 (14.9)	30 (21.4)	54 (38.3)	21 (15.4)	24 (14.7)	25 (37.3)	5 (38.5)	2 (8.0)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2014-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

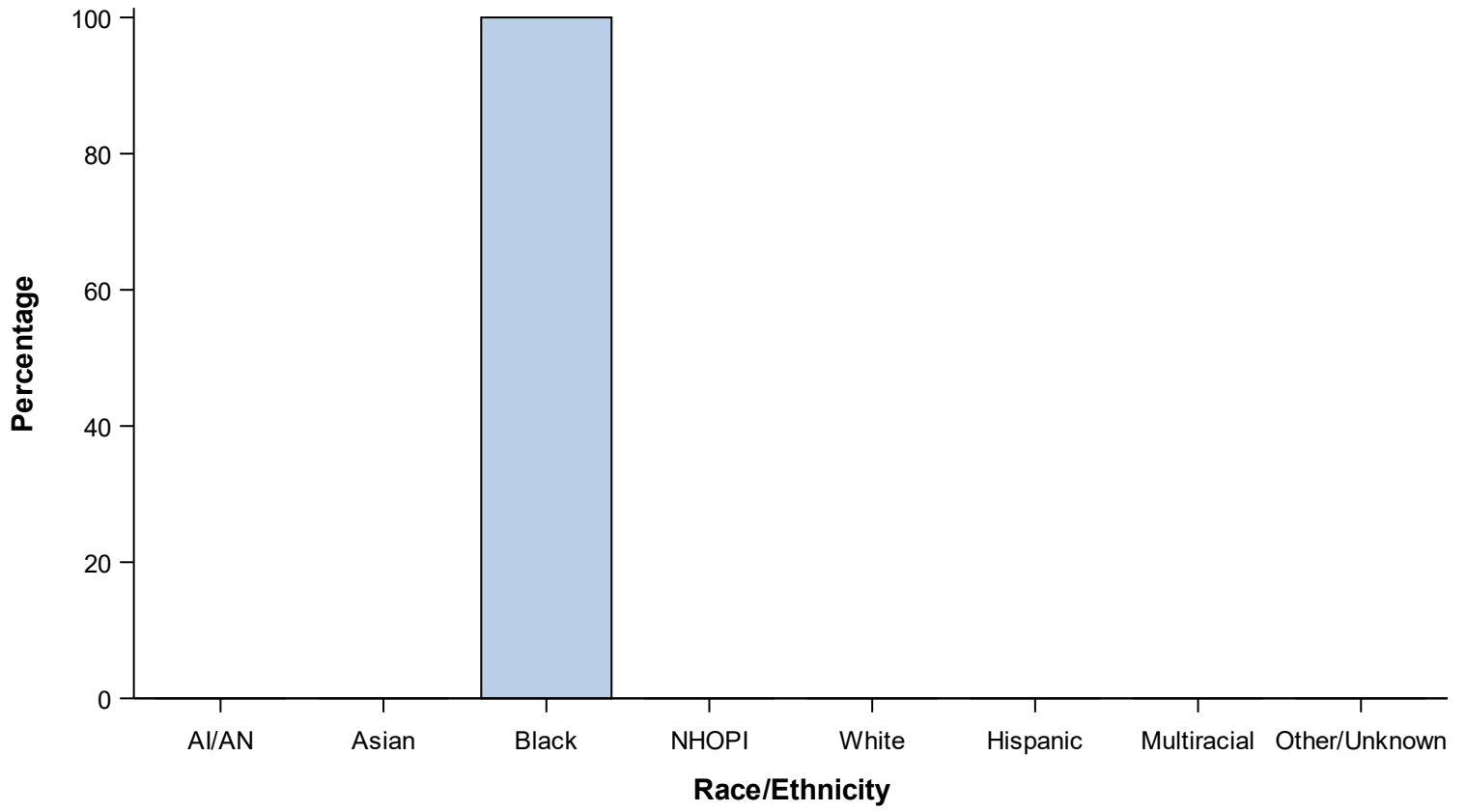
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
0 (0.0)	3 (23.1)	6 (46.2)	0 (0.0)	1 (7.7)	2 (15.4)	0 (0.0)	0 (0.0)	0 (0.0)	1 (7.7)	0 (0.0)	13

Note: Cases with unknown age were excluded.

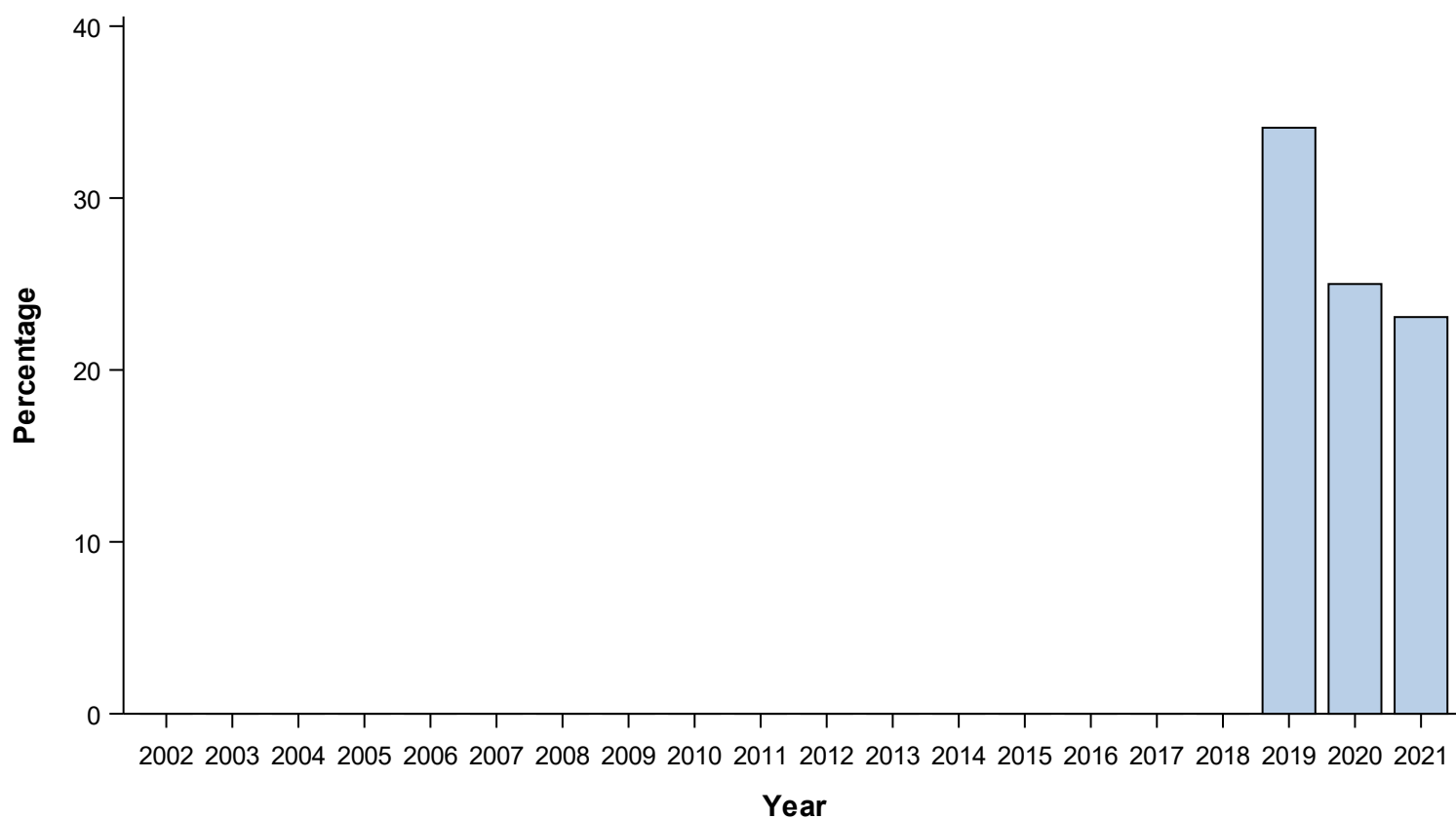
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	13 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	13

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Camden, New Jersey, 2002-2021

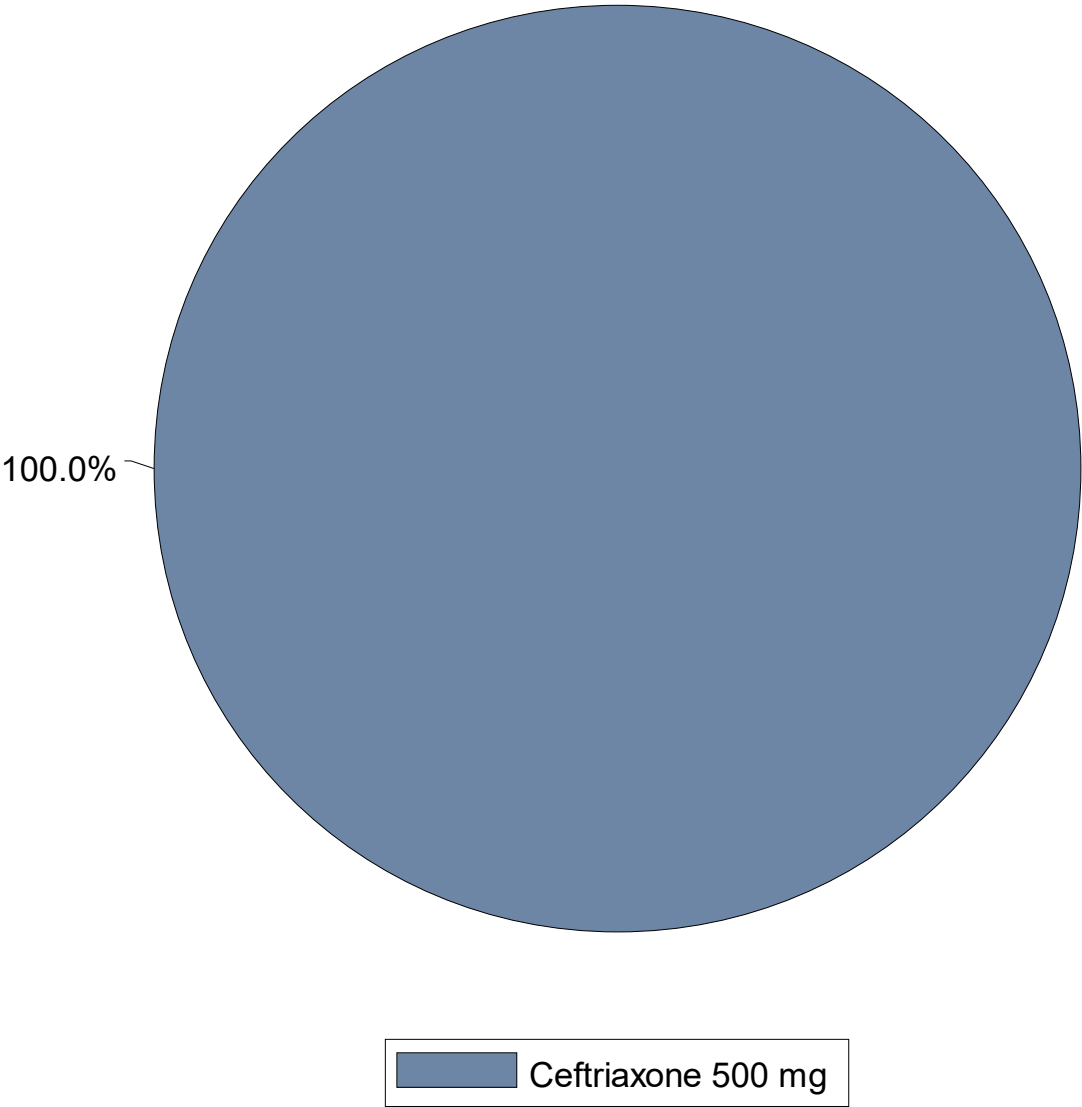


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	15 (34.1)	13 (25.0)	3 (23.1)

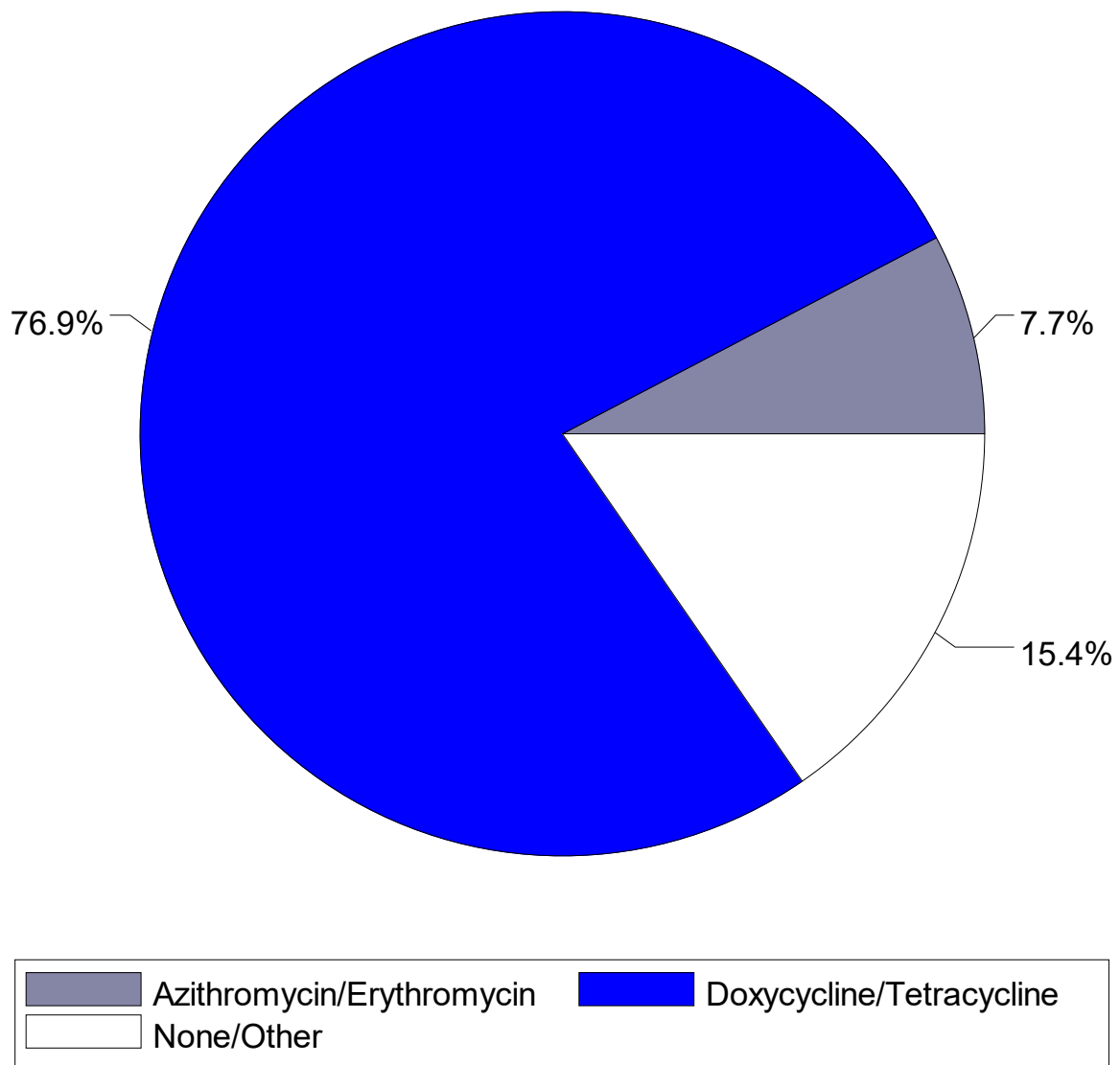
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.
Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2021



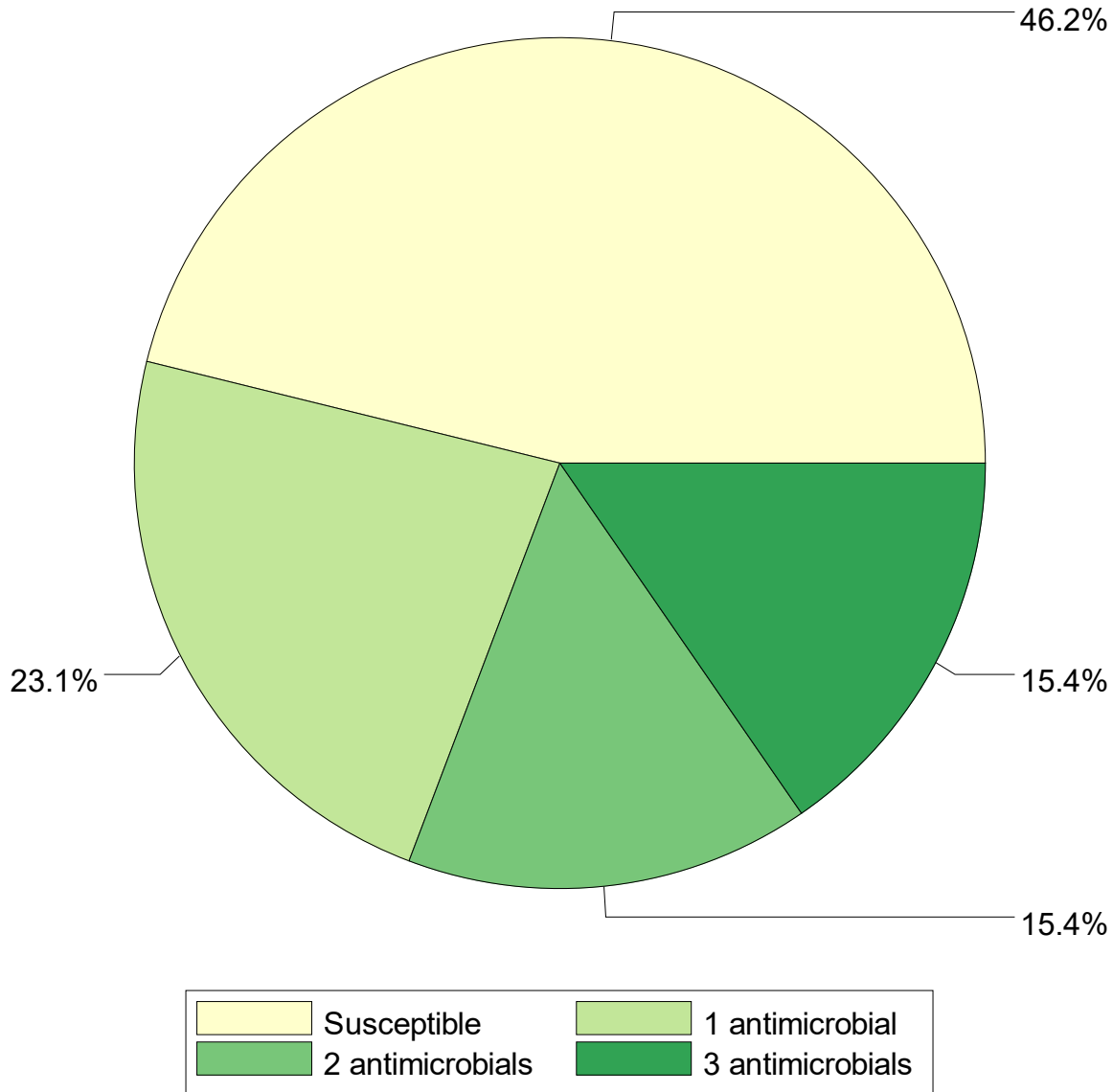
Primary Treatment	Count	Percentage
Ceftriaxone 500 mg	11	100.0

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Camden, New Jersey, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	1	7.7
Doxycycline/Tetracycline	10	76.9
None/Other	2	15.4

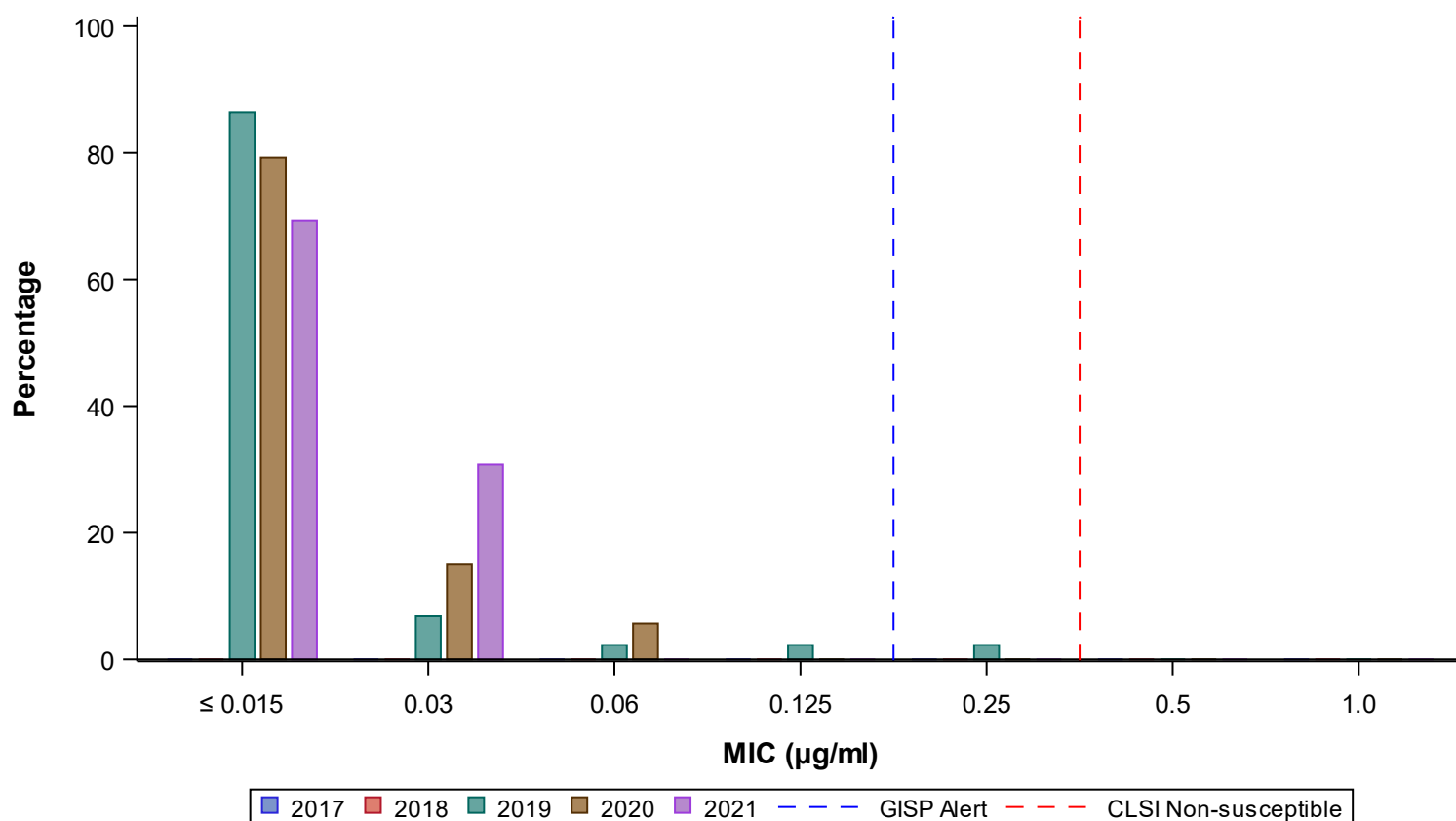
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	6	46.2
1 antimicrobial	3	23.1
2 antimicrobials	2	15.4
3 antimicrobials	2	15.4
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2019	38 (86.4)	3 (6.8)	1 (2.3)	1 (2.3)	1 (2.3)	0 (0.0)	0 (0.0)	44
2020	42 (79.2)	8 (15.1)	3 (5.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	53
2021	9 (69.2)	4 (30.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	13

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

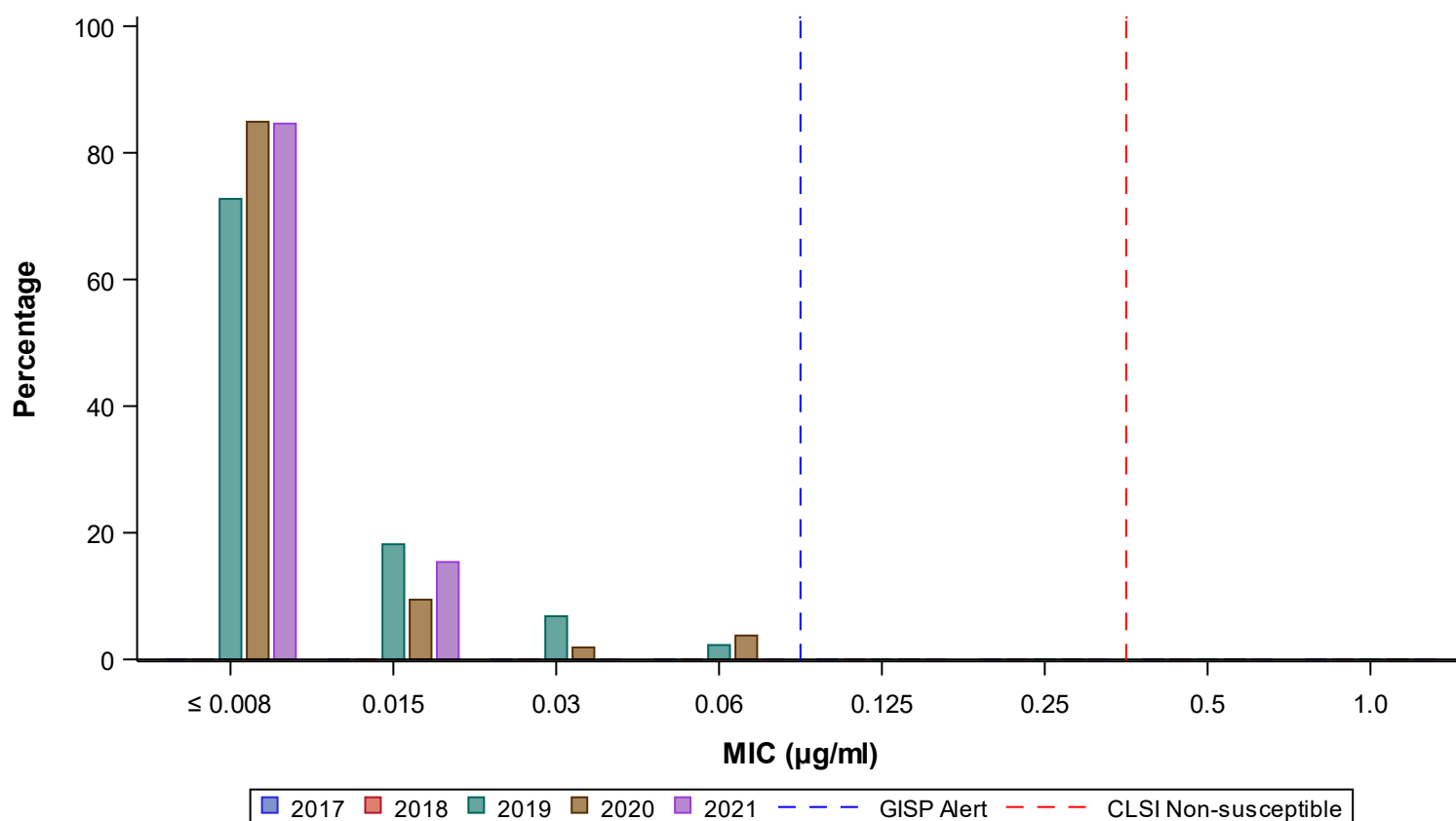
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2019	32 (72.7)	8 (18.2)	3 (6.8)	1 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	44
2020	45 (84.9)	5 (9.4)	1 (1.9)	2 (3.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	53
2021	11 (84.6)	2 (15.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	13

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

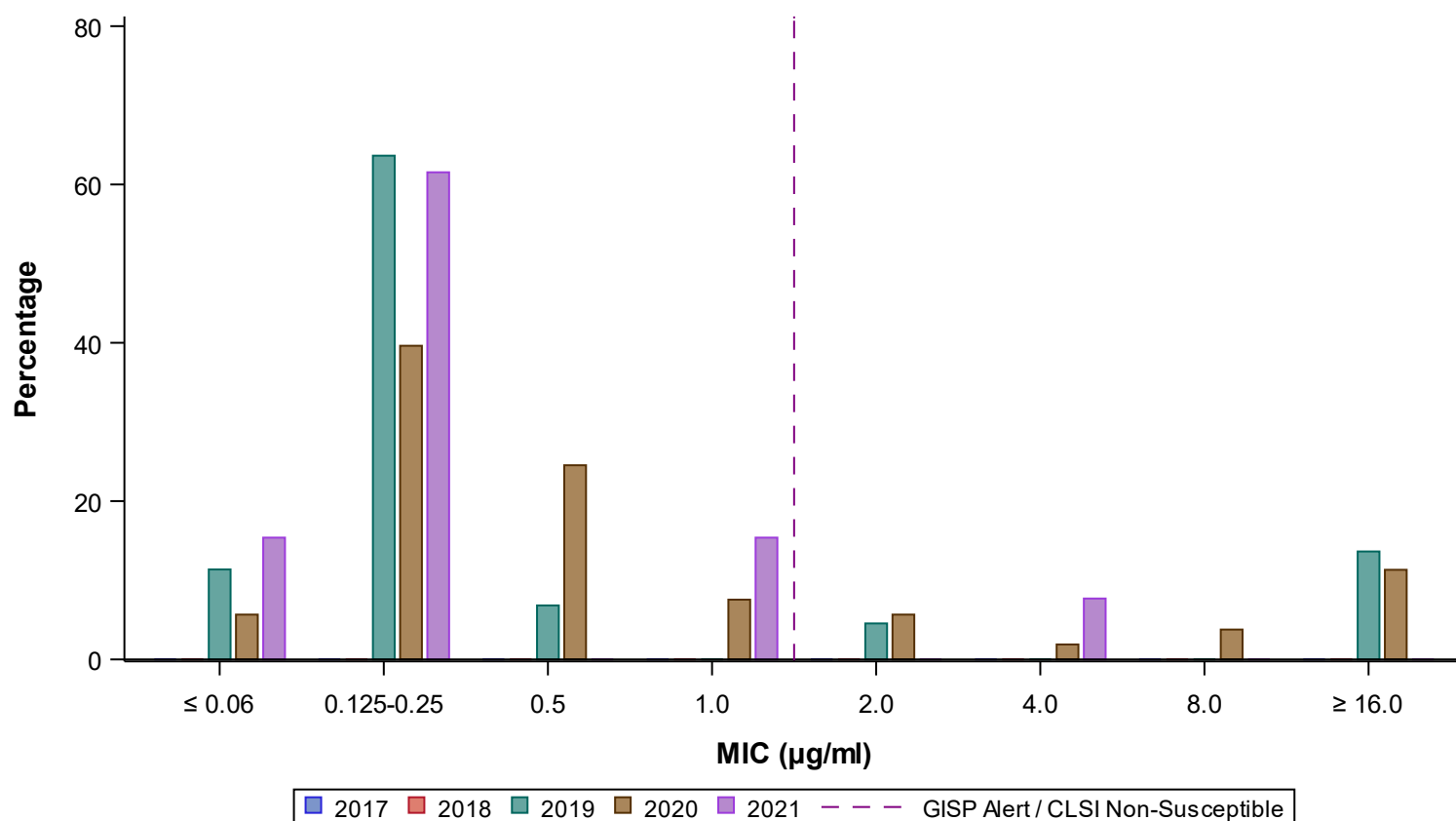
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2019	5 (11.4)	28 (63.6)	3 (6.8)	0 (0.0)	2 (4.5)	0 (0.0)	0 (0.0)	6 (13.6)	44
2020	3 (5.7)	21 (39.6)	13 (24.5)	4 (7.5)	3 (5.7)	1 (1.9)	2 (3.8)	6 (11.3)	53
2021	2 (15.4)	8 (61.5)	0 (0.0)	2 (15.4)	0 (0.0)	1 (7.7)	0 (0.0)	0 (0.0)	13

GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

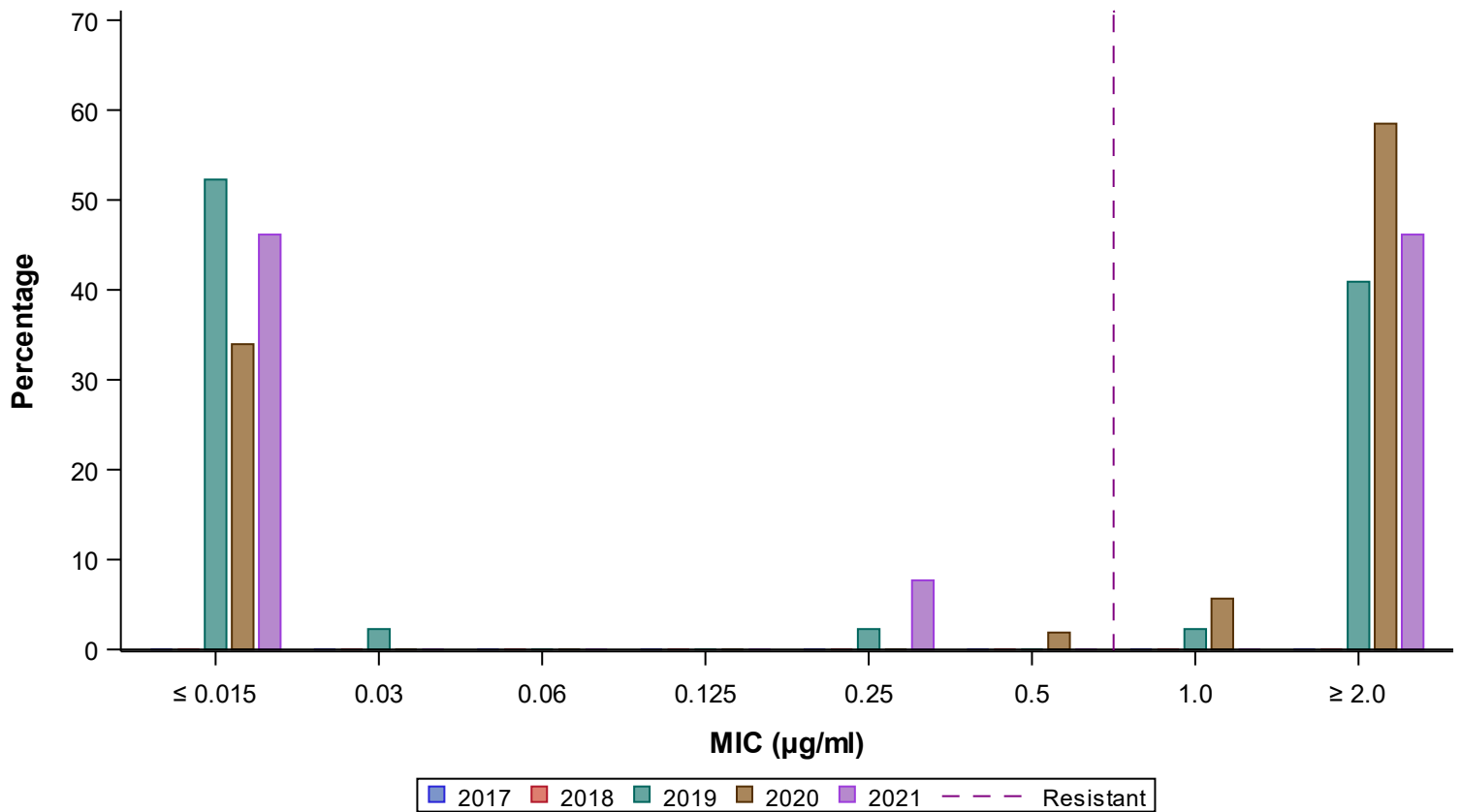
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2017-2021

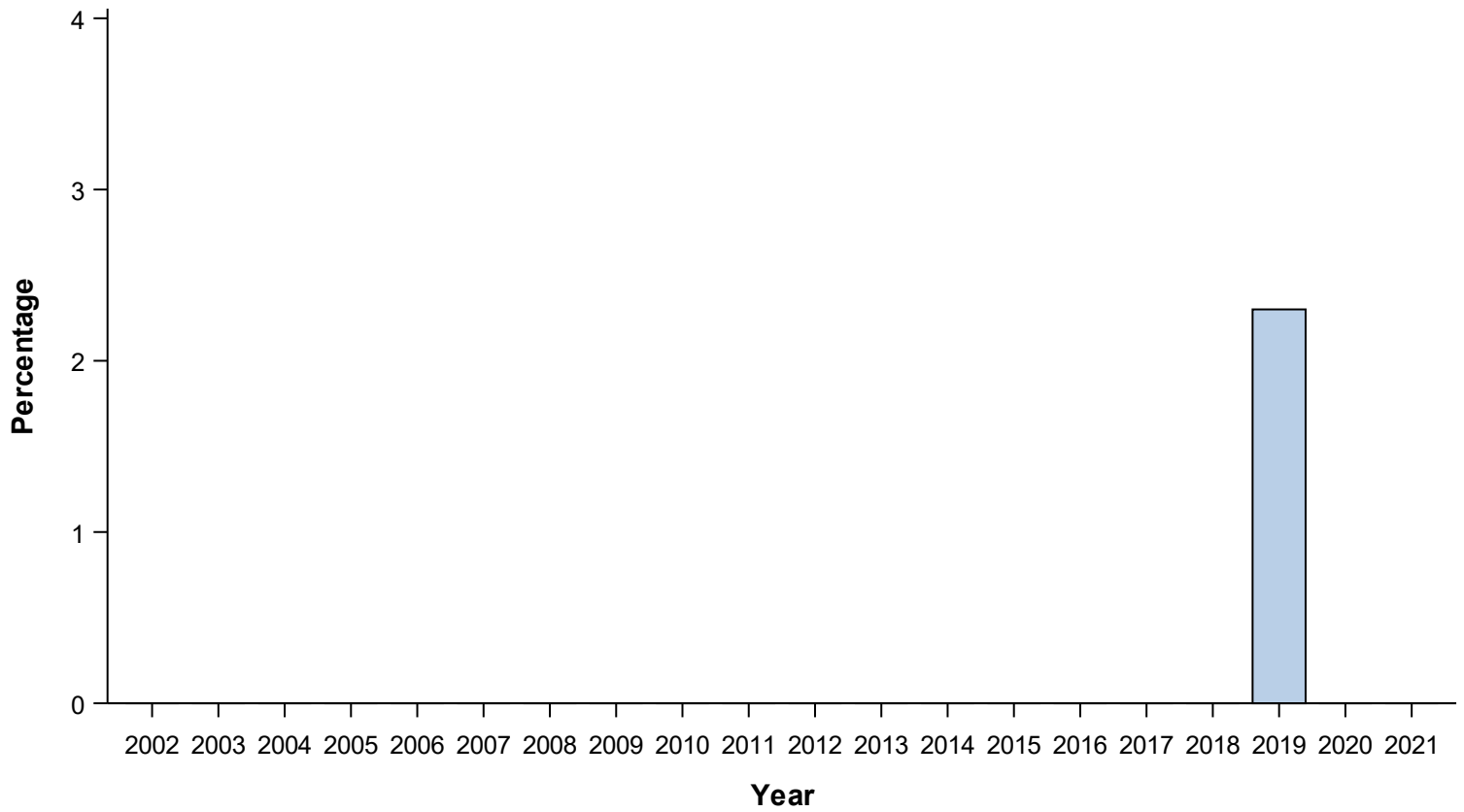


Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2019	23 (52.3)	1 (2.3)	0 (0.0)	0 (0.0)	1 (2.3)	0 (0.0)	1 (2.3)	18 (40.9)	44
2020	18 (34.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.9)	3 (5.7)	31 (58.5)	53
2021	6 (46.2)	0 (0.0)	0 (0.0)	0 (0.0)	1 (7.7)	0 (0.0)	0 (0.0)	6 (46.2)	13

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Note: Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2002-2021



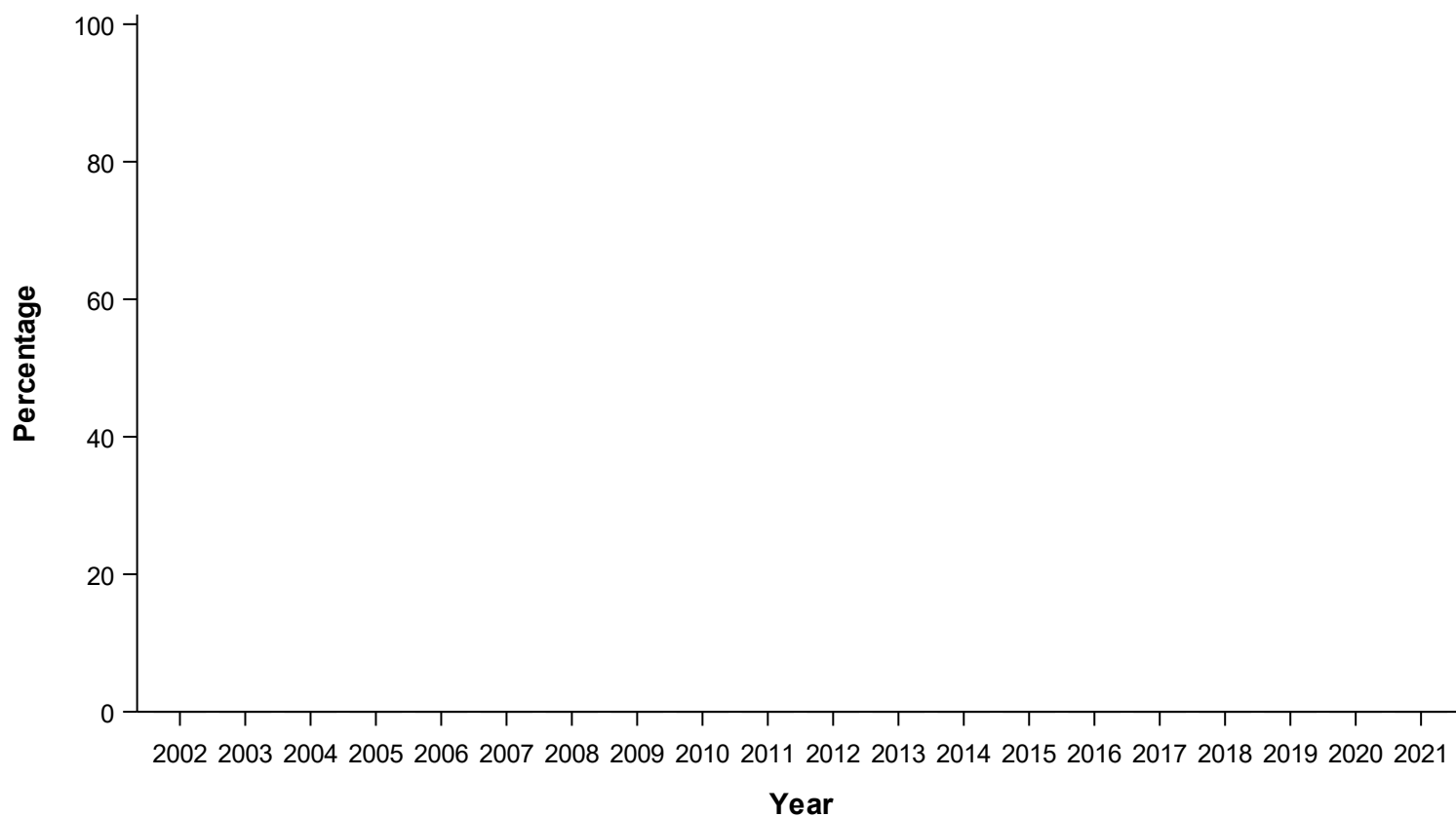
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.3)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2002-2021



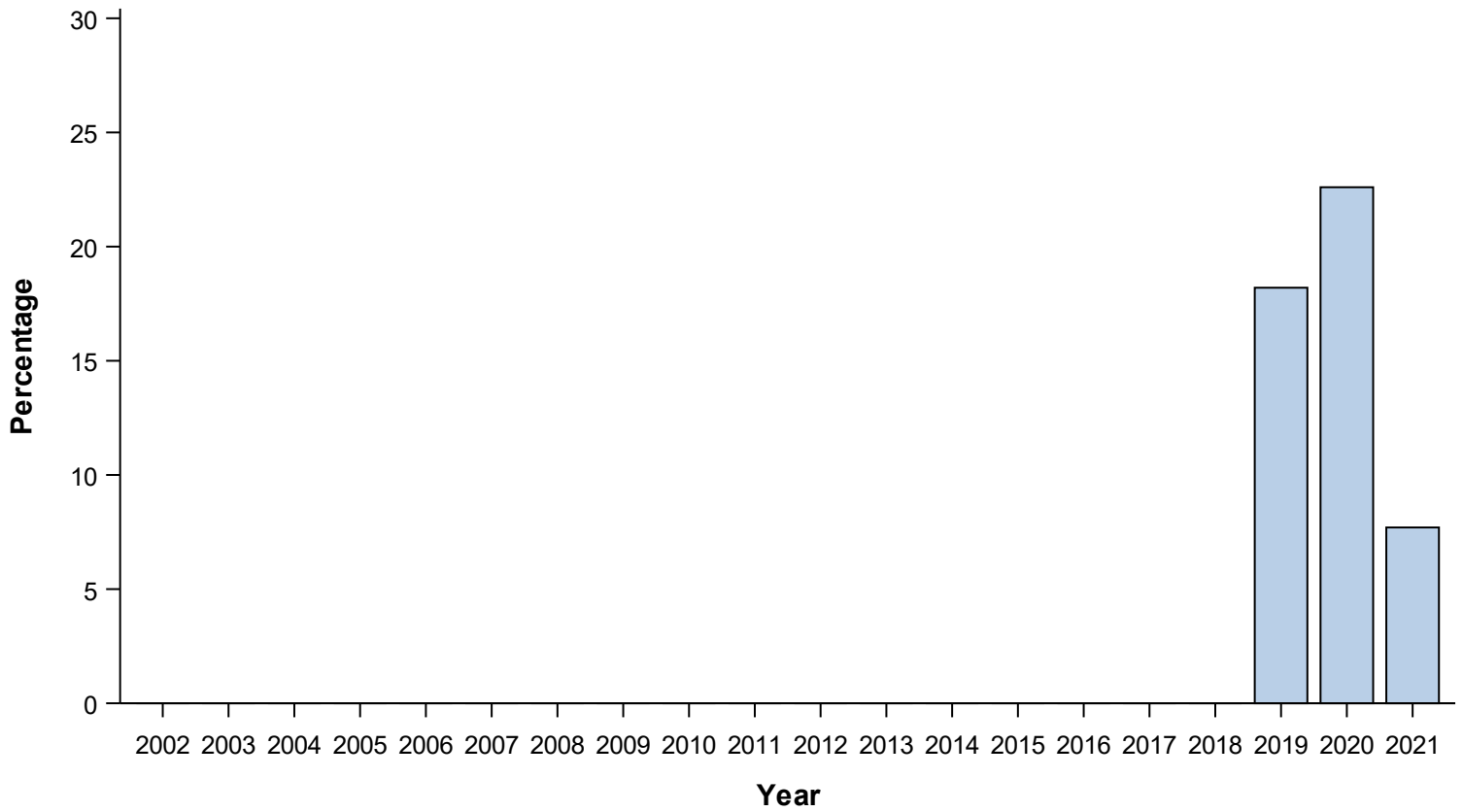
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Camden, New Jersey, 2002-2021



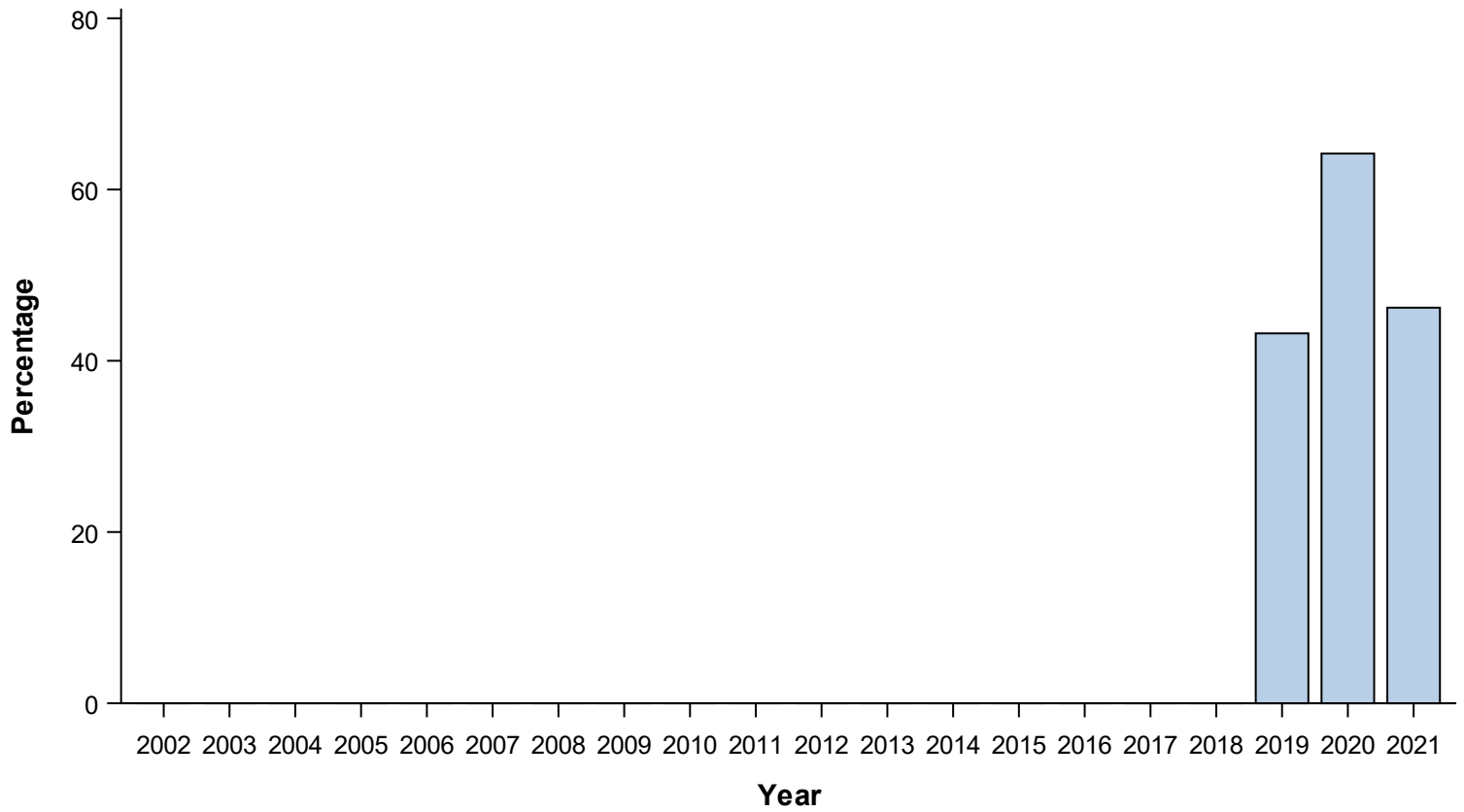
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	8 (18.2)	12 (22.6)	1 (7.7)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Camden, New Jersey, 2002-2021



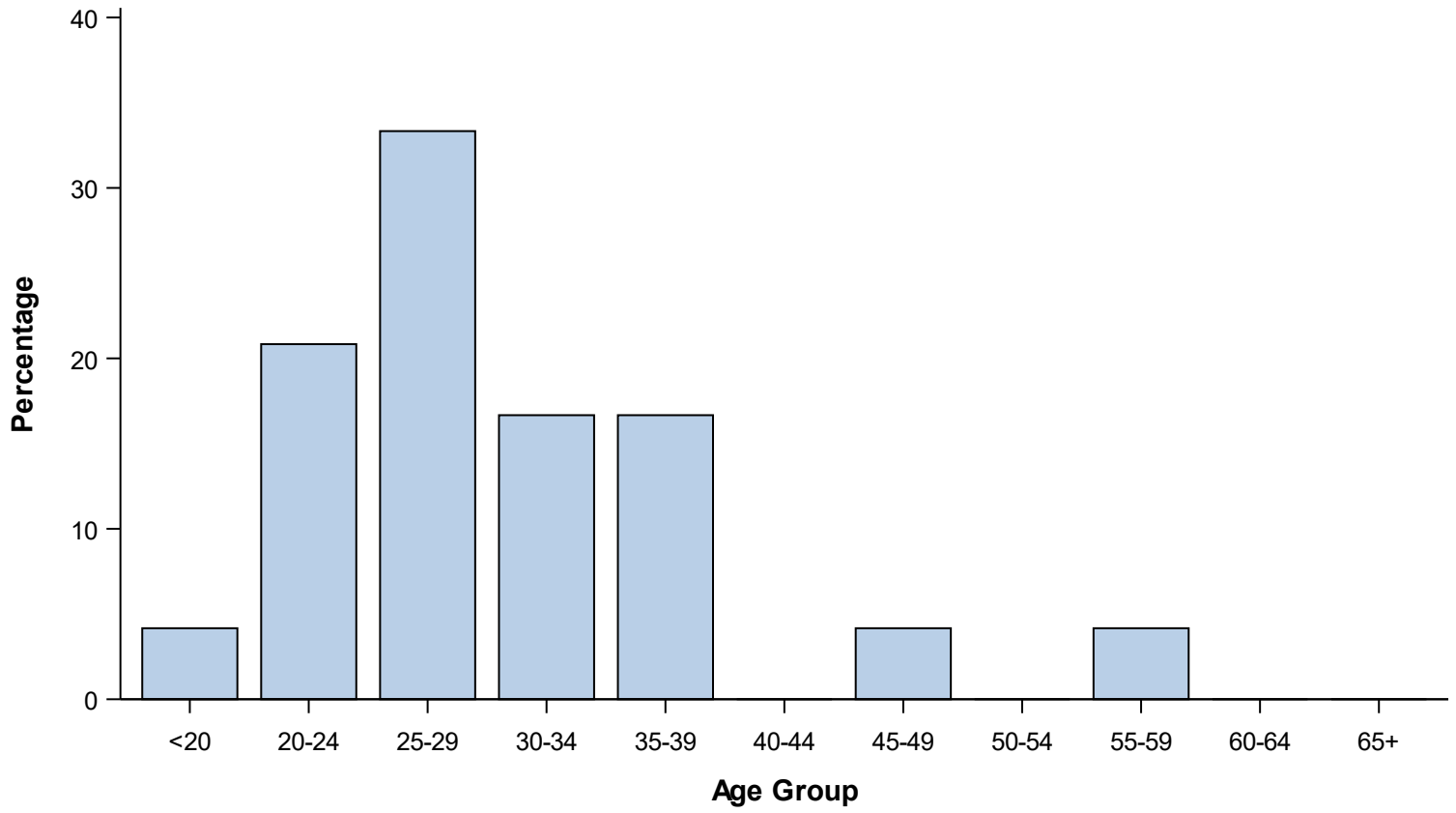
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	19 (43.2)	34 (64.2)	6 (46.2)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2019-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

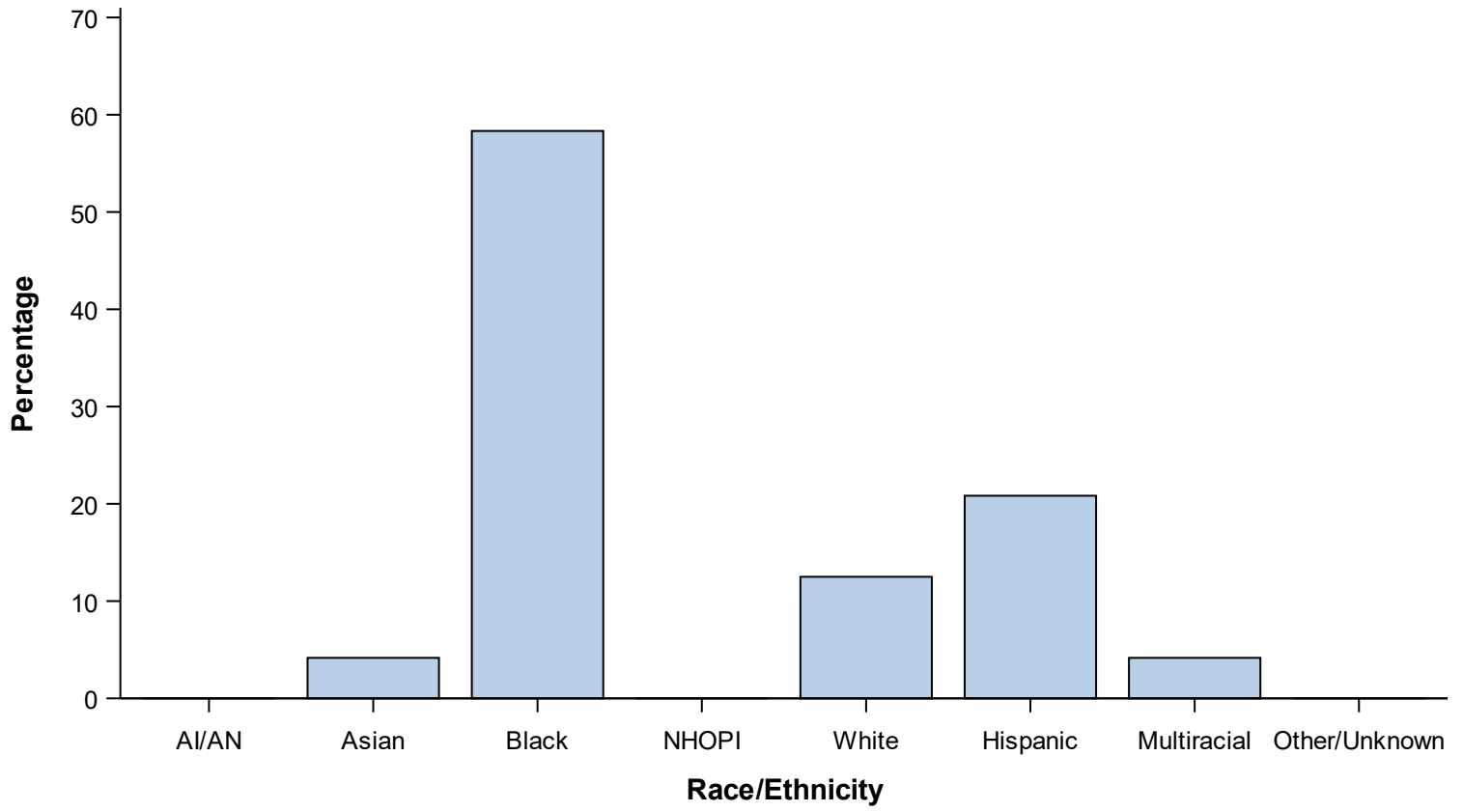
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
1 (4.2)	5 (20.8)	8 (33.3)	4 (16.7)	4 (16.7)	0 (0.0)	1 (4.2)	0 (0.0)	1 (4.2)	0 (0.0)	0 (0.0)	24

Note: Cases with unknown age were excluded.

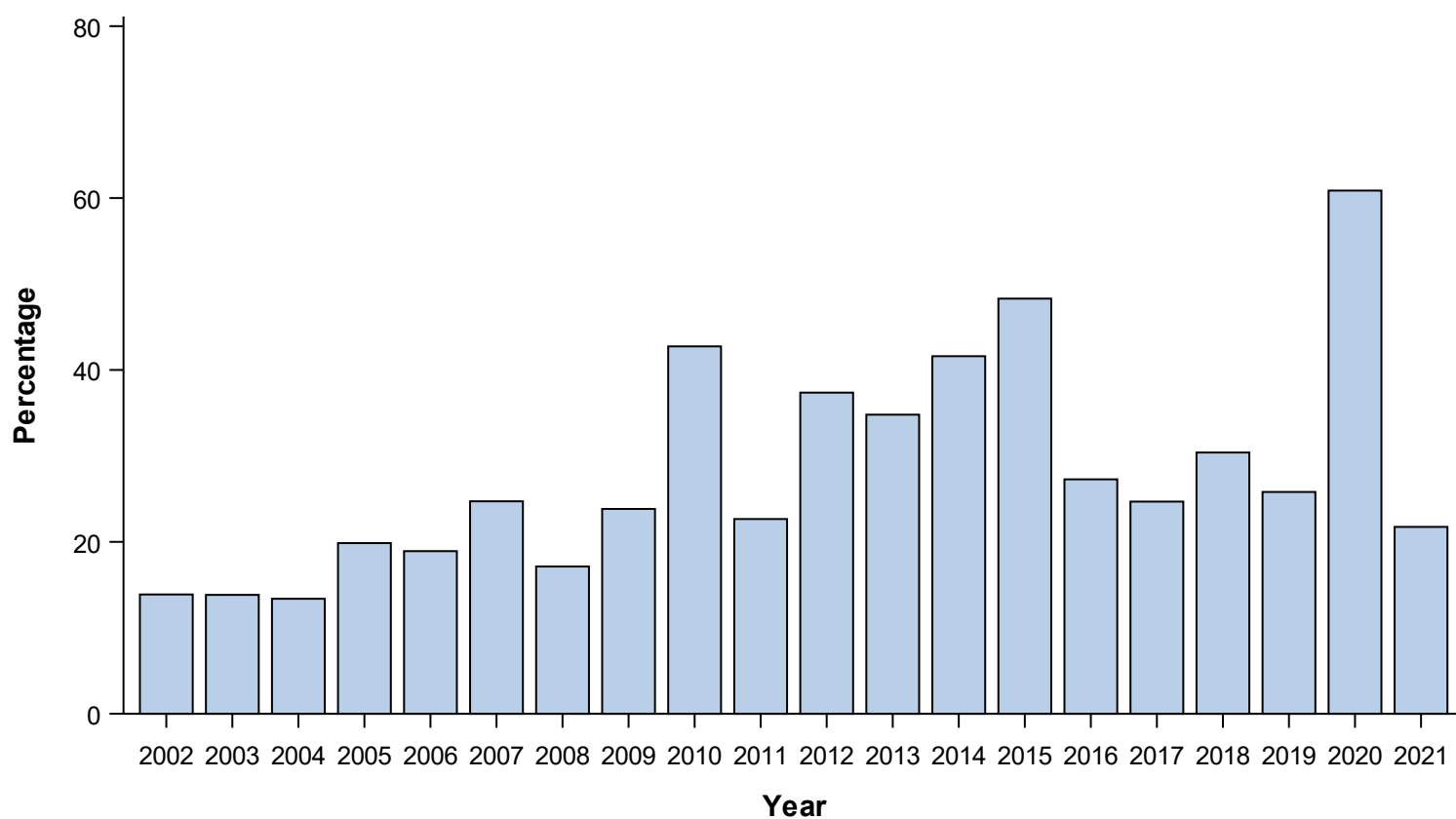
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	1 (4.2)	14 (58.3)	0 (0.0)	3 (12.5)	5 (20.8)	1 (4.2)	0 (0.0)	24

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Chicago, Illinois, 2002-2021

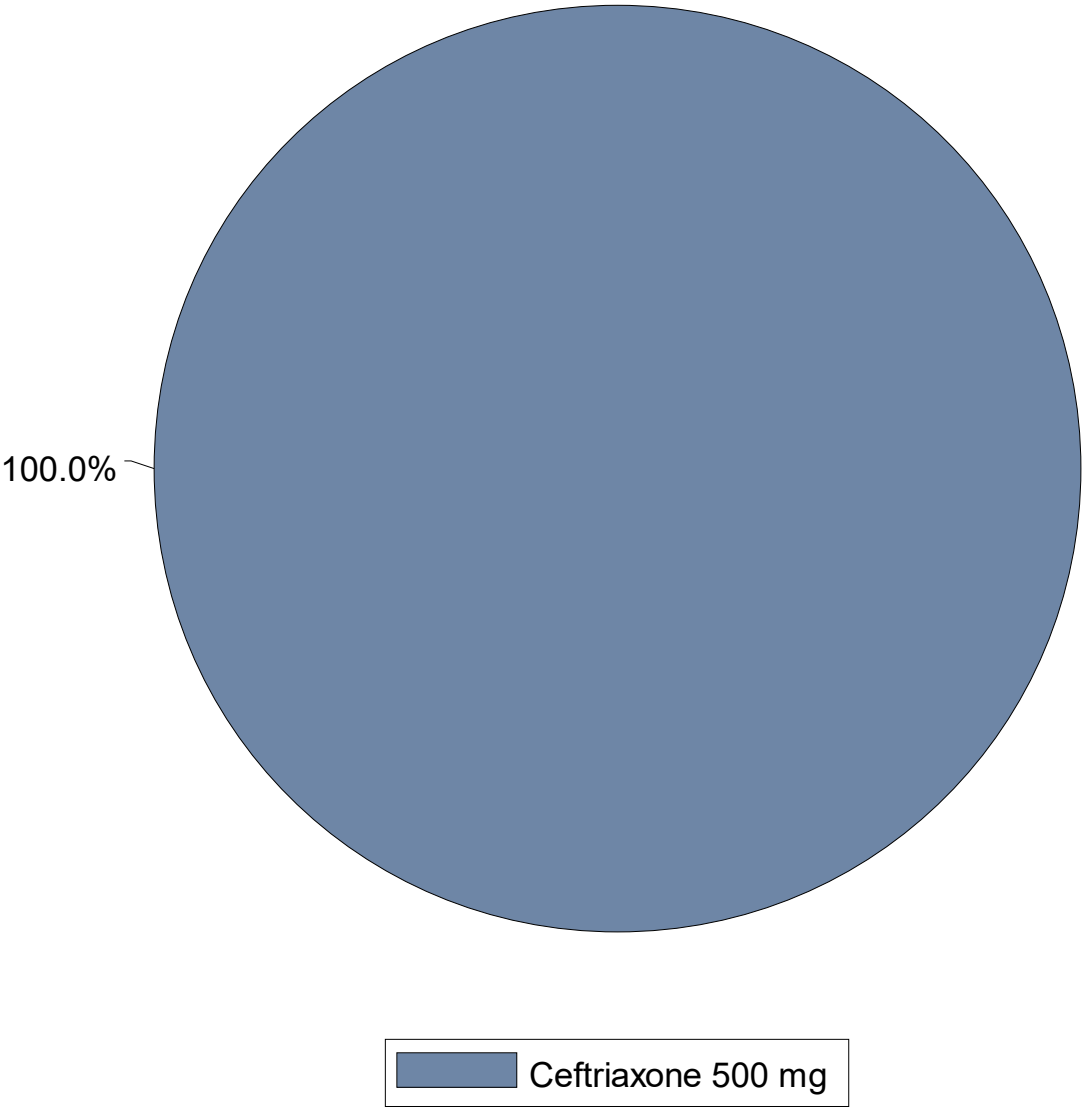


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
39 (13.9)	39 (13.8)	40 (13.4)	55 (19.9)	56 (18.9)	66 (24.7)	43 (17.1)	56 (23.8)	53 (42.7)	58 (22.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
102 (37.4)	103 (34.8)	52 (41.6)	71 (48.3)	33 (27.3)	39 (24.7)	31 (30.4)	32 (25.8)	14 (60.9)	5 (21.7)

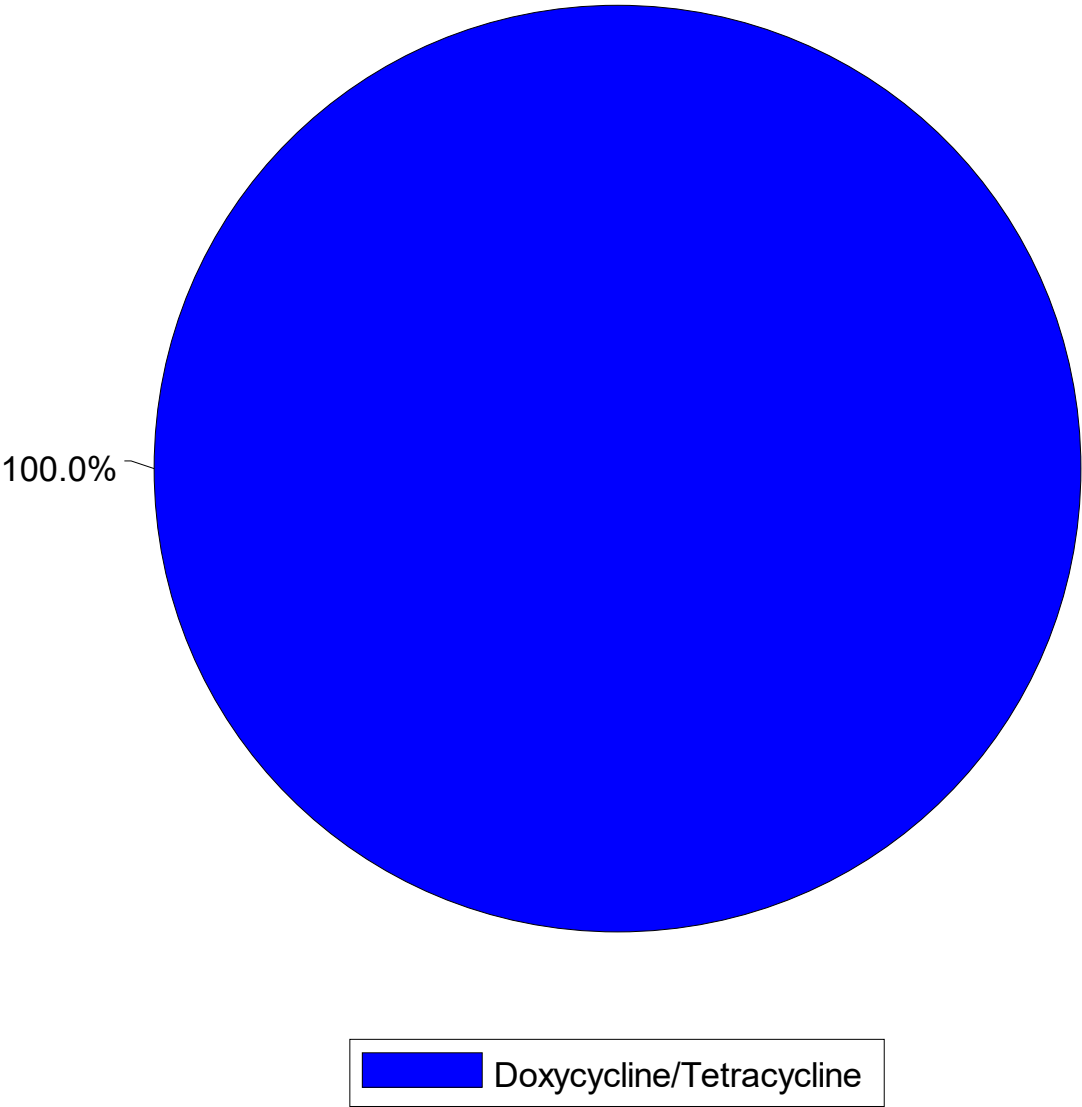
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2021



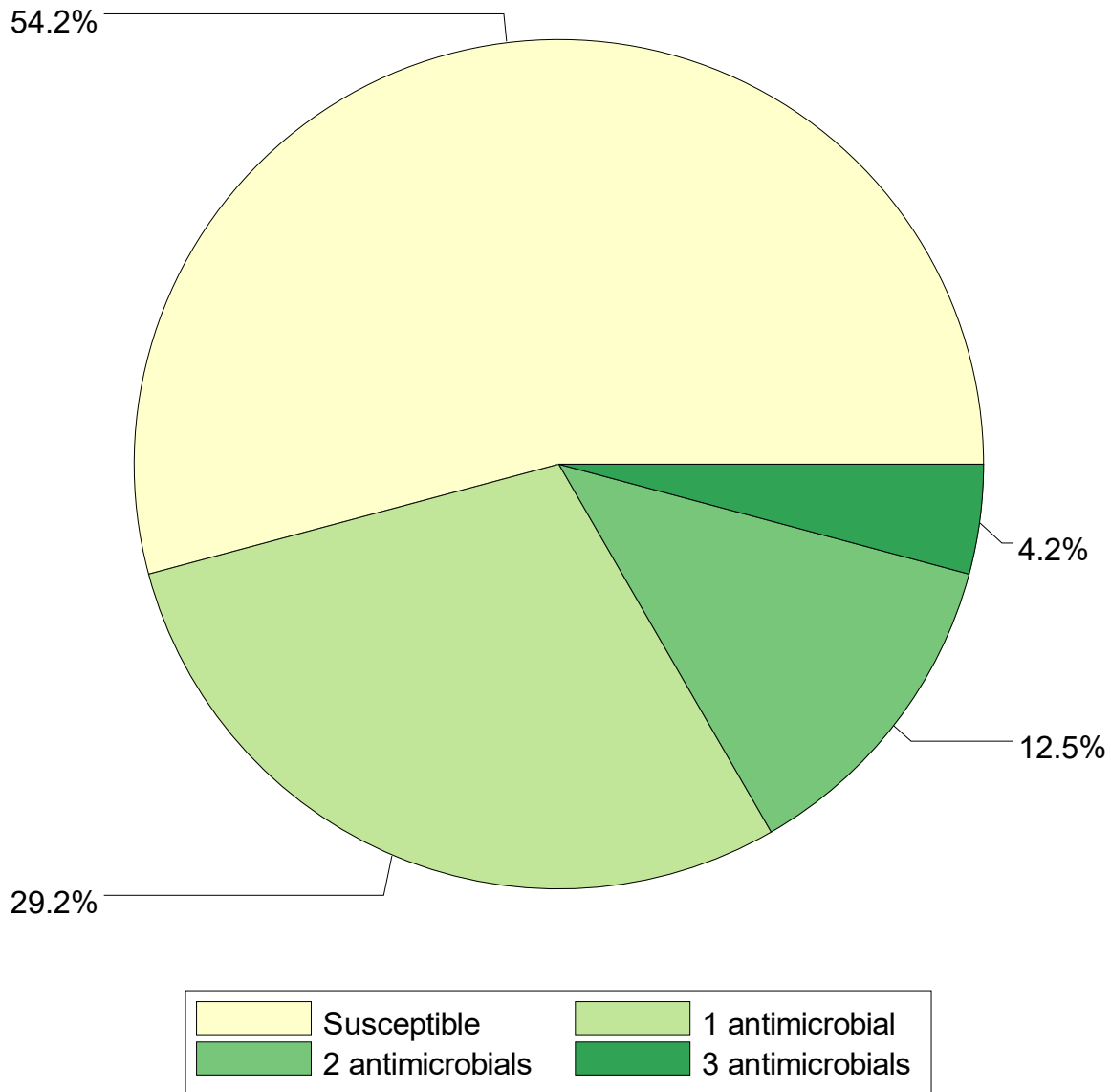
Primary Treatment	Count	Percentage
Ceftriaxone 500 mg	24	100.0

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2021



Secondary Treatment	Count	Percentage
Doxycycline/Tetracycline	24	100.0

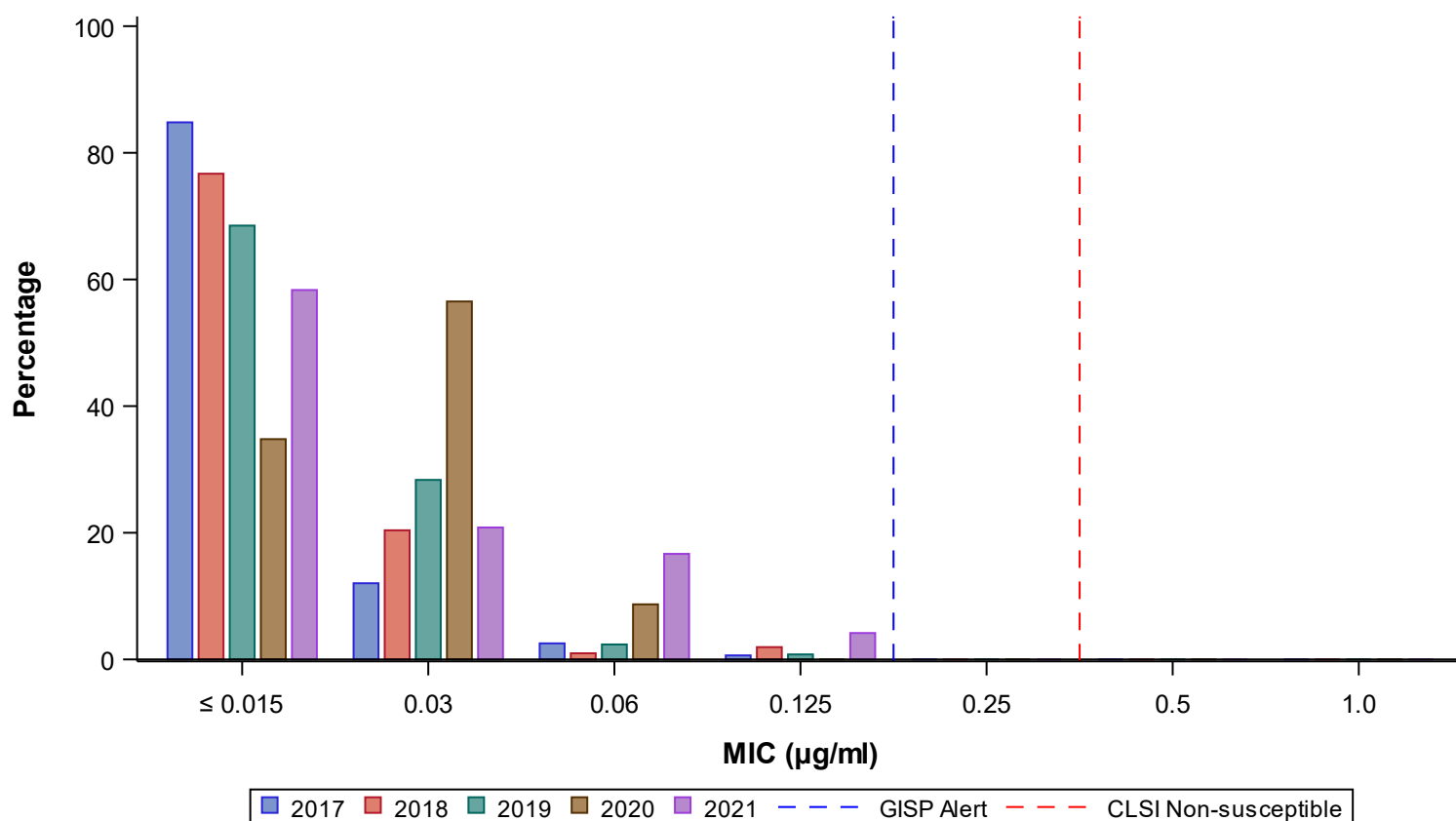
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	13	54.2
1 antimicrobial	7	29.2
2 antimicrobials	3	12.5
3 antimicrobials	1	4.2
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC $\geq$ 0.125 μ g/mL; Cefixime: MIC $\geq$ 0.25 μ g/mL; Azithromycin: MIC $\geq$ 2.0 μ g/ml; Resistance = Tetracycline: MIC $\geq$ 2.0 μ g/mL; Ciprofloxacin: MIC $\geq$ 1.0 μ g/mL; Penicillin: MIC $\geq$ 2.0 μ g/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2017-2021



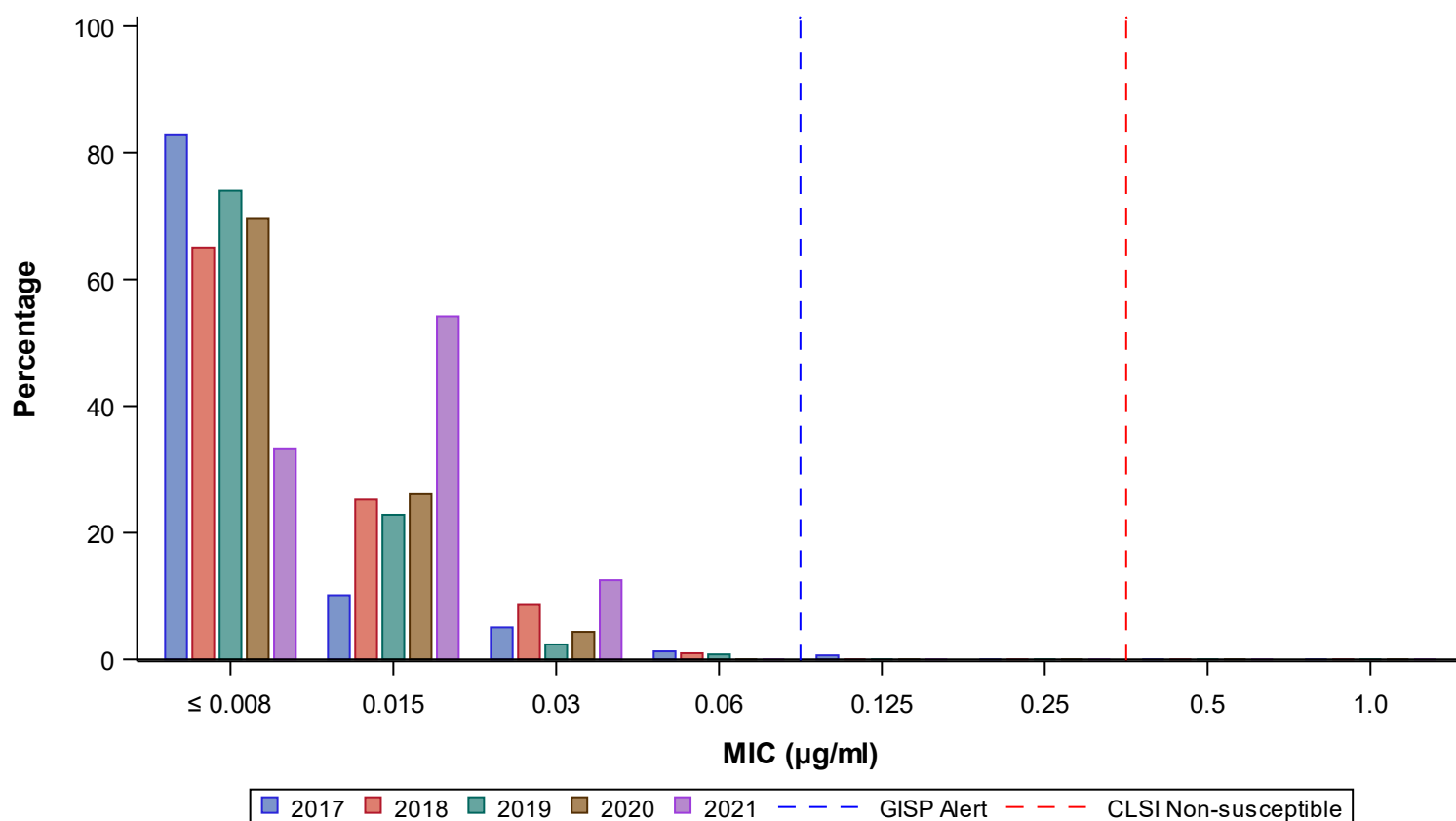
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	134 (84.8)	19 (12.0)	4 (2.5)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	158
2018	79 (76.7)	21 (20.4)	1 (1.0)	2 (1.9)	0 (0.0)	0 (0.0)	0 (0.0)	103
2019	87 (68.5)	36 (28.3)	3 (2.4)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	127
2020	8 (34.8)	13 (56.5)	2 (8.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	23
2021	14 (58.3)	5 (20.8)	4 (16.7)	1 (4.2)	0 (0.0)	0 (0.0)	0 (0.0)	24

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	131 (82.9)	16 (10.1)	8 (5.1)	2 (1.3)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	158
2018	67 (65.0)	26 (25.2)	9 (8.7)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	103
2019	94 (74.0)	29 (22.8)	3 (2.4)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	127
2020	16 (69.6)	6 (26.1)	1 (4.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	23
2021	8 (33.3)	13 (54.2)	3 (12.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	24

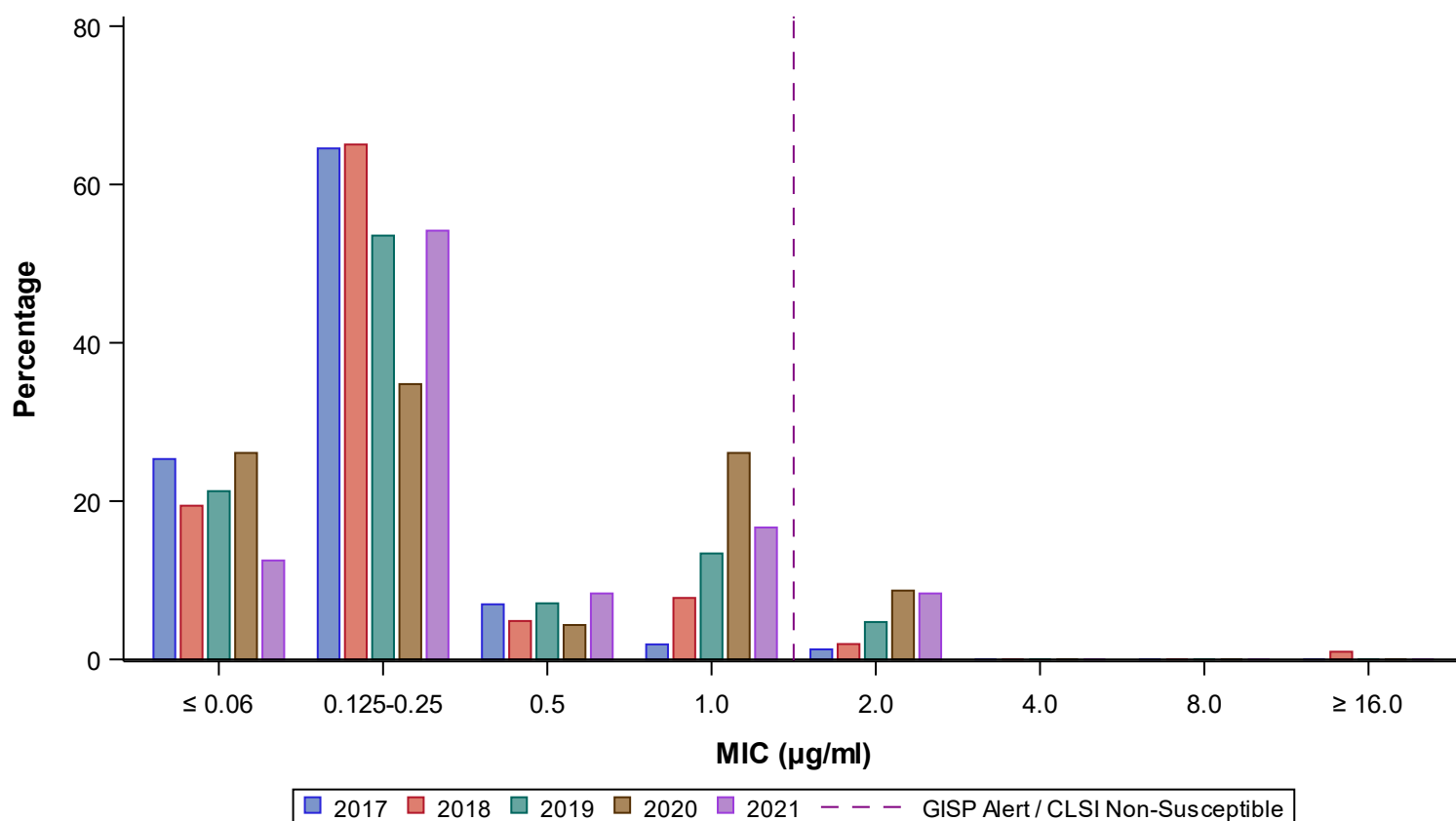
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	40 (25.3)	102 (64.6)	11 (7.0)	3 (1.9)	2 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	158
2018	20 (19.4)	67 (65.0)	5 (4.9)	8 (7.8)	2 (1.9)	0 (0.0)	0 (0.0)	1 (1.0)	103
2019	27 (21.3)	68 (53.5)	9 (7.1)	17 (13.4)	6 (4.7)	0 (0.0)	0 (0.0)	0 (0.0)	127
2020	6 (26.1)	8 (34.8)	1 (4.3)	6 (26.1)	2 (8.7)	0 (0.0)	0 (0.0)	0 (0.0)	23
2021	3 (12.5)	13 (54.2)	2 (8.3)	4 (16.7)	2 (8.3)	0 (0.0)	0 (0.0)	0 (0.0)	24

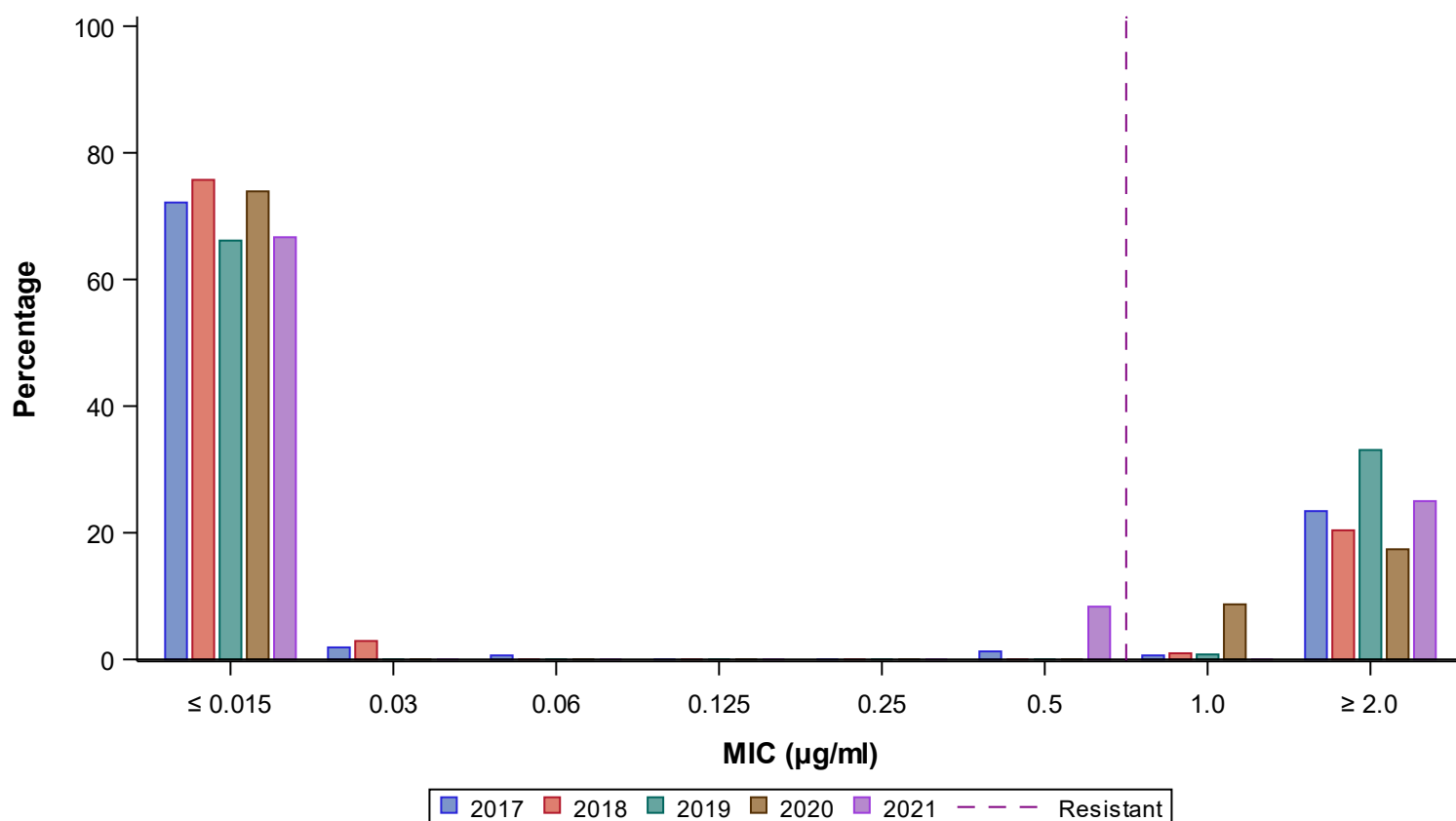
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

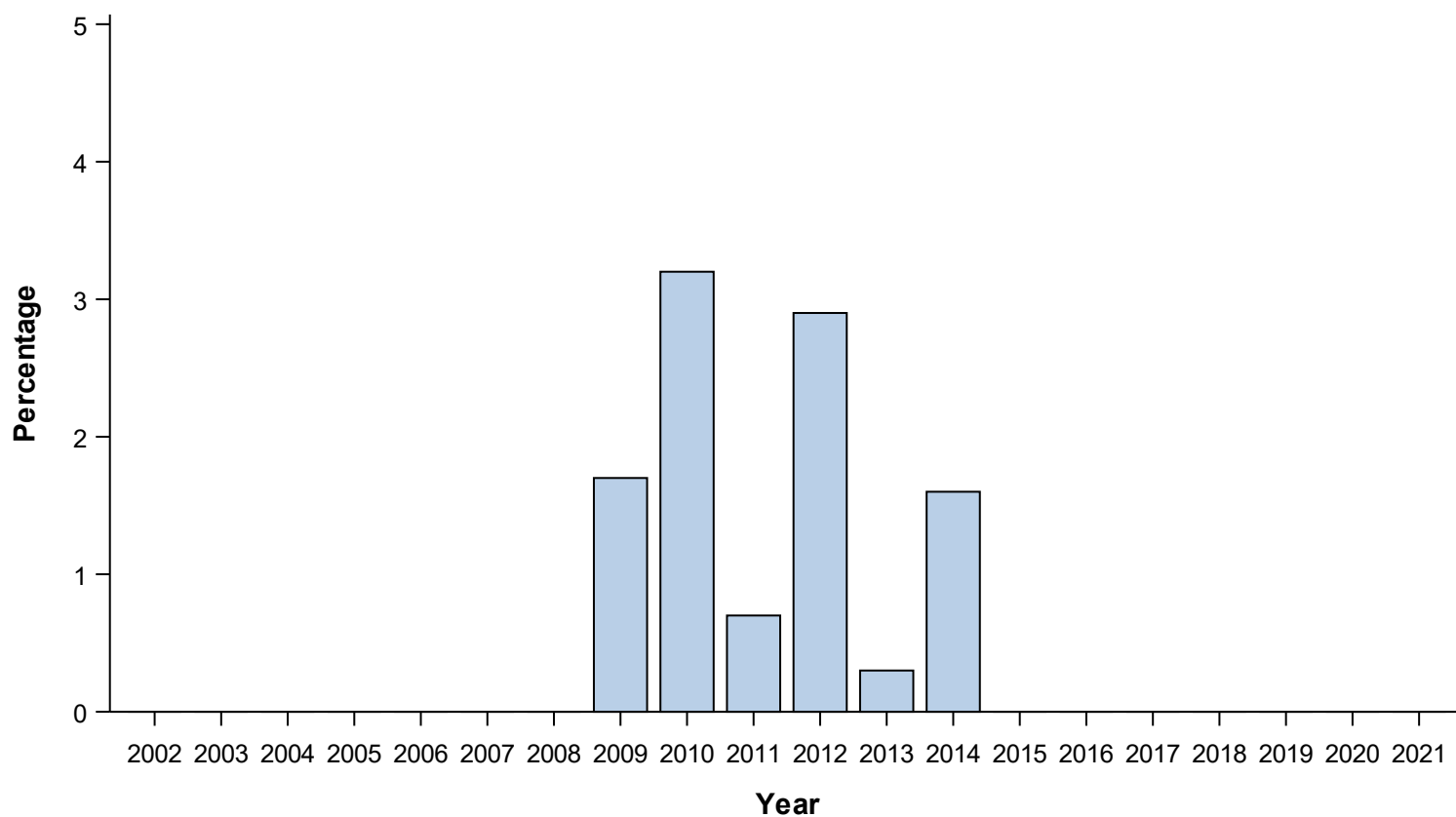
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	114 (72.2)	3 (1.9)	1 (0.6)	0 (0.0)	0 (0.0)	2 (1.3)	1 (0.6)	37 (23.4)	158
2018	78 (75.7)	3 (2.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)	21 (20.4)	103
2019	84 (66.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	42 (33.1)	127
2020	17 (73.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (8.7)	4 (17.4)	23
2021	16 (66.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (8.3)	0 (0.0)	6 (25.0)	24

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2002-2021

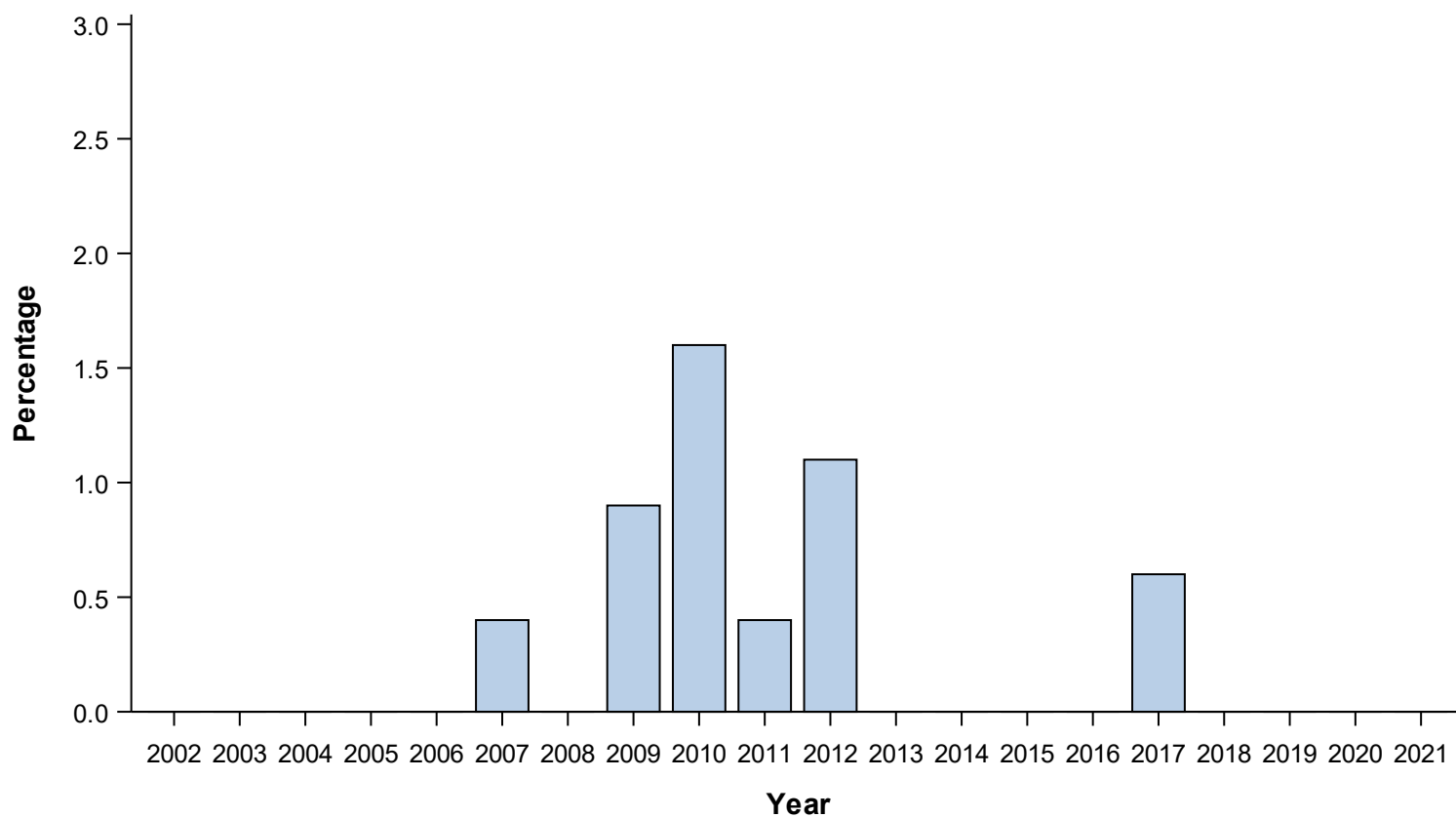


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (1.7)	4 (3.2)	2 (0.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
8 (2.9)	1 (0.3)	2 (1.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2002-2021

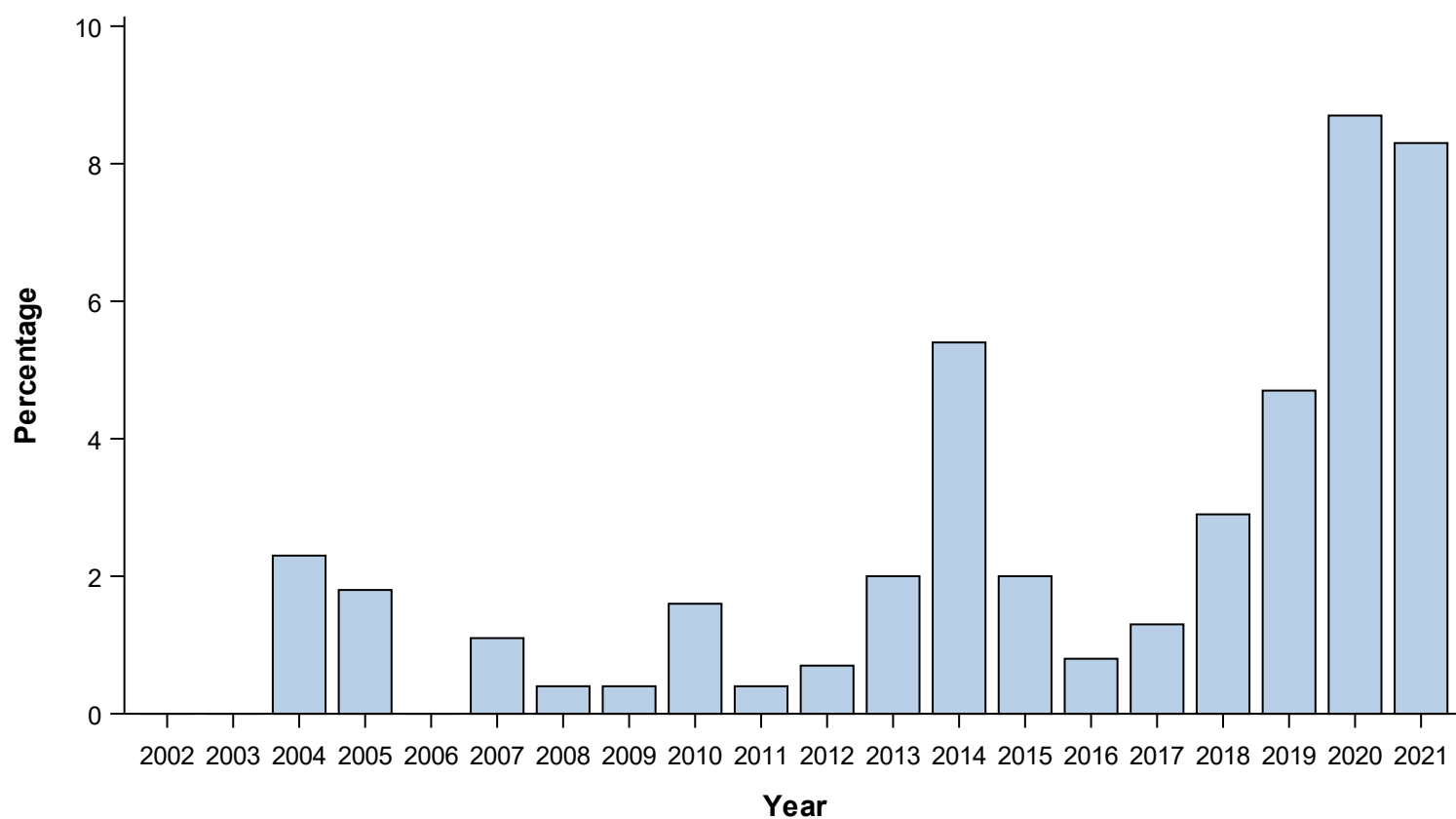


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	2 (0.9)	2 (1.6)	1 (0.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
3 (1.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Chicago, Illinois, 2002-2021

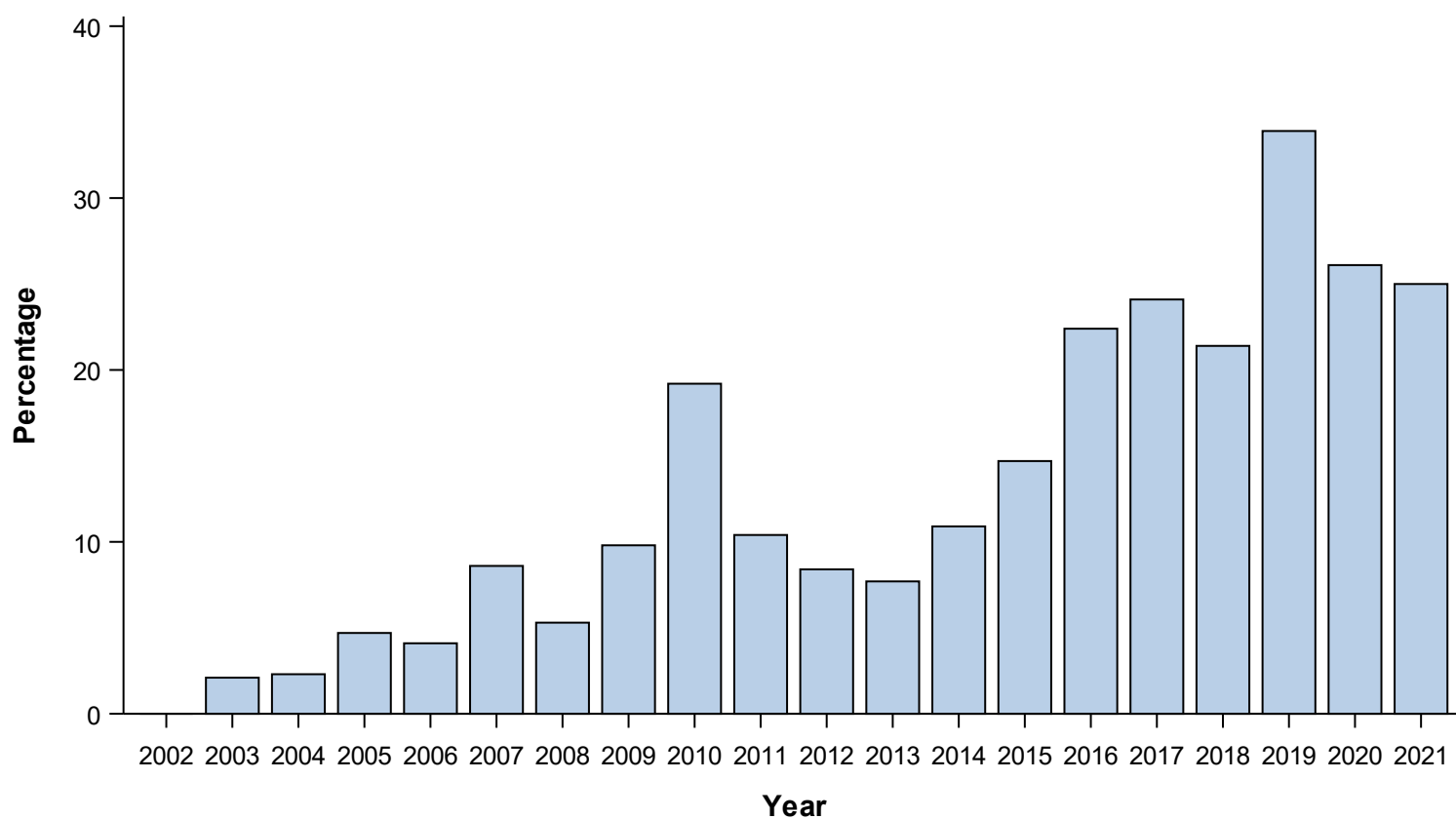


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	7 (2.3)	5 (1.8)	0 (0.0)	3 (1.1)	1 (0.4)	1 (0.4)	2 (1.6)	1 (0.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
2 (0.7)	6 (2.0)	7 (5.4)	3 (2.0)	1 (0.8)	2 (1.3)	3 (2.9)	6 (4.7)	2 (8.7)	2 (8.3)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Chicago, Illinois, 2002-2021

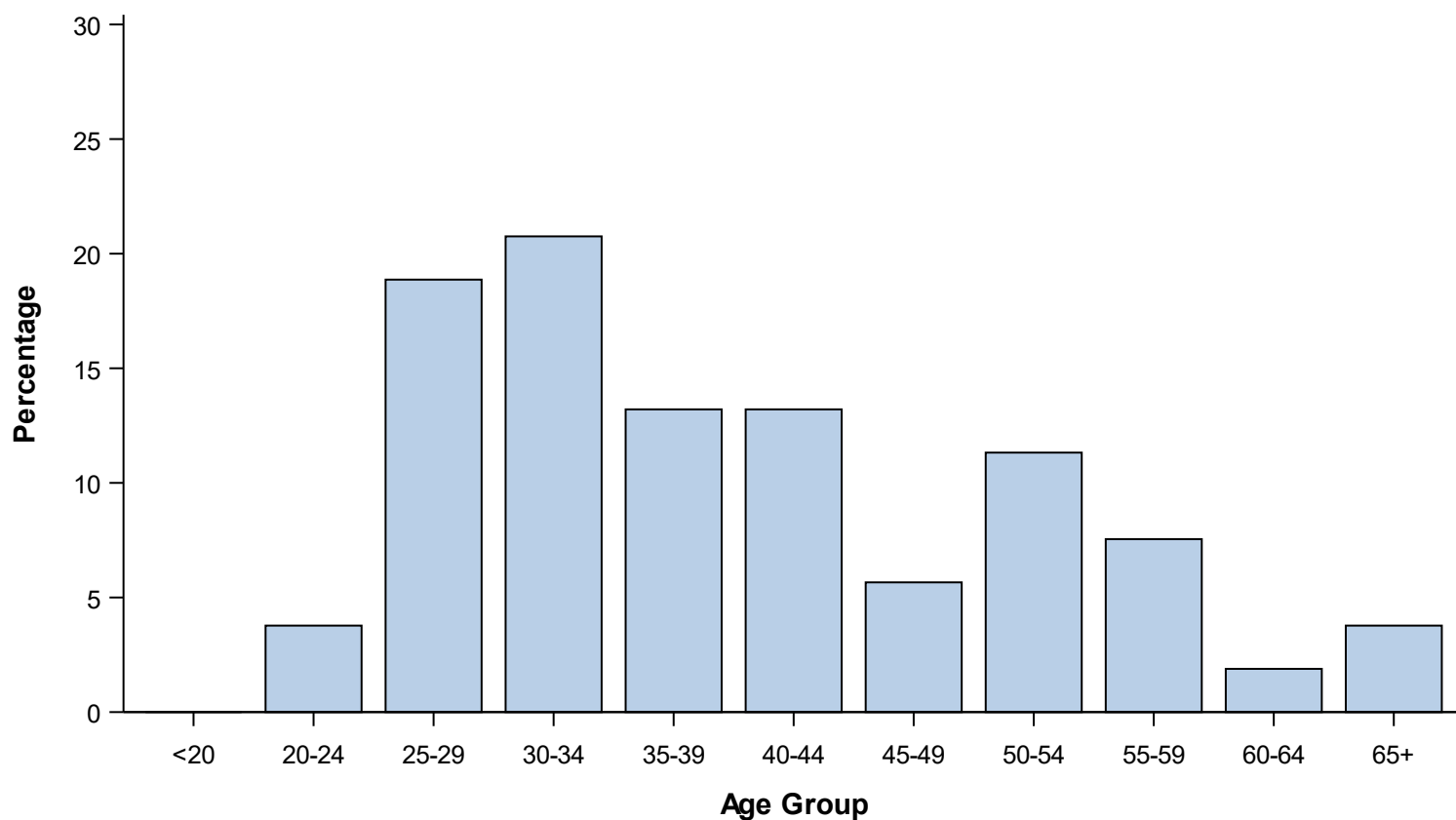


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	6 (2.1)	7 (2.3)	13 (4.7)	12 (4.1)	23 (8.6)	14 (5.3)	23 (9.8)	24 (19.2)	28 (10.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
23 (8.4)	23 (7.7)	14 (10.9)	22 (14.7)	28 (22.4)	38 (24.1)	22 (21.4)	43 (33.9)	6 (26.1)	6 (25.0)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

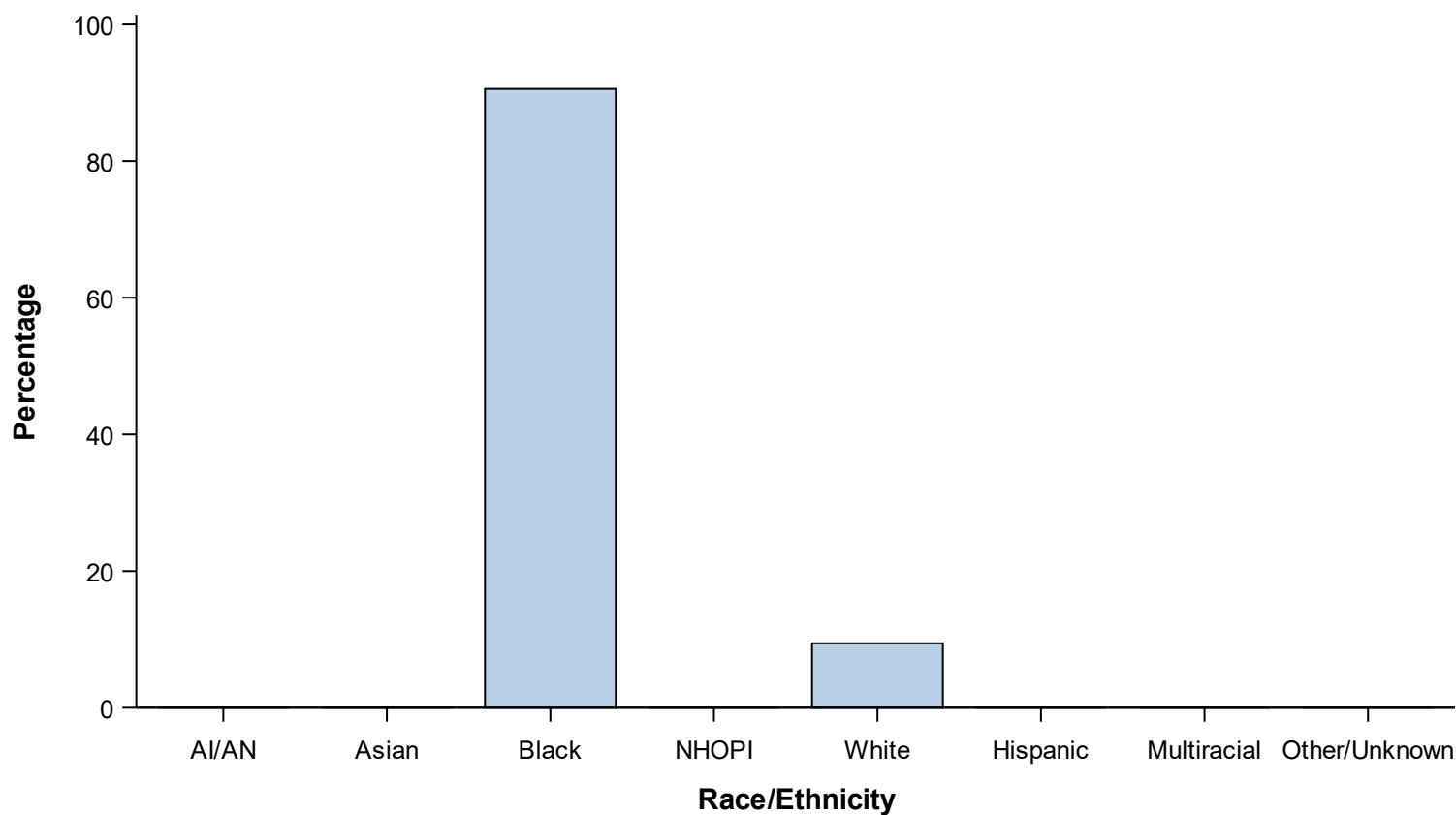
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Cleveland, Ohio, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
0 (0.0)	2 (3.8)	10 (18.9)	11 (20.8)	7 (13.2)	7 (13.2)	3 (5.7)	6 (11.3)	4 (7.5)	1 (1.9)	2 (3.8)	53

Note: Cases with unknown age were excluded.

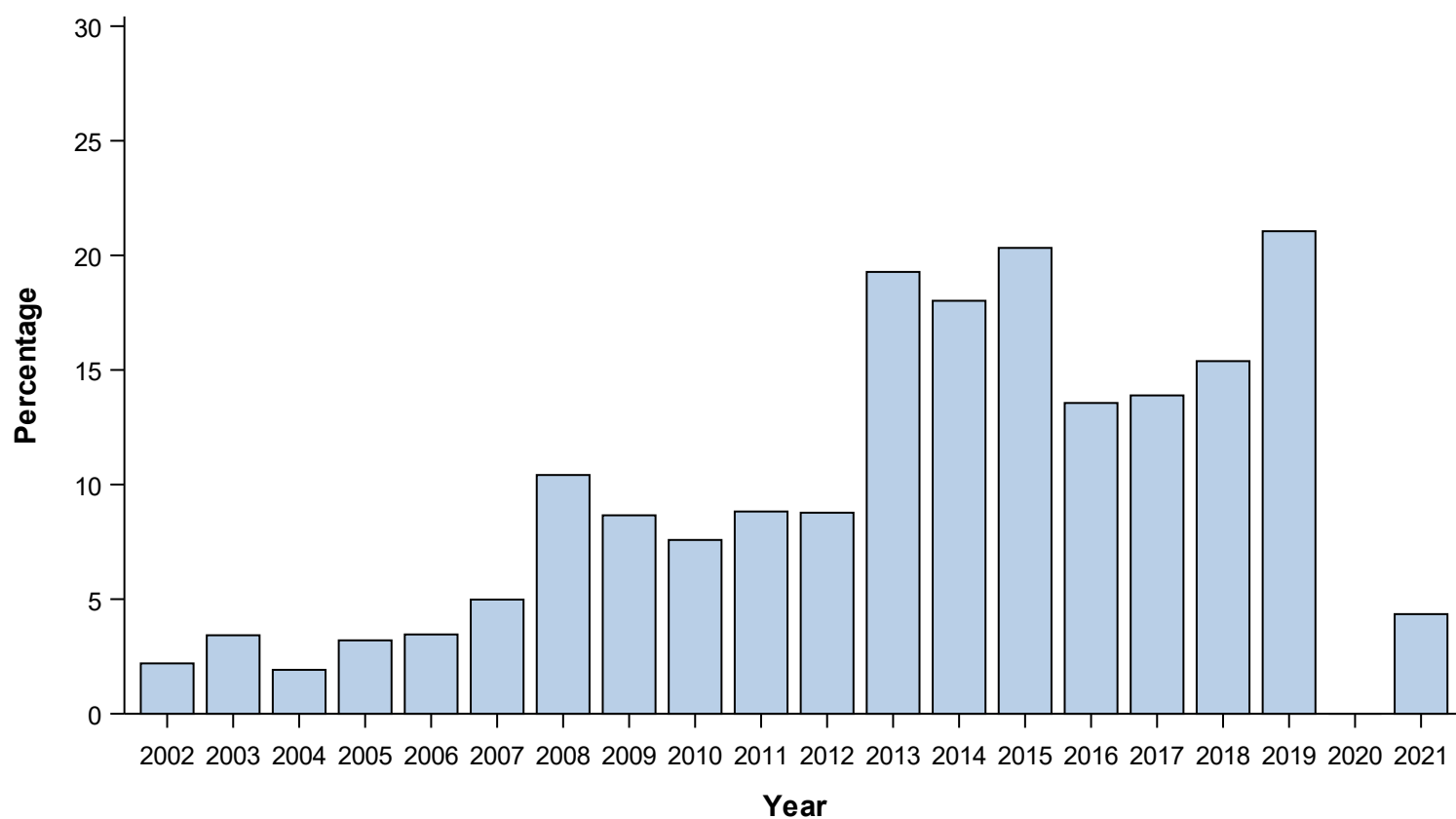
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Cleveland, Ohio, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	48 (90.6)	0 (0.0)	5 (9.4)	0 (0.0)	0 (0.0)	0 (0.0)	53

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Cleveland, Ohio, 2002-2021

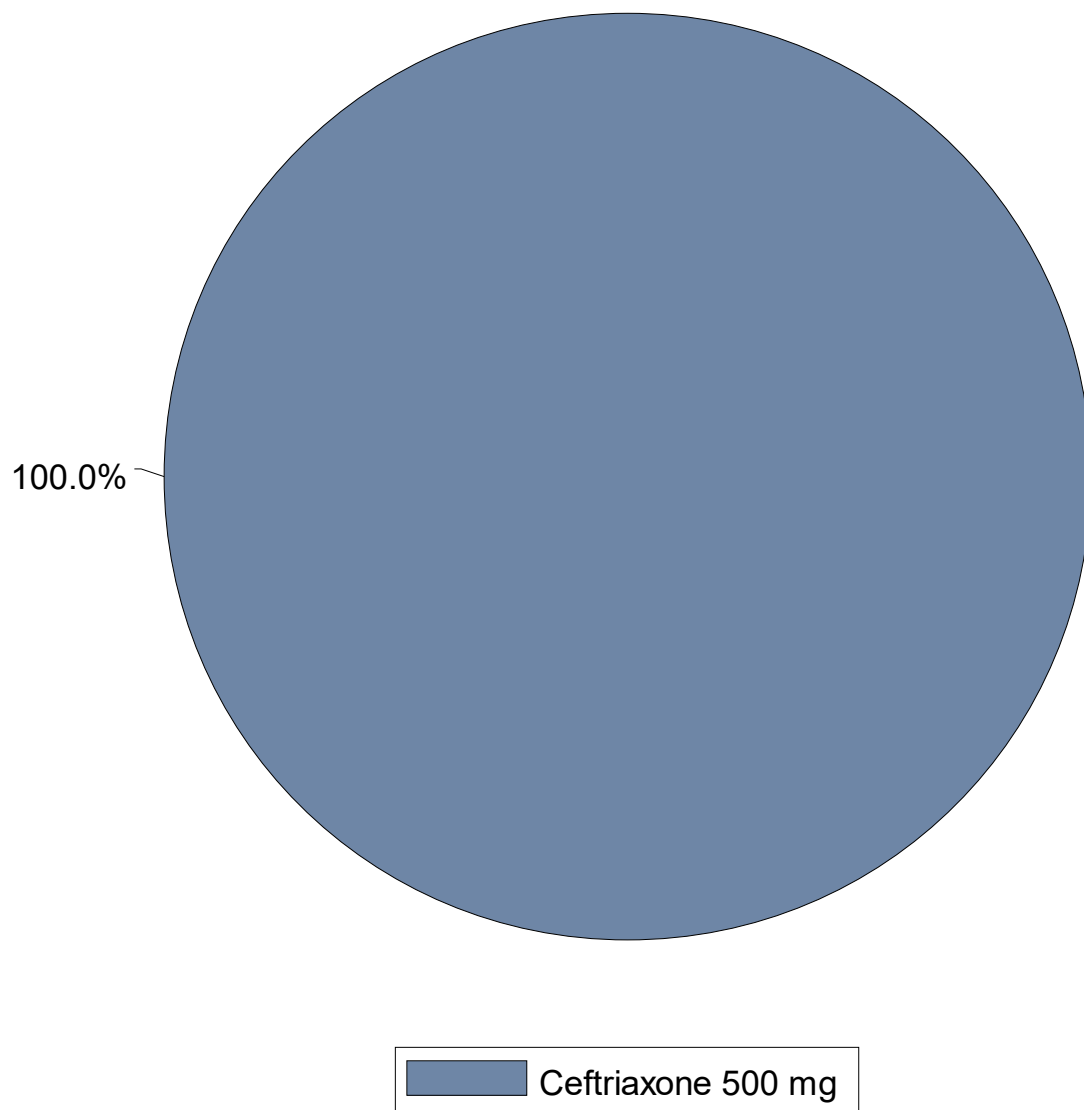


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
6 (2.2)	10 (3.4)	5 (1.9)	9 (3.2)	10 (3.5)	14 (5.0)	25 (10.4)	20 (8.7)	16 (7.6)	18 (8.8)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
15 (8.8)	32 (19.3)	20 (18.0)	25 (20.3)	16 (13.6)	10 (13.9)	6 (15.4)	4 (21.1)	0 (0.0)	2 (4.3)

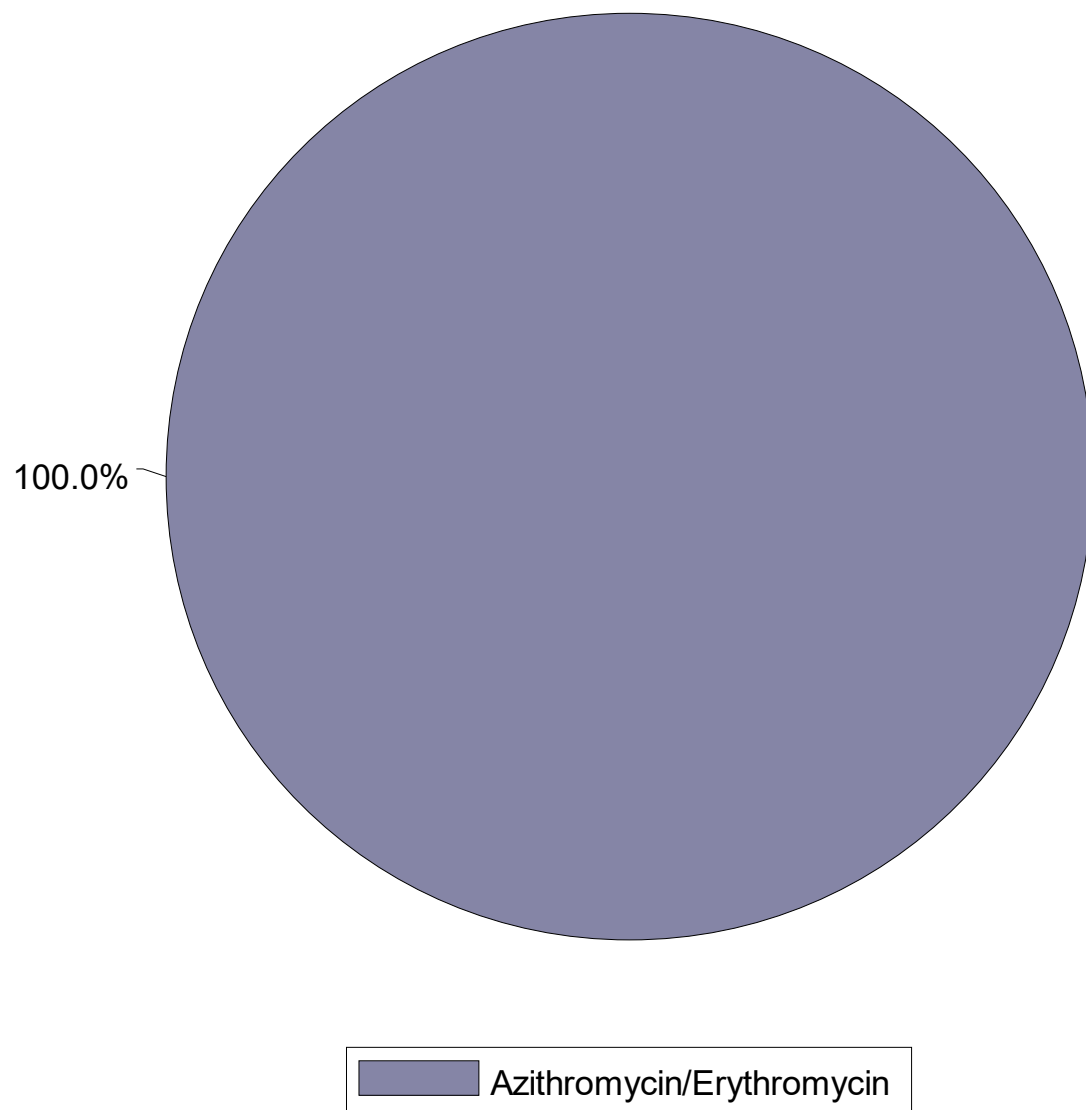
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Cleveland, Ohio, 2021



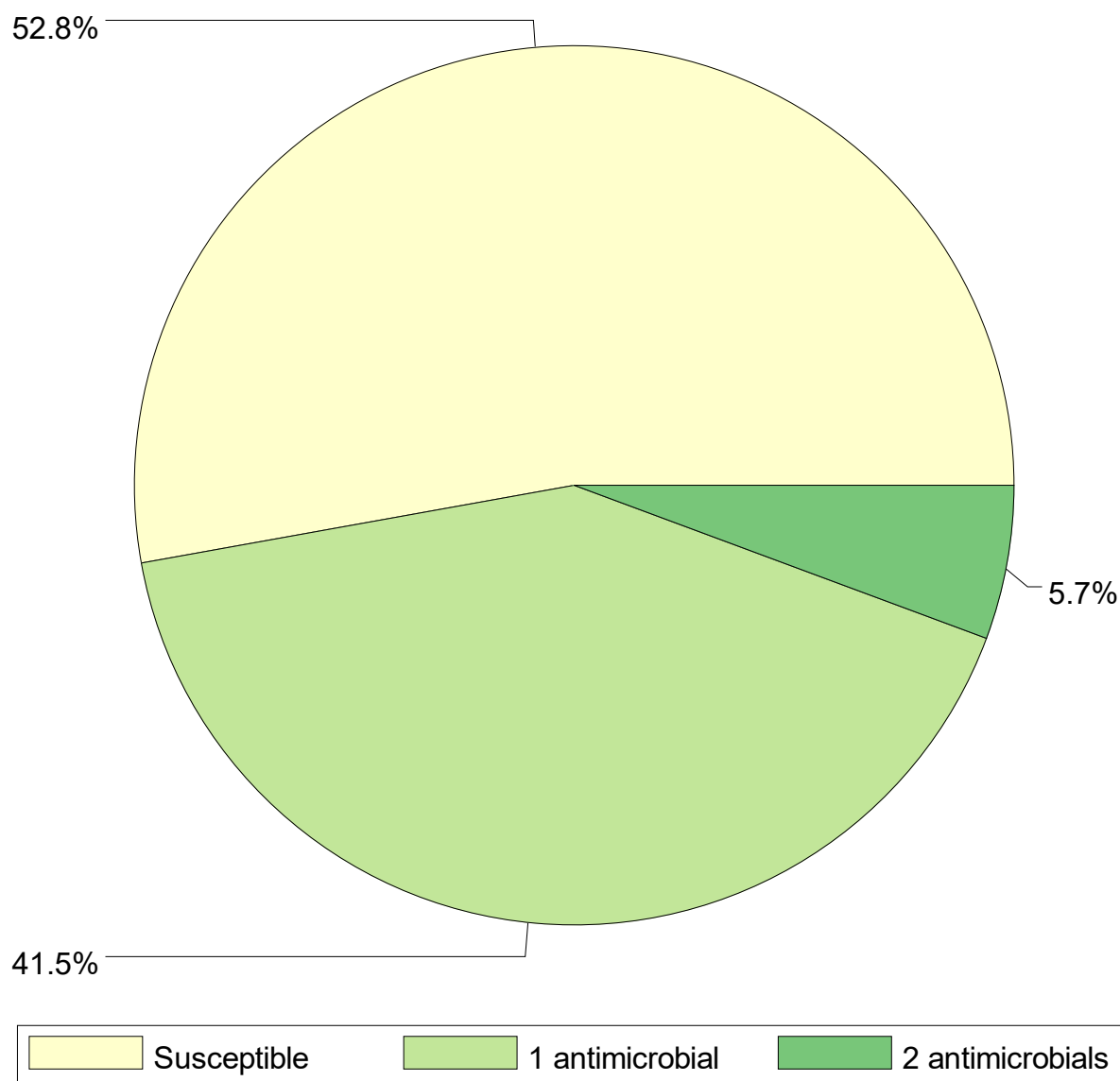
Primary Treatment	Count	Percentage
Ceftriaxone 500 mg	53	100.0

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Cleveland, Ohio, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	53	100.0

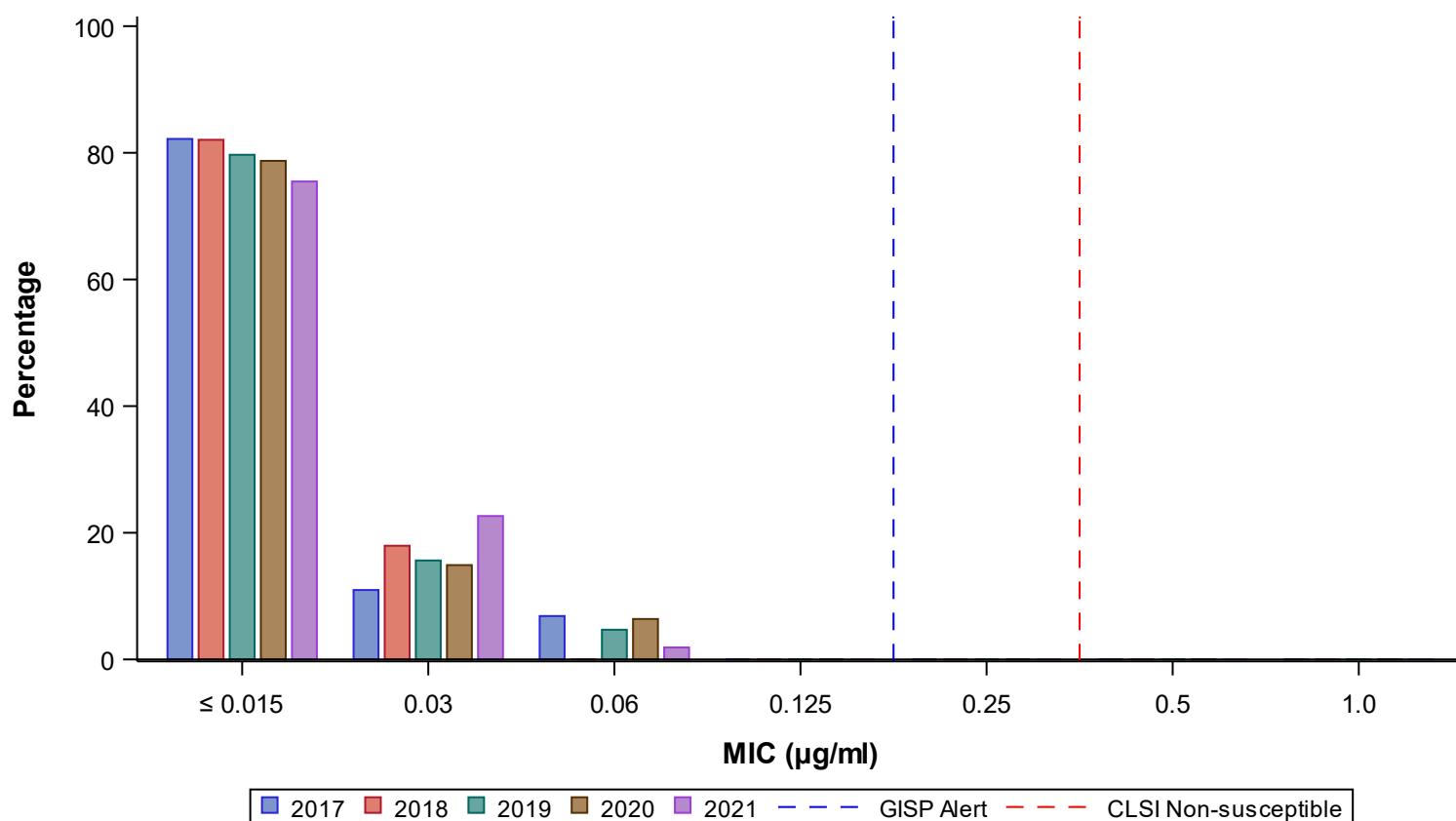
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Cleveland, Ohio, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	28	52.8
1 antimicrobial	22	41.5
2 antimicrobials	3	5.7
3 antimicrobials	0	0.0
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Cleveland, Ohio, 2017-2021



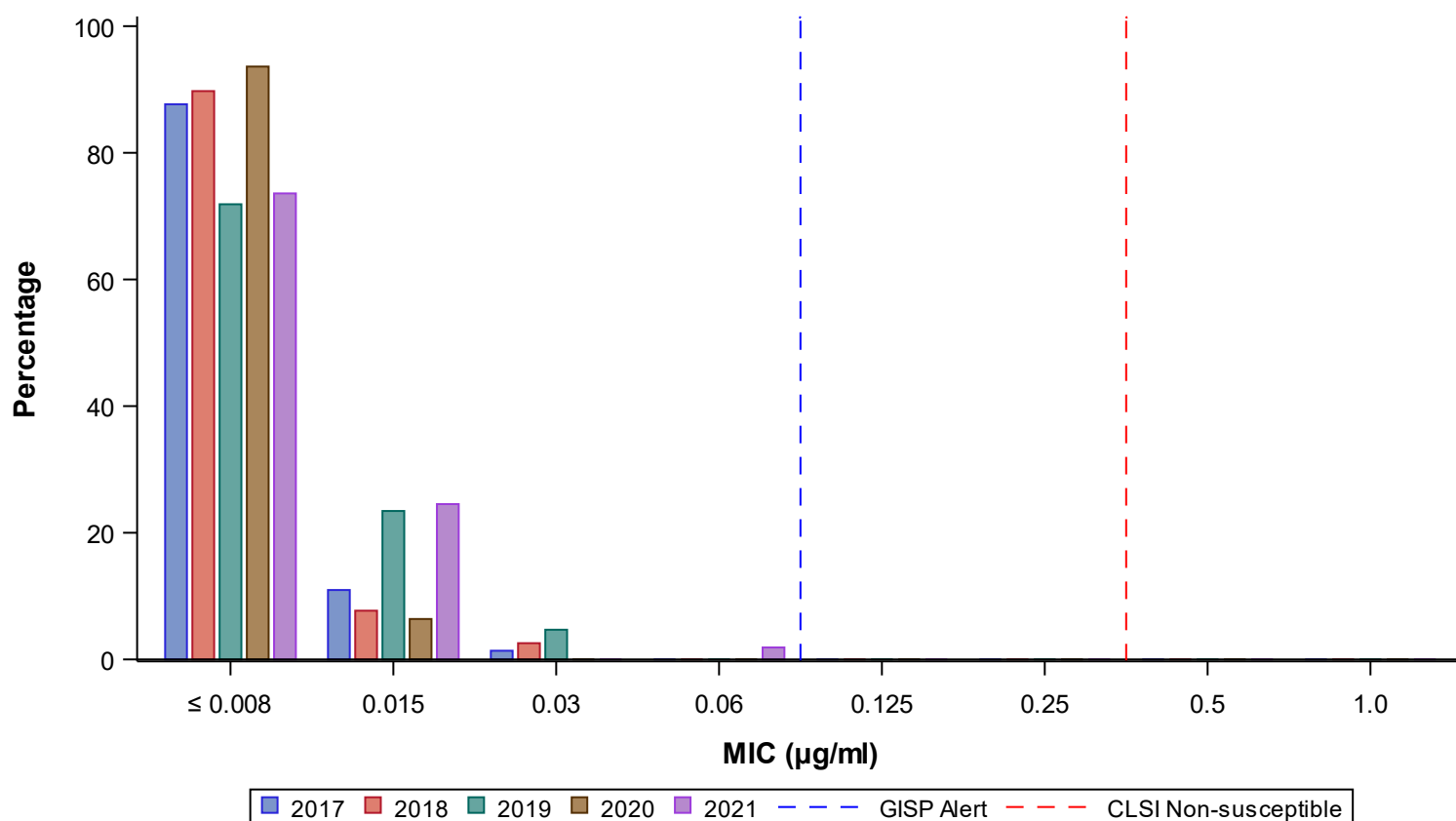
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	60 (82.2)	8 (11.0)	5 (6.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	73
2018	32 (82.1)	7 (17.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	39
2019	51 (79.7)	10 (15.6)	3 (4.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	64
2020	37 (78.7)	7 (14.9)	3 (6.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	47
2021	40 (75.5)	12 (22.6)	1 (1.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	53

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Cleveland, Ohio, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	64 (87.7)	8 (11.0)	1 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	73
2018	35 (89.7)	3 (7.7)	1 (2.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	39
2019	46 (71.9)	15 (23.4)	3 (4.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	64
2020	44 (93.6)	3 (6.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	47
2021	39 (73.6)	13 (24.5)	0 (0.0)	1 (1.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	53

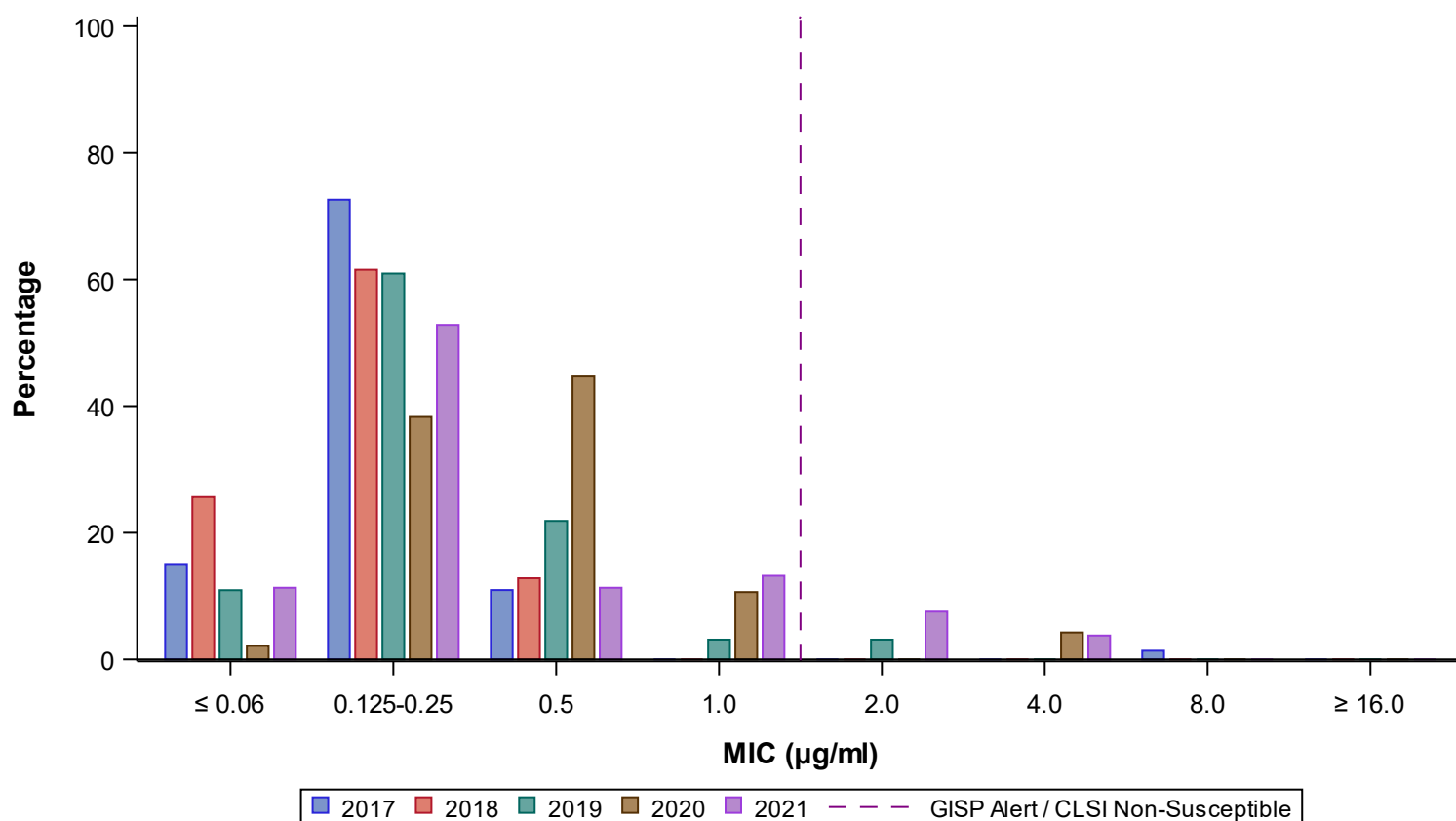
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Cleveland, Ohio, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	11 (15.1)	53 (72.6)	8 (11.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.4)	0 (0.0)	73
2018	10 (25.6)	24 (61.5)	5 (12.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	39
2019	7 (10.9)	39 (60.9)	14 (21.9)	2 (3.1)	2 (3.1)	0 (0.0)	0 (0.0)	0 (0.0)	64
2020	1 (2.1)	18 (38.3)	21 (44.7)	5 (10.6)	0 (0.0)	2 (4.3)	0 (0.0)	0 (0.0)	47
2021	6 (11.3)	28 (52.8)	6 (11.3)	7 (13.2)	4 (7.5)	2 (3.8)	0 (0.0)	0 (0.0)	53

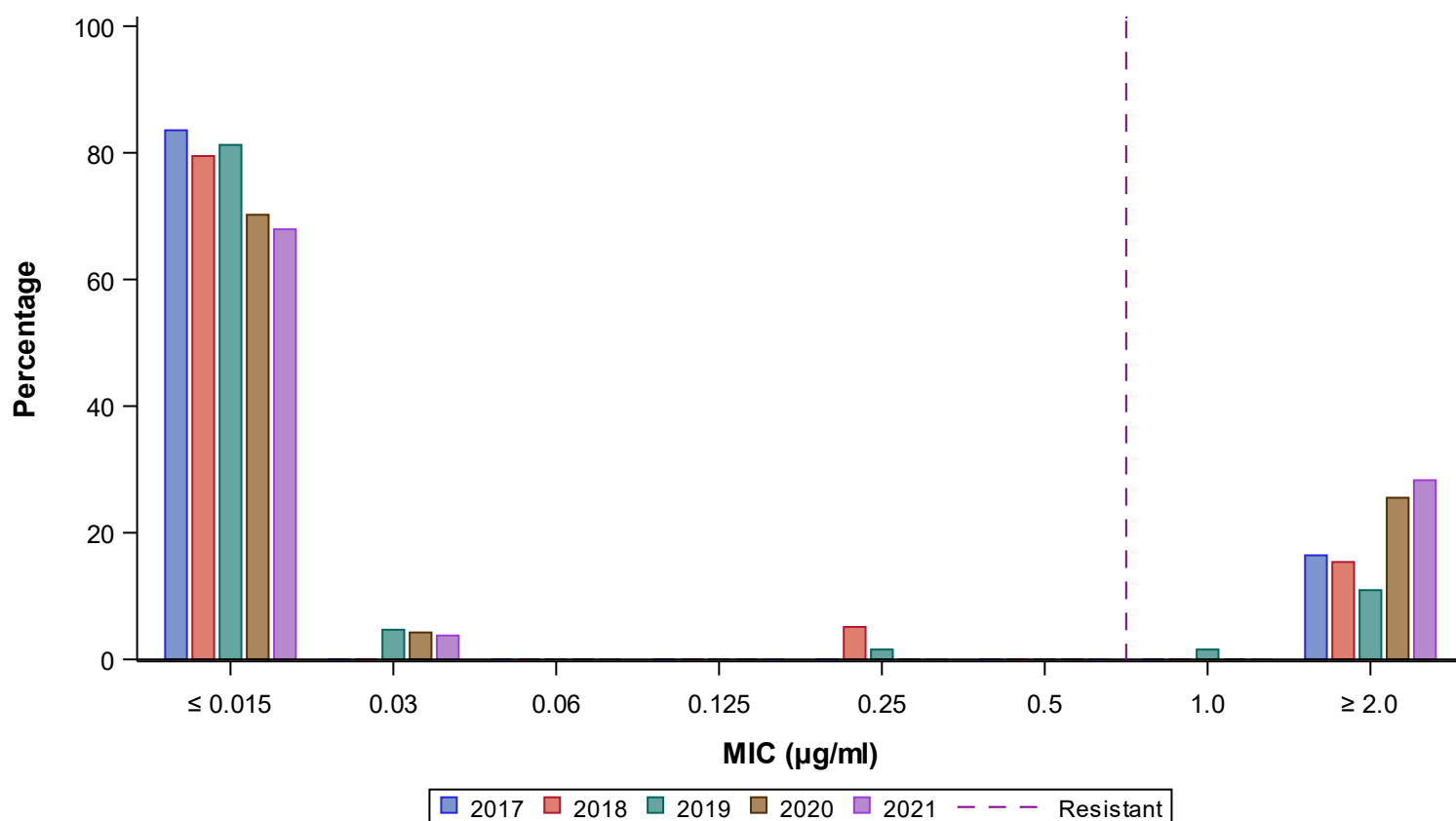
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

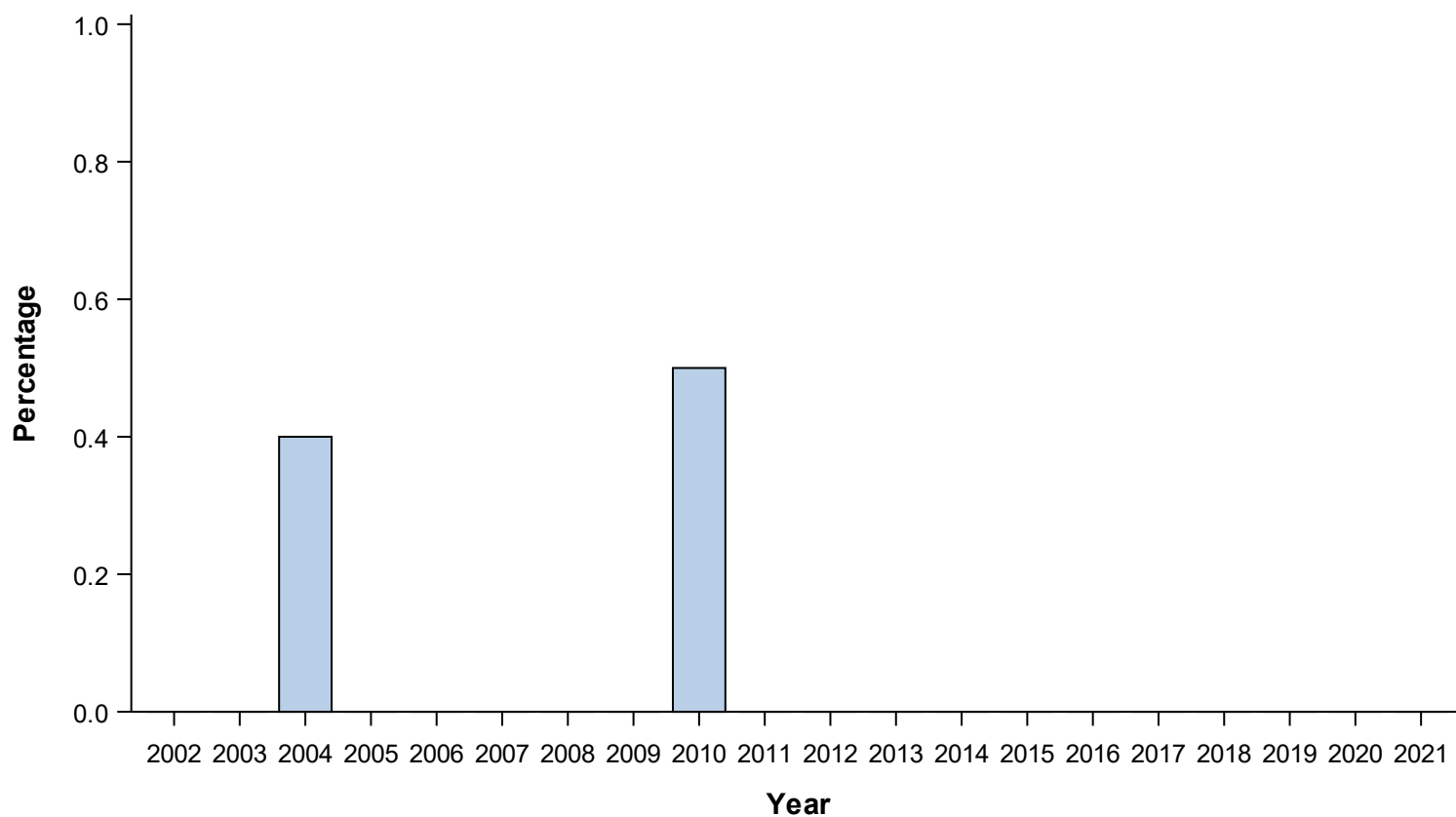
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Cleveland, Ohio, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	61 (83.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	12 (16.4)	73
2018	31 (79.5)	0 (0.0)	0 (0.0)	0 (0.0)	2 (5.1)	0 (0.0)	0 (0.0)	6 (15.4)	39
2019	52 (81.3)	3 (4.7)	0 (0.0)	0 (0.0)	1 (1.6)	0 (0.0)	1 (1.6)	7 (10.9)	64
2020	33 (70.2)	2 (4.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	12 (25.5)	47
2021	36 (67.9)	2 (3.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	15 (28.3)	53

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Cleveland, Ohio, 2002-2021

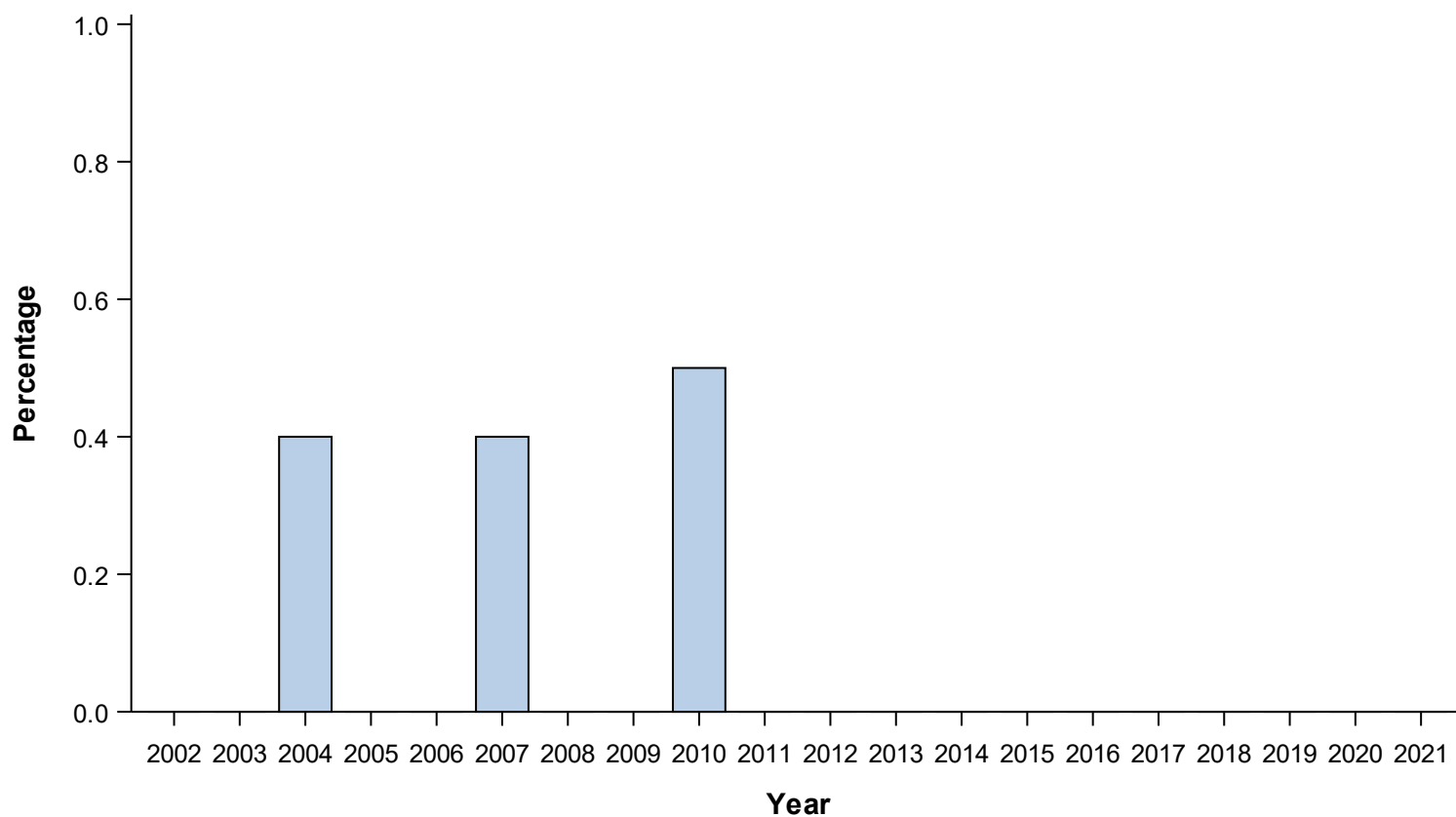


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Cleveland, Ohio, 2002-2021

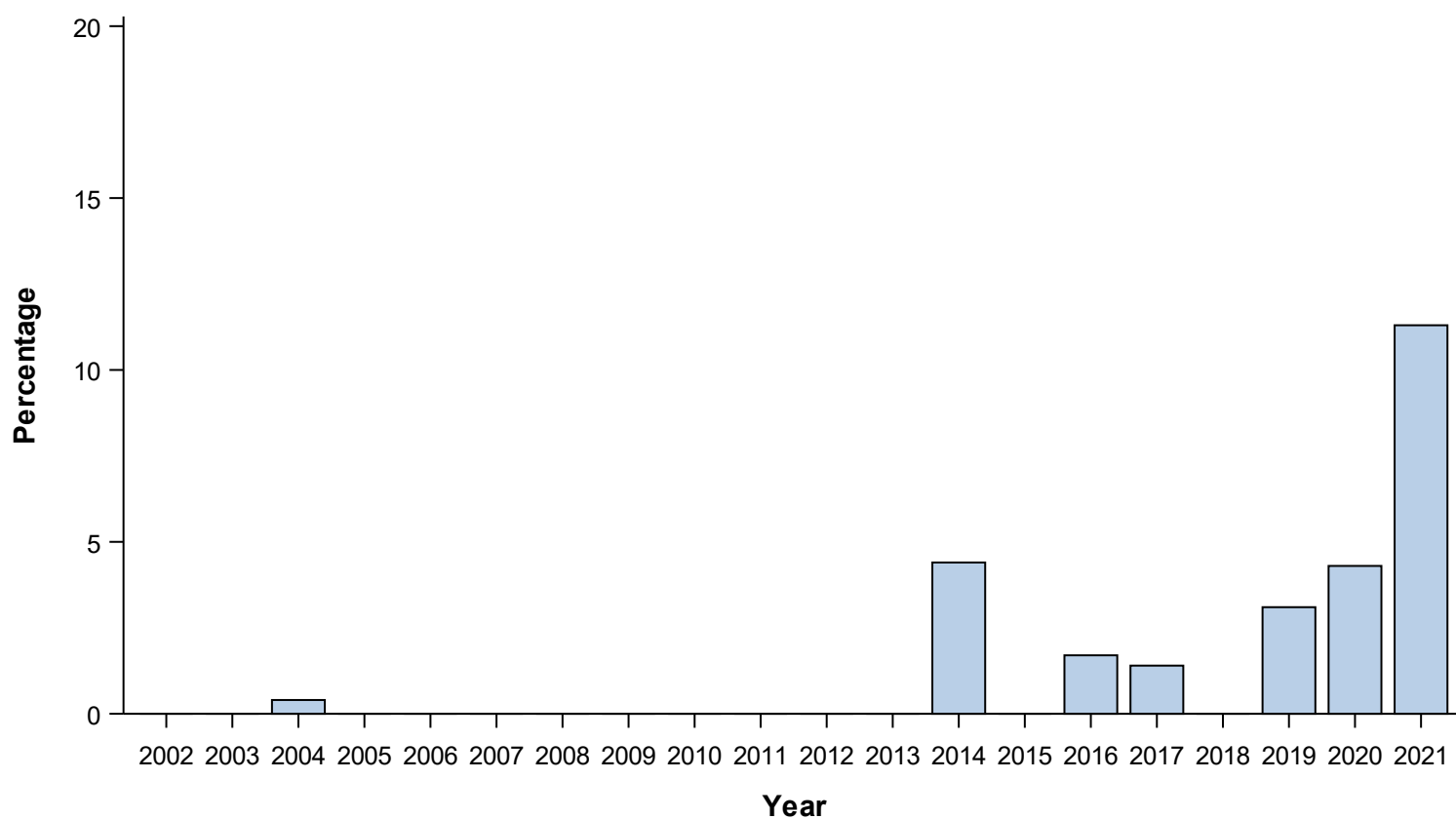


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	1 (0.5)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Cleveland, Ohio, 2002-2021

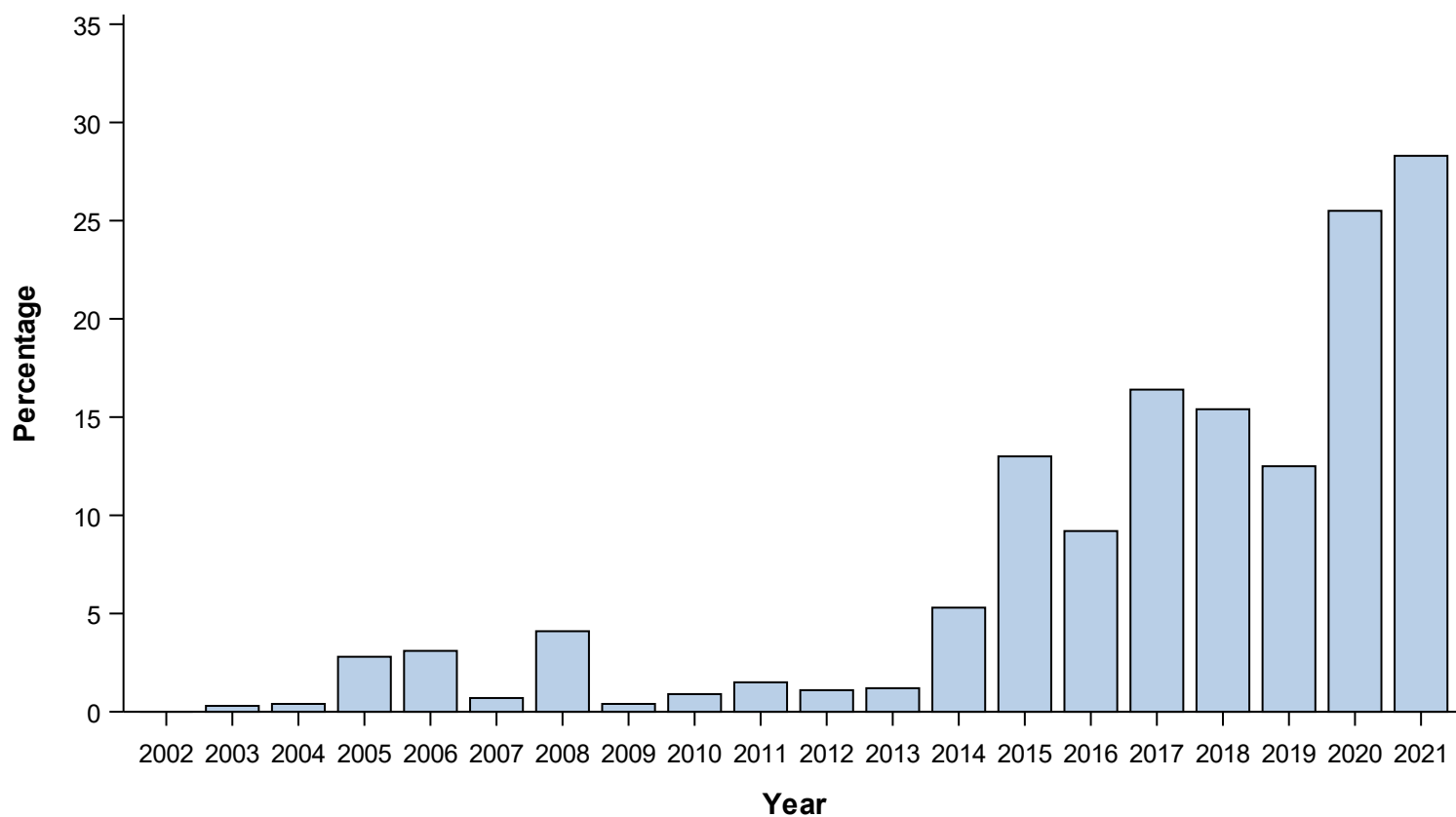


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	5 (4.4)	0 (0.0)	2 (1.7)	1 (1.4)	0 (0.0)	2 (3.1)	2 (4.3)	6 (11.3)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Cleveland, Ohio, 2002-2021

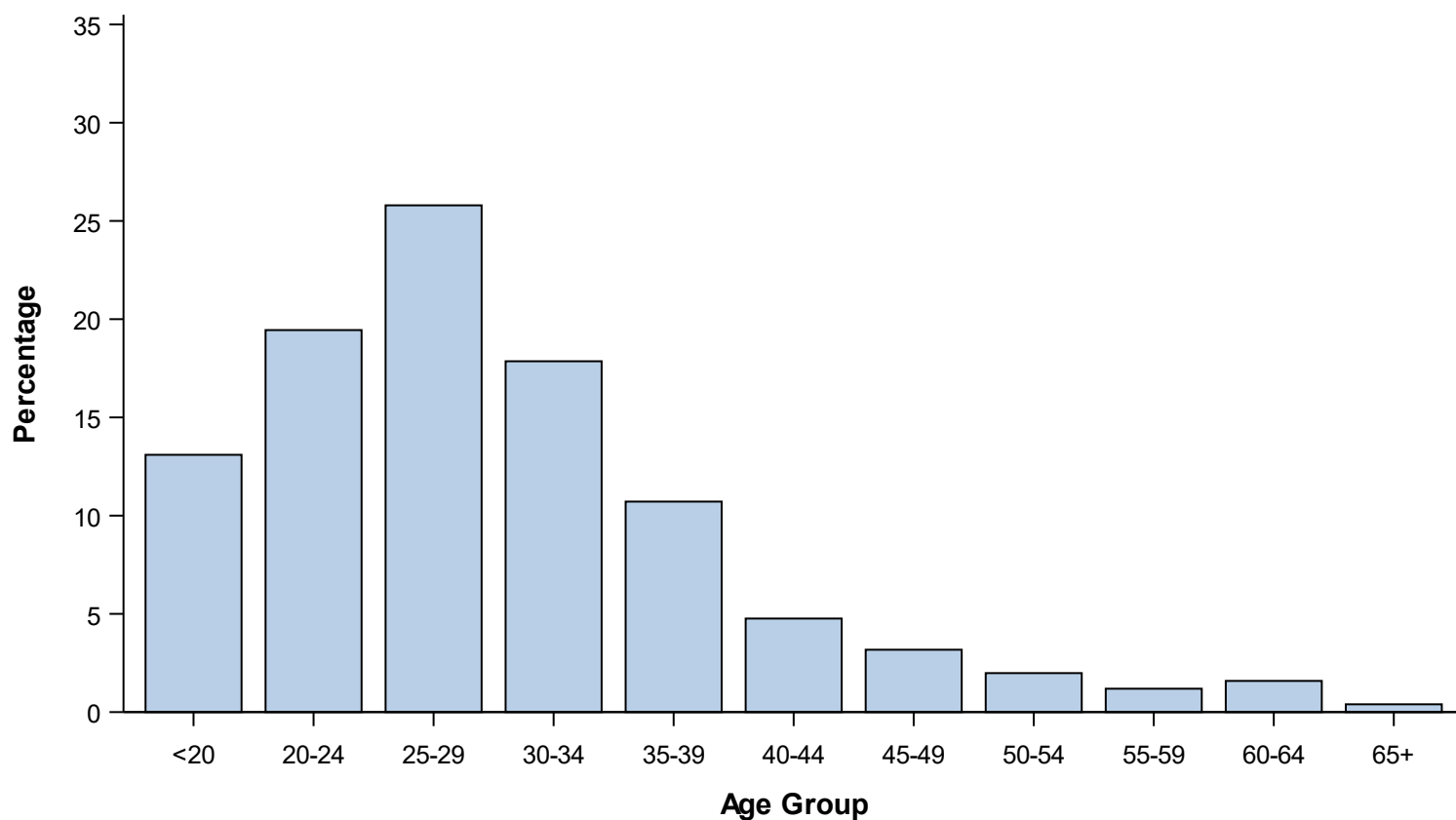


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	1 (0.3)	1 (0.4)	8 (2.8)	9 (3.1)	2 (0.7)	10 (4.1)	1 (0.4)	2 (0.9)	3 (1.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
2 (1.1)	2 (1.2)	6 (5.3)	16 (13.0)	11 (9.2)	12 (16.4)	6 (15.4)	8 (12.5)	12 (25.5)	15 (28.3)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

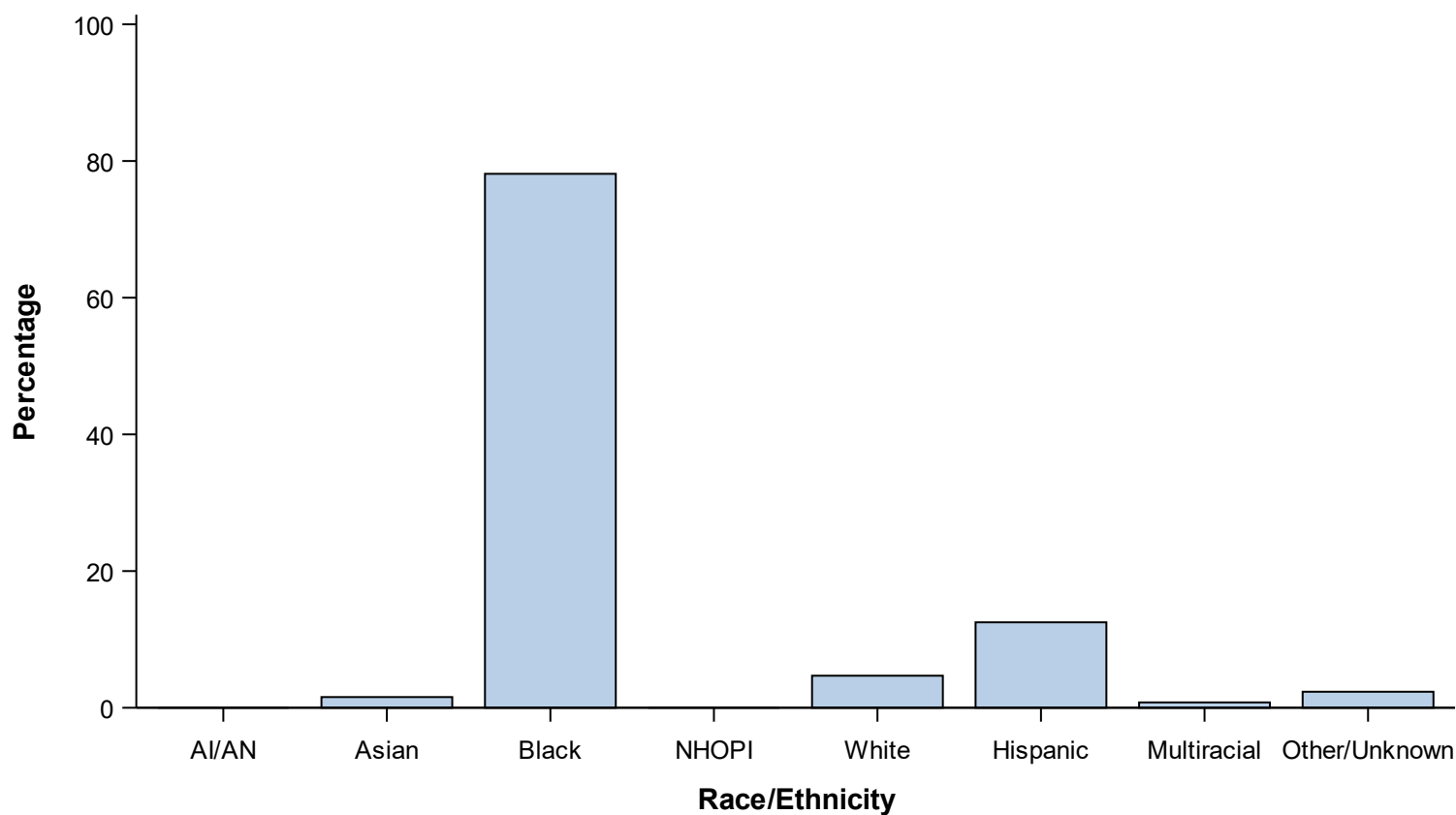
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
33 (13.1)	49 (19.4)	65 (25.8)	45 (17.9)	27 (10.7)	12 (4.8)	8 (3.2)	5 (2.0)	3 (1.2)	4 (1.6)	1 (0.4)	252

Note: Cases with unknown age were excluded.

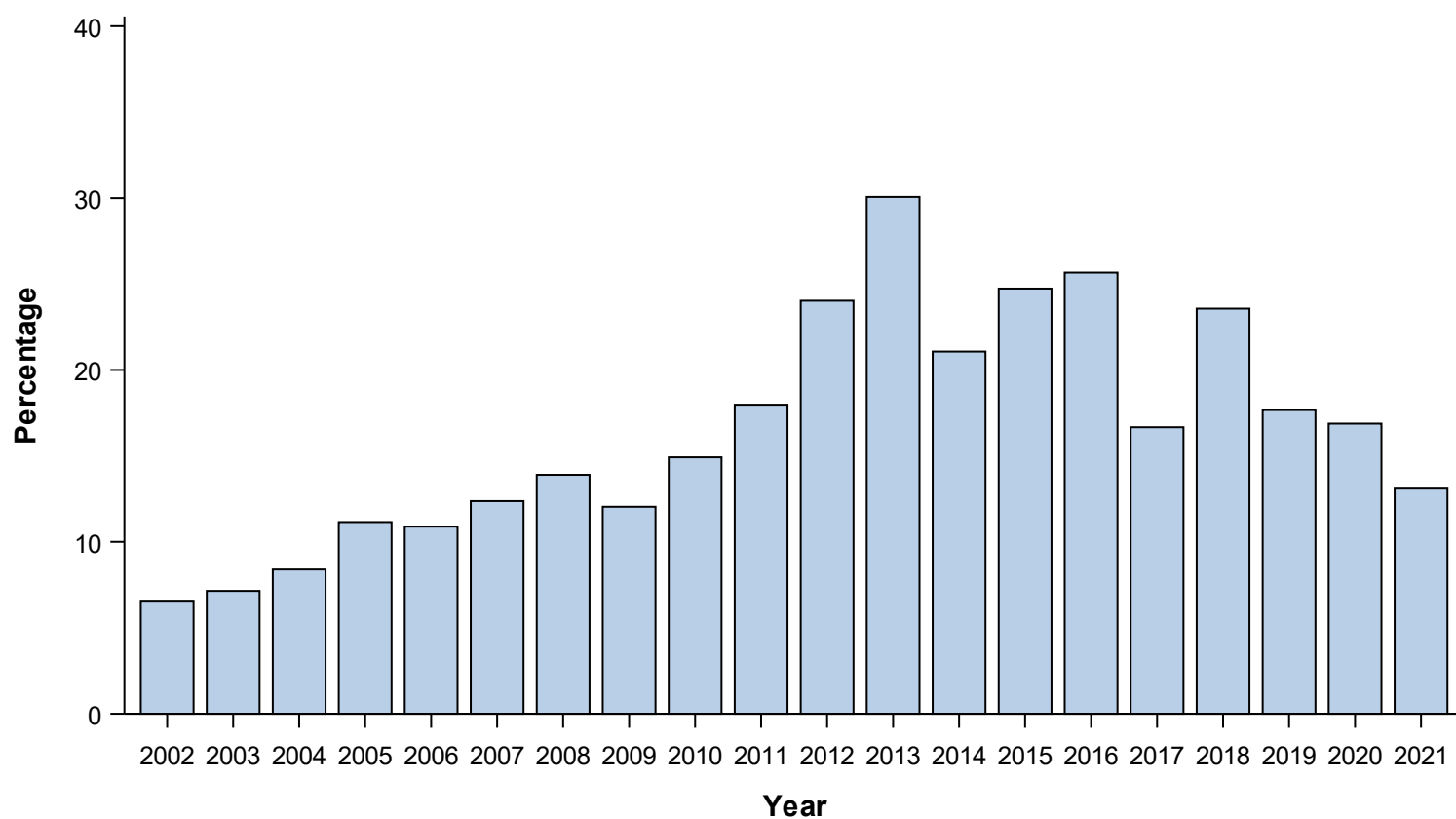
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	4 (1.6)	200 (78.1)	0 (0.0)	12 (4.7)	32 (12.5)	2 (0.8)	6 (2.3)	256

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Dallas, Texas, 2002-2021

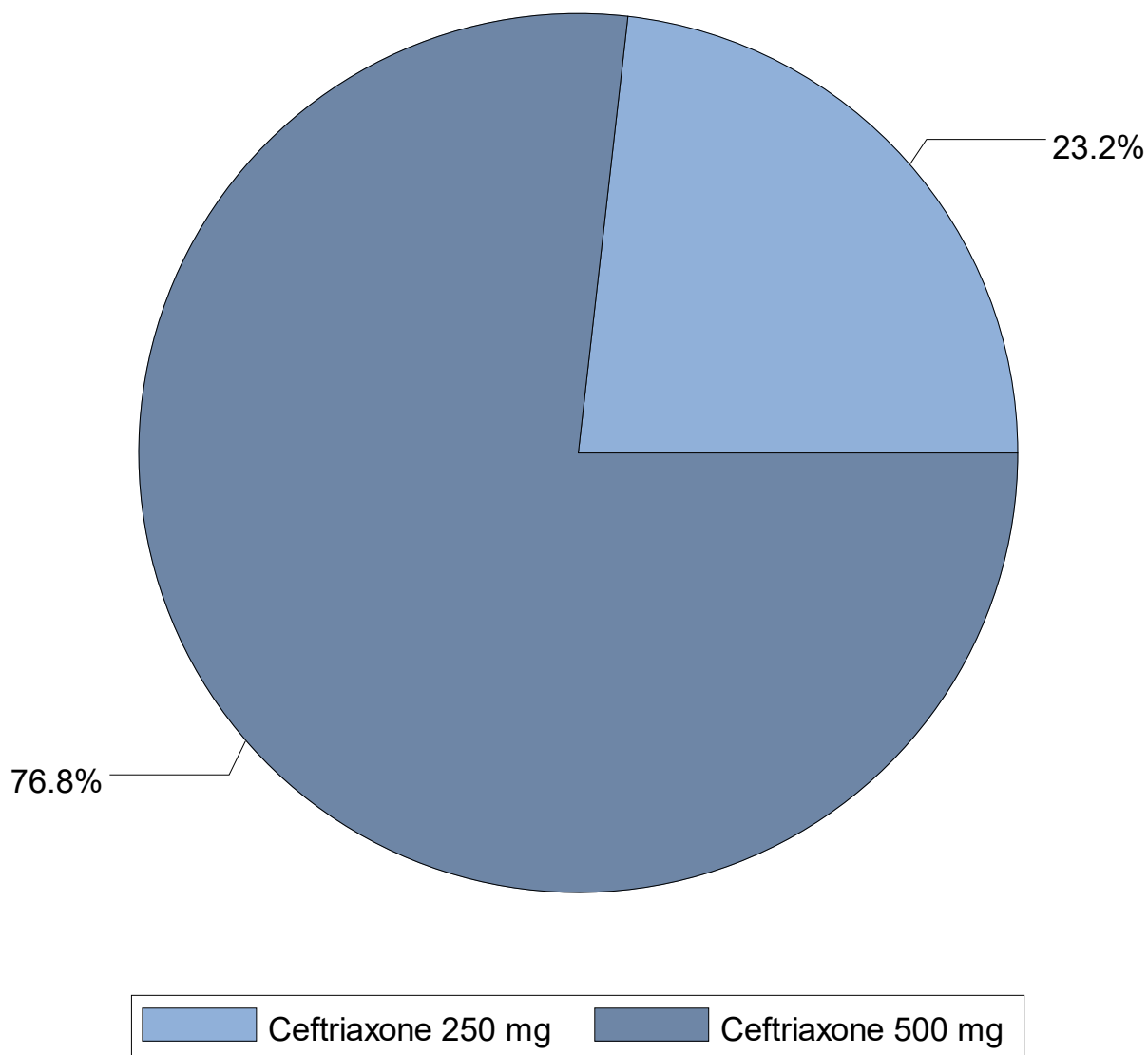


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
19 (6.6)	21 (7.1)	25 (8.4)	31 (11.2)	32 (10.9)	36 (12.4)	41 (13.9)	36 (12.0)	44 (14.9)	48 (18.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
68 (24.0)	86 (30.1)	63 (21.1)	70 (24.7)	77 (25.7)	47 (16.7)	70 (23.6)	53 (17.7)	40 (16.9)	33 (13.1)

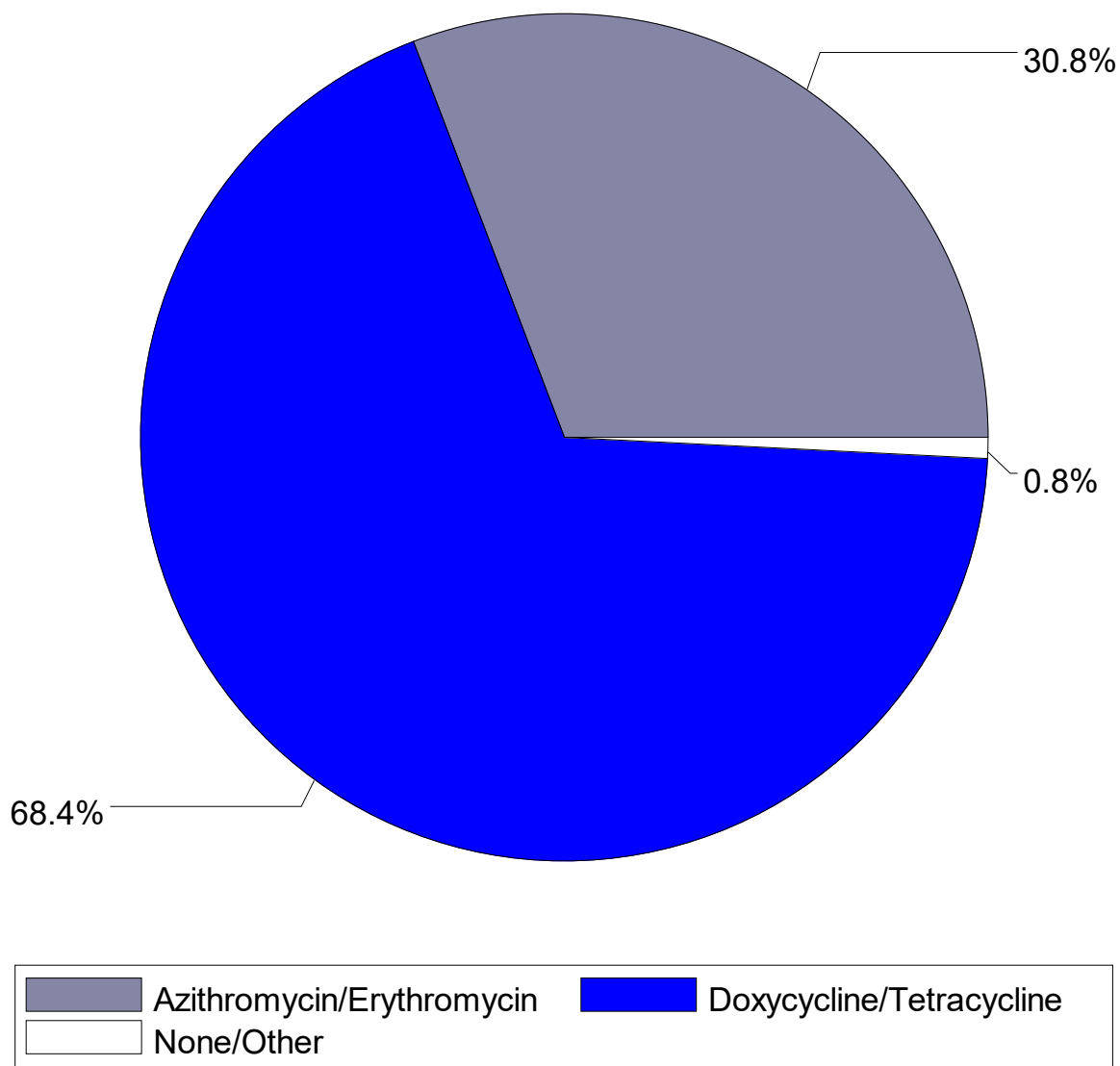
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2021



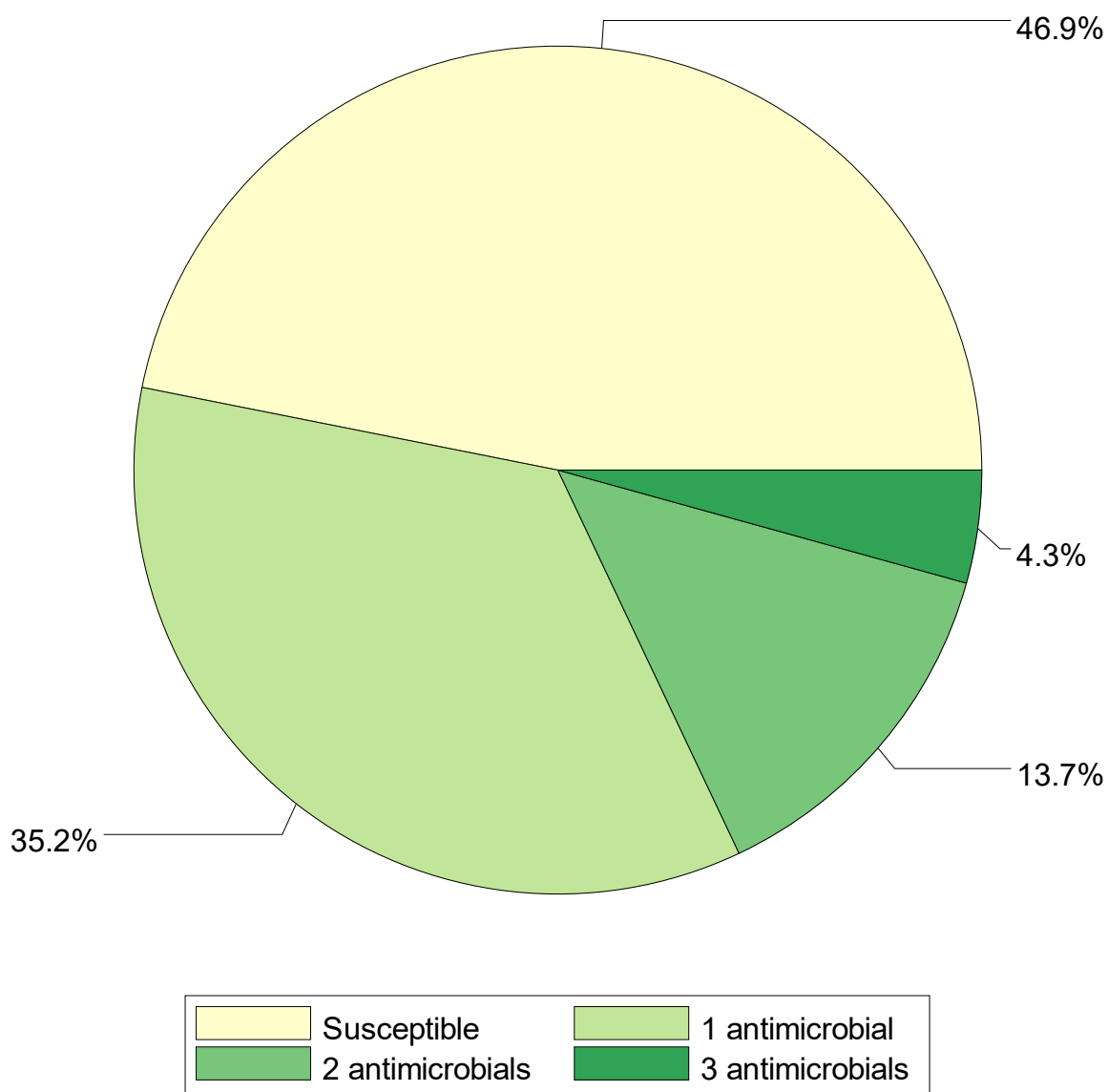
Primary Treatment	Count	Percentage
Ceftriaxone 250 mg	58	23.2
Ceftriaxone 500 mg	192	76.8

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	77	30.8
Doxycycline/Tetracycline	171	68.4
None/Other	2	0.8

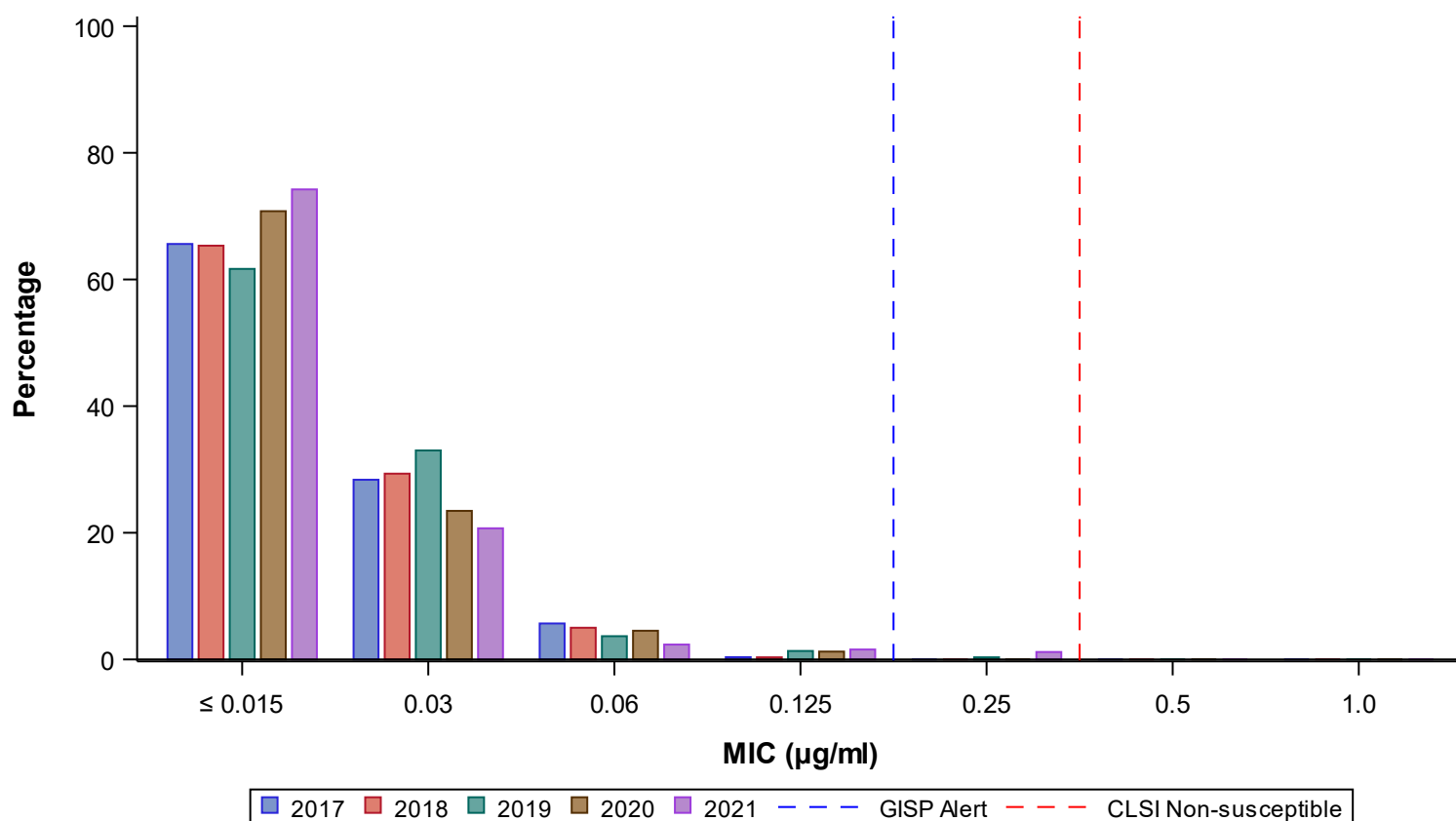
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	120	46.9
1 antimicrobial	90	35.2
2 antimicrobials	35	13.7
3 antimicrobials	11	4.3
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2017-2021



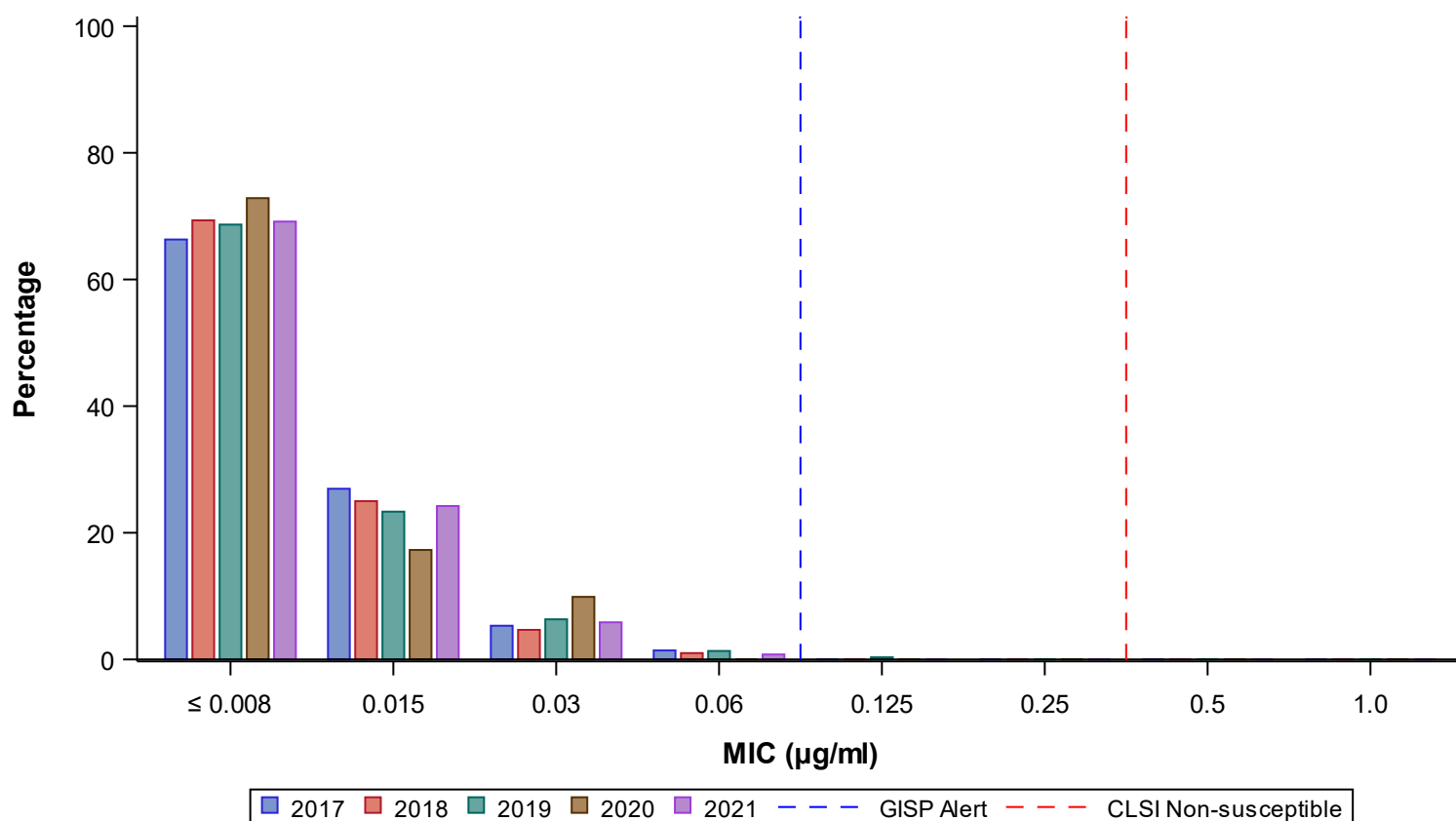
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	185 (65.6)	80 (28.4)	16 (5.7)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	282
2018	196 (65.3)	88 (29.3)	15 (5.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	300
2019	185 (61.7)	99 (33.0)	11 (3.7)	4 (1.3)	1 (0.3)	0 (0.0)	0 (0.0)	300
2020	172 (70.8)	57 (23.5)	11 (4.5)	3 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	243
2021	190 (74.2)	53 (20.7)	6 (2.3)	4 (1.6)	3 (1.2)	0 (0.0)	0 (0.0)	256

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	187 (66.3)	76 (27.0)	15 (5.3)	4 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	282
2018	208 (69.3)	75 (25.0)	14 (4.7)	3 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2019	206 (68.7)	70 (23.3)	19 (6.3)	4 (1.3)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	300
2020	177 (72.8)	42 (17.3)	24 (9.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	243
2021	177 (69.1)	62 (24.2)	15 (5.9)	2 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	256

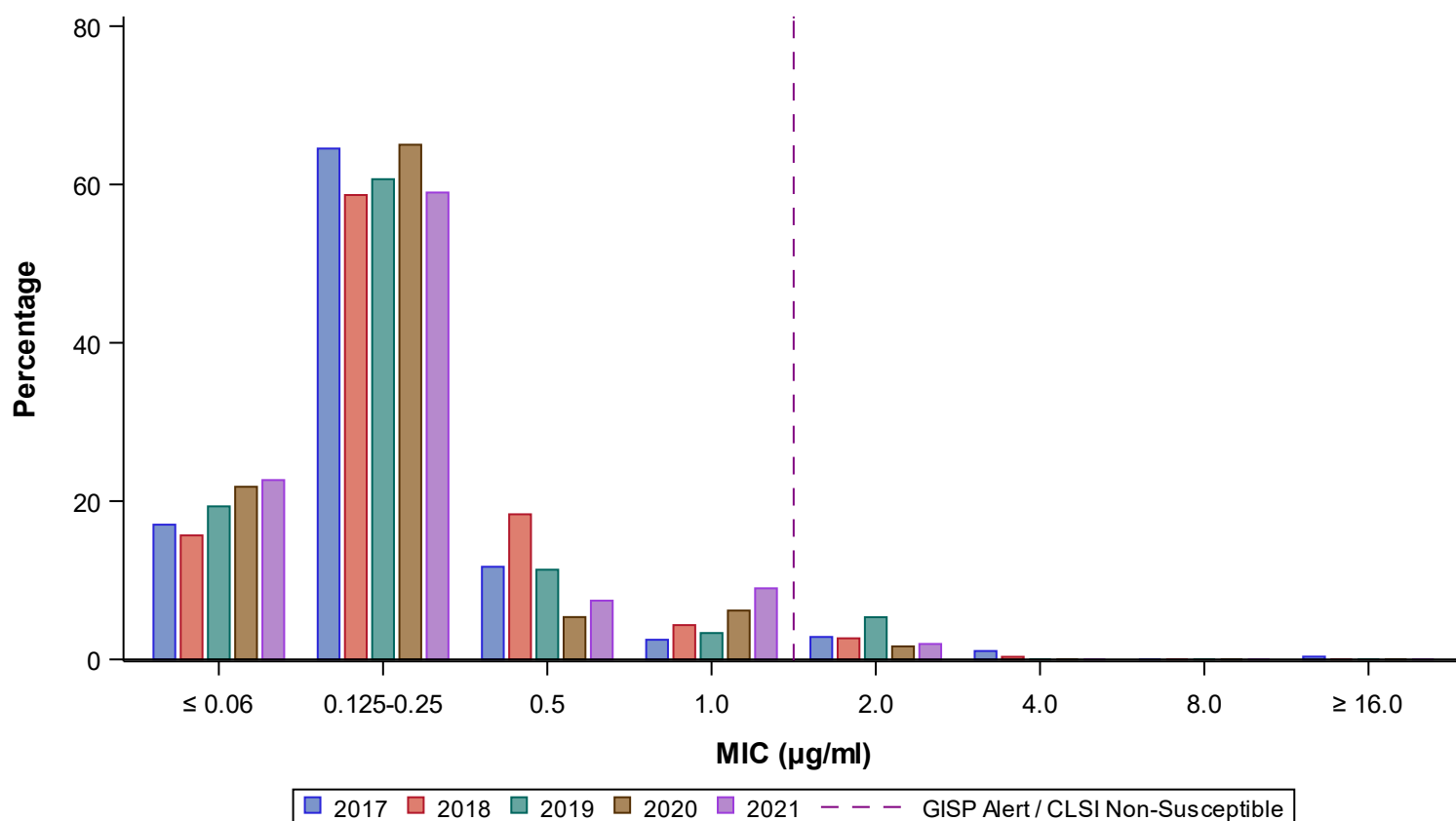
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	48 (17.0)	182 (64.5)	33 (11.7)	7 (2.5)	8 (2.8)	3 (1.1)	0 (0.0)	1 (0.4)	282
2018	47 (15.7)	176 (58.7)	55 (18.3)	13 (4.3)	8 (2.7)	1 (0.3)	0 (0.0)	0 (0.0)	300
2019	58 (19.3)	182 (60.7)	34 (11.3)	10 (3.3)	16 (5.3)	0 (0.0)	0 (0.0)	0 (0.0)	300
2020	53 (21.8)	158 (65.0)	13 (5.3)	15 (6.2)	4 (1.6)	0 (0.0)	0 (0.0)	0 (0.0)	243
2021	58 (22.7)	151 (59.0)	19 (7.4)	23 (9.0)	5 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	256

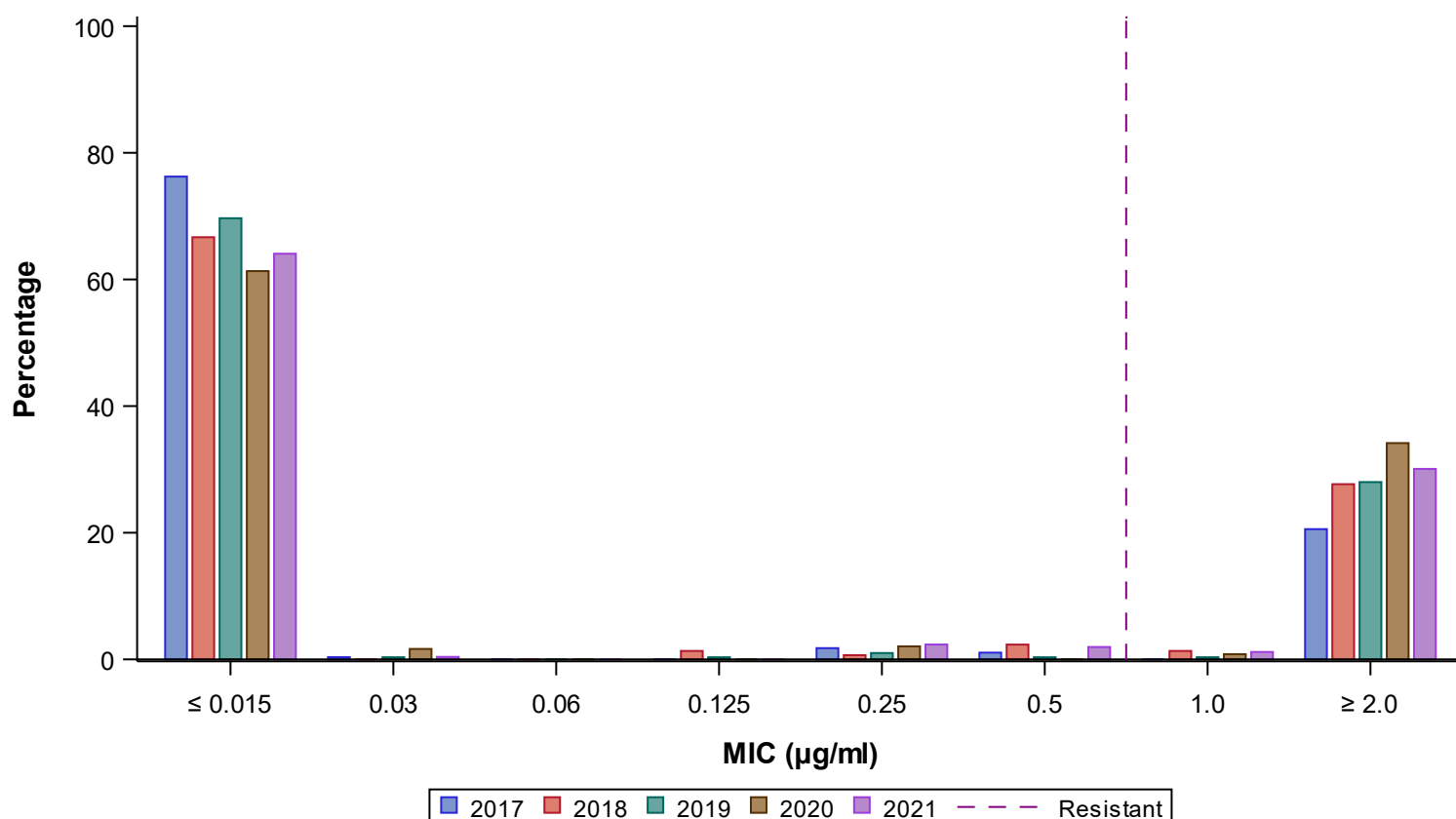
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

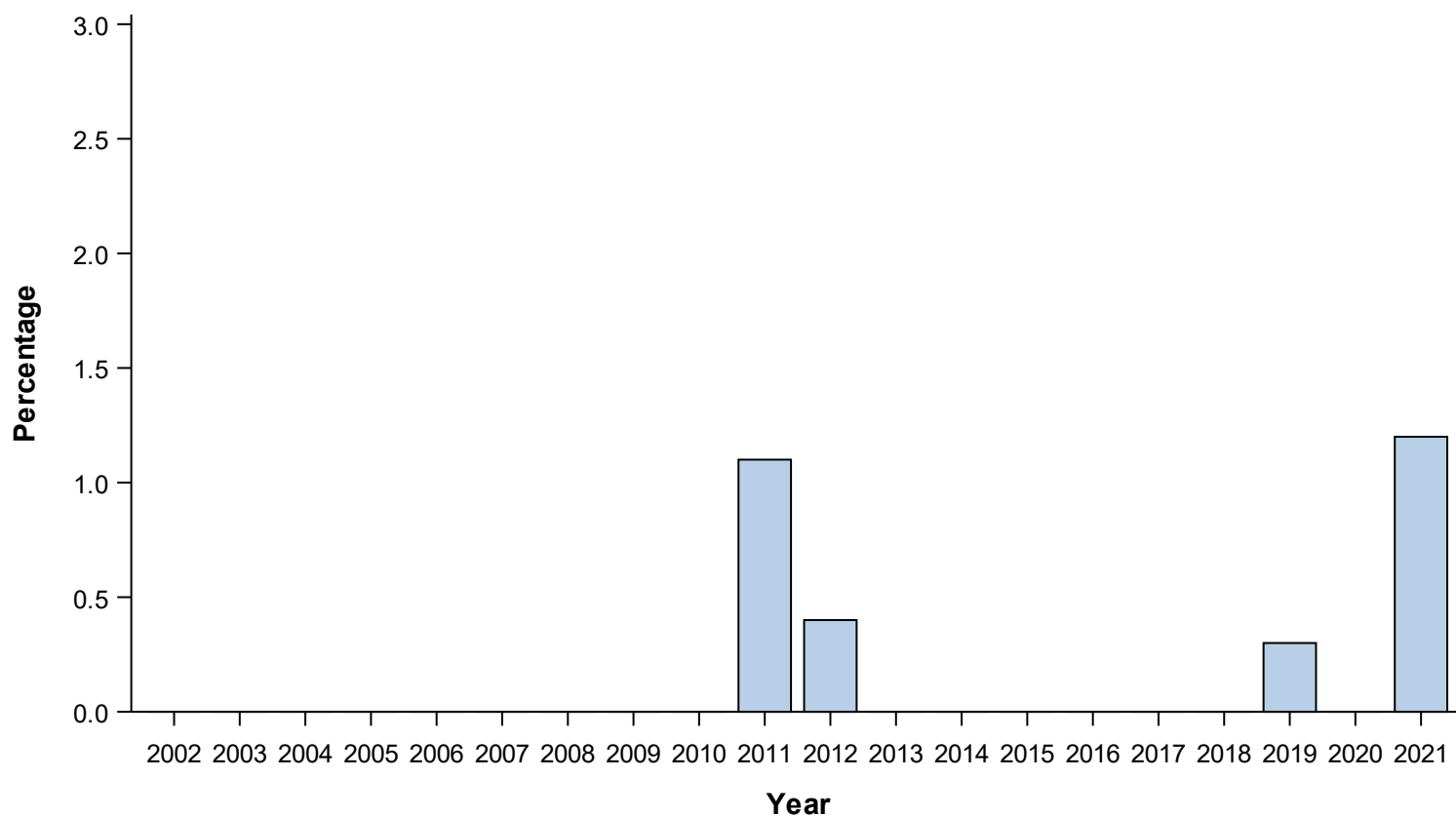
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	215 (76.2)	1 (0.4)	0 (0.0)	0 (0.0)	5 (1.8)	3 (1.1)	0 (0.0)	58 (20.6)	282
2018	200 (66.7)	0 (0.0)	0 (0.0)	4 (1.3)	2 (0.7)	7 (2.3)	4 (1.3)	83 (27.7)	300
2019	209 (69.7)	1 (0.3)	0 (0.0)	1 (0.3)	3 (1.0)	1 (0.3)	1 (0.3)	84 (28.0)	300
2020	149 (61.3)	4 (1.6)	0 (0.0)	0 (0.0)	5 (2.1)	0 (0.0)	2 (0.8)	83 (34.2)	243
2021	164 (64.1)	1 (0.4)	0 (0.0)	0 (0.0)	6 (2.3)	5 (2.0)	3 (1.2)	77 (30.1)	256

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2002-2021

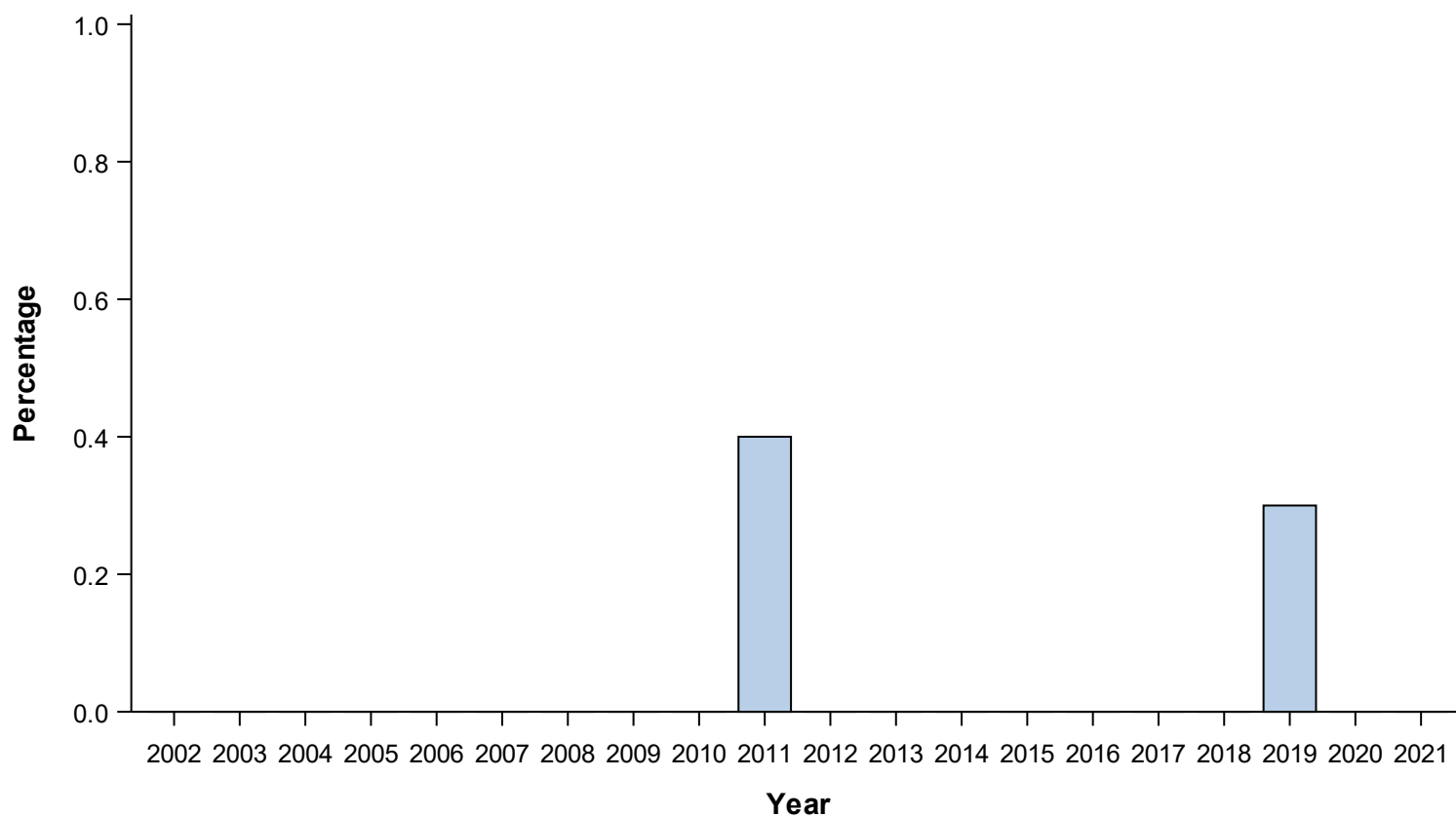


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (1.1)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.3)	0 (0.0)	3 (1.2)

Note: Cefixime elevated MIC $\geq$ 0.25 μ g/ml.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2002-2021

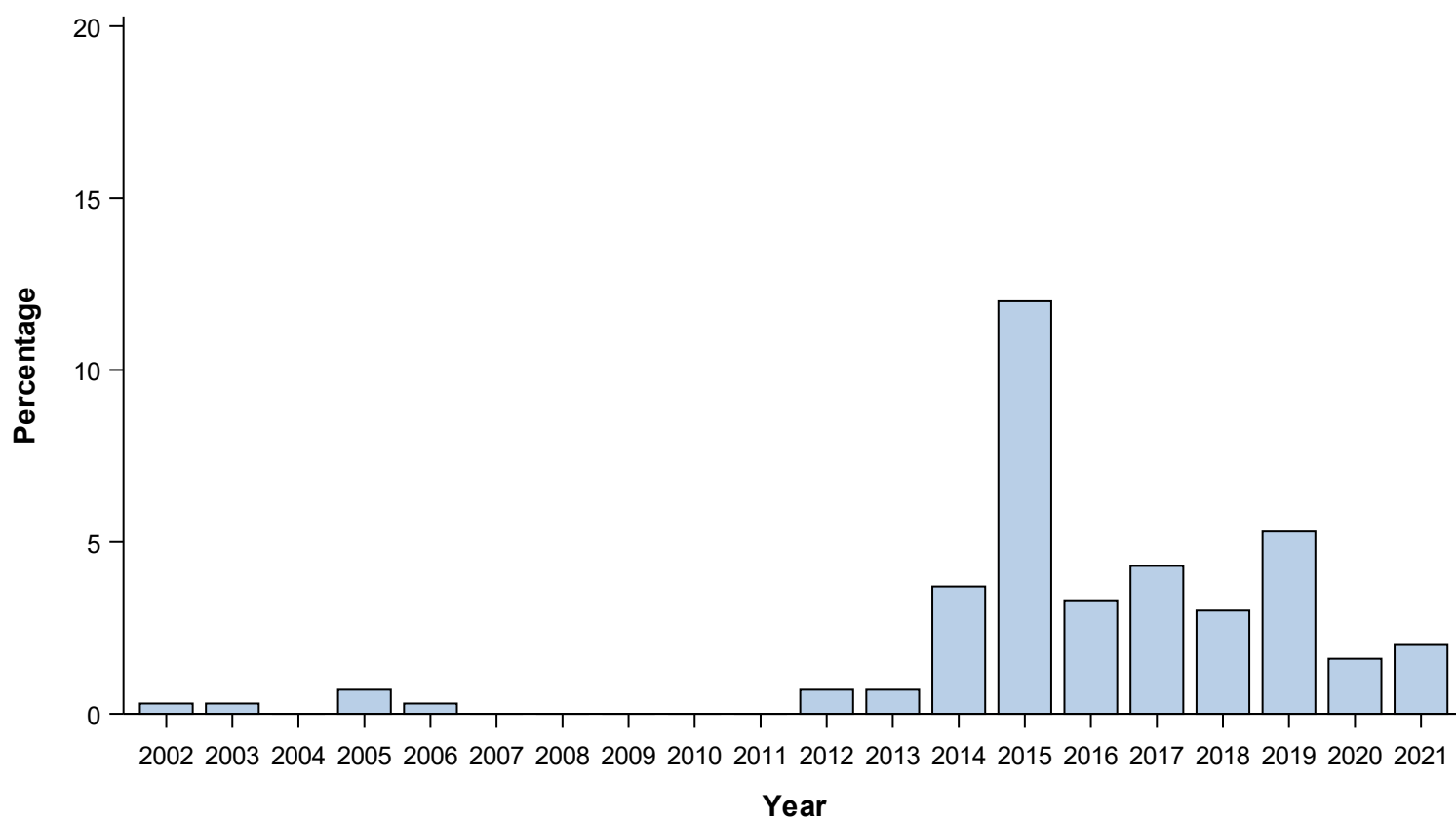


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Dallas, Texas, 2002-2021

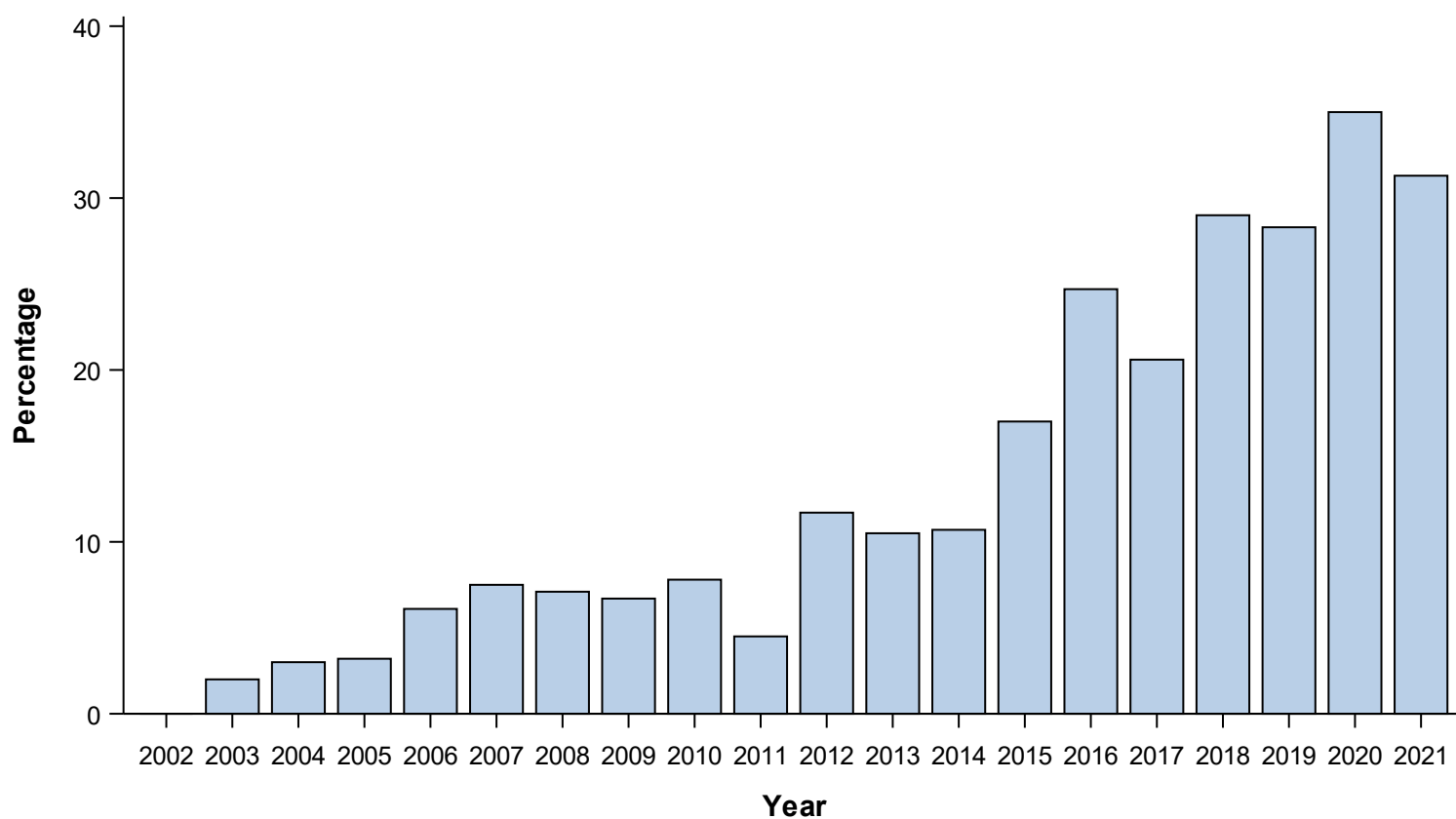


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (0.3)	1 (0.3)	0 (0.0)	2 (0.7)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
2 (0.7)	2 (0.7)	11 (3.7)	34 (12.0)	10 (3.3)	12 (4.3)	9 (3.0)	16 (5.3)	4 (1.6)	5 (2.0)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Dallas, Texas, 2002-2021

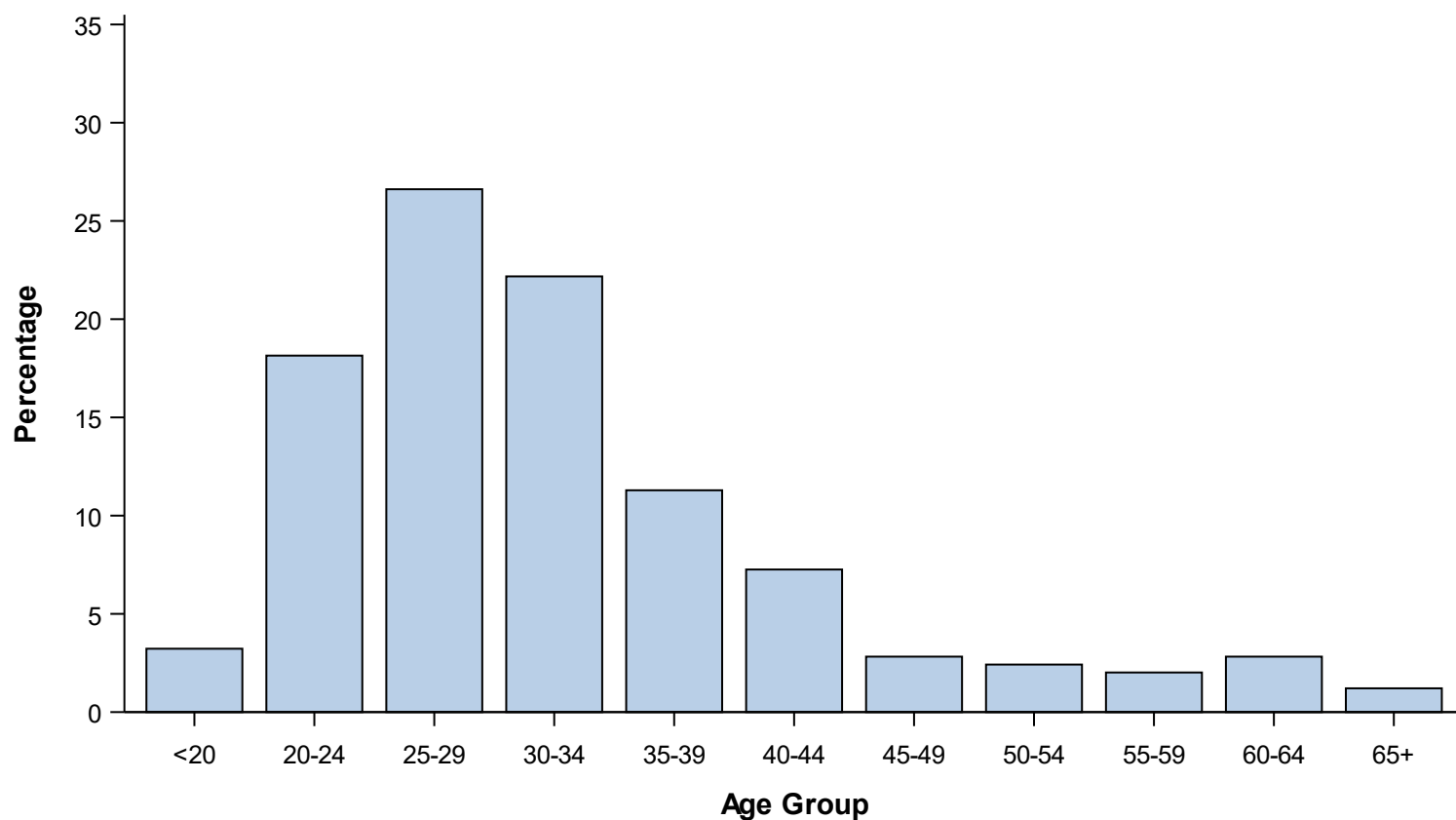


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	6 (2.0)	9 (3.0)	9 (3.2)	18 (6.1)	22 (7.5)	21 (7.1)	20 (6.7)	23 (7.8)	12 (4.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
33 (11.7)	30 (10.5)	32 (10.7)	48 (17.0)	74 (24.7)	58 (20.6)	87 (29.0)	85 (28.3)	85 (35.0)	80 (31.3)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

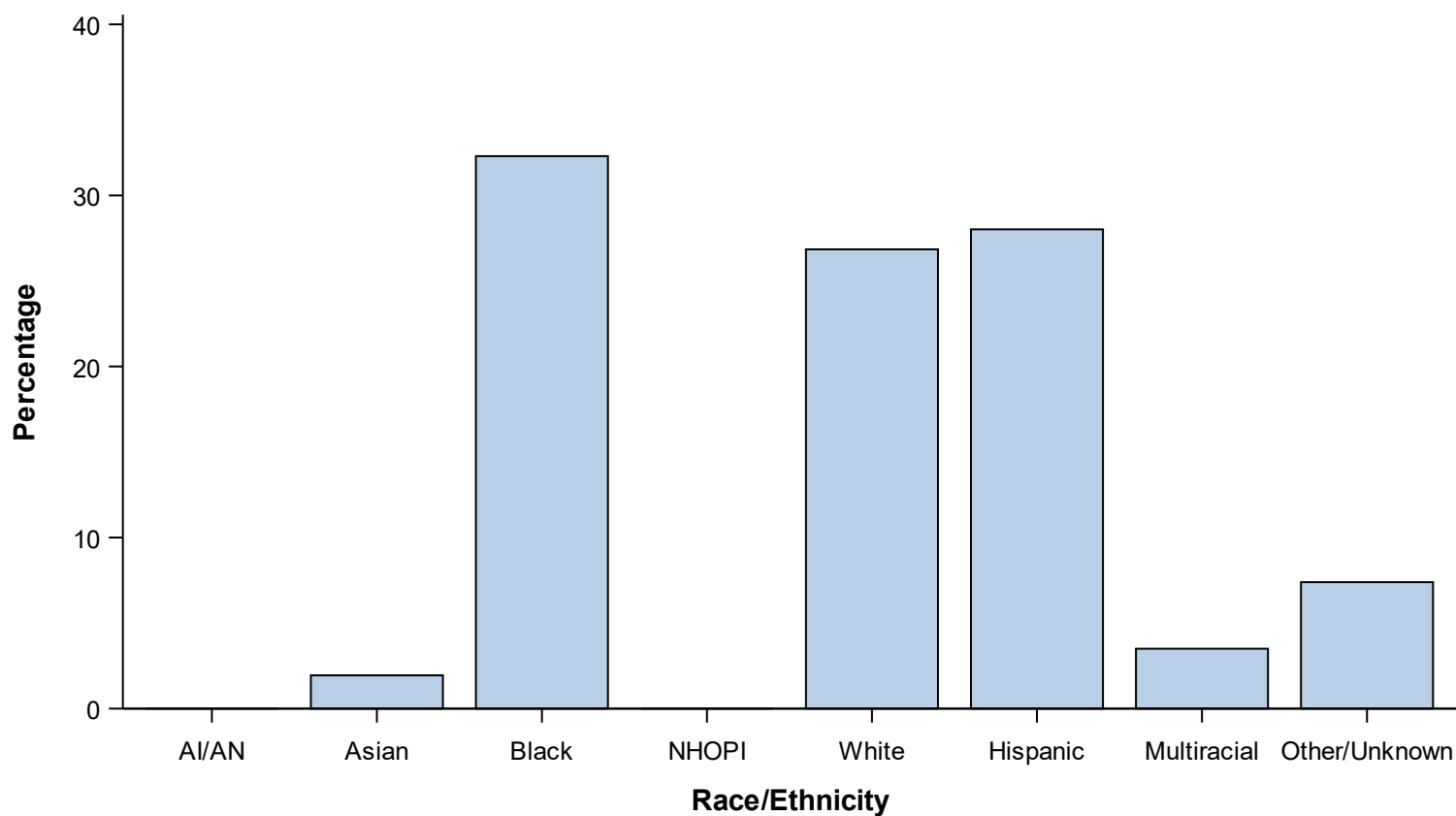
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
8 (3.2)	45 (18.1)	66 (26.6)	55 (22.2)	28 (11.3)	18 (7.3)	7 (2.8)	6 (2.4)	5 (2.0)	7 (2.8)	3 (1.2)	248

Note: Cases with unknown age were excluded.

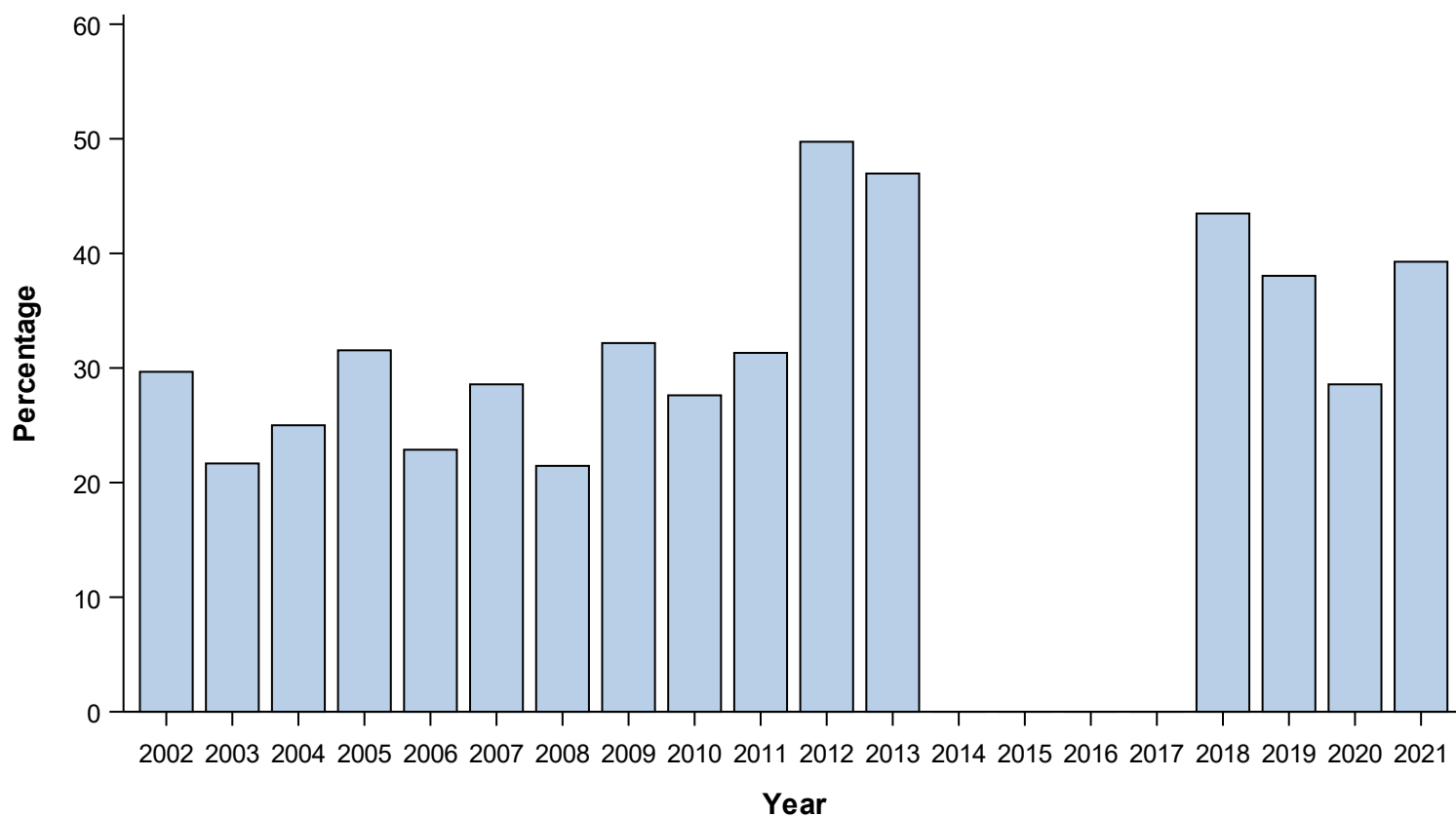
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	5 (1.9)	83 (32.3)	0 (0.0)	69 (26.8)	72 (28.0)	9 (3.5)	19 (7.4)	257

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Denver, Colorado, 2002-2021

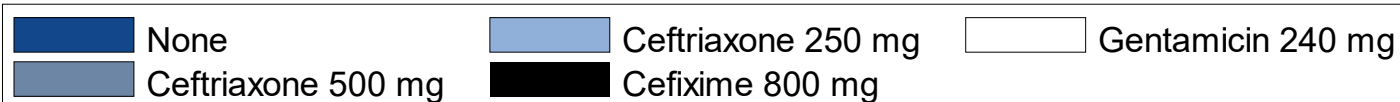
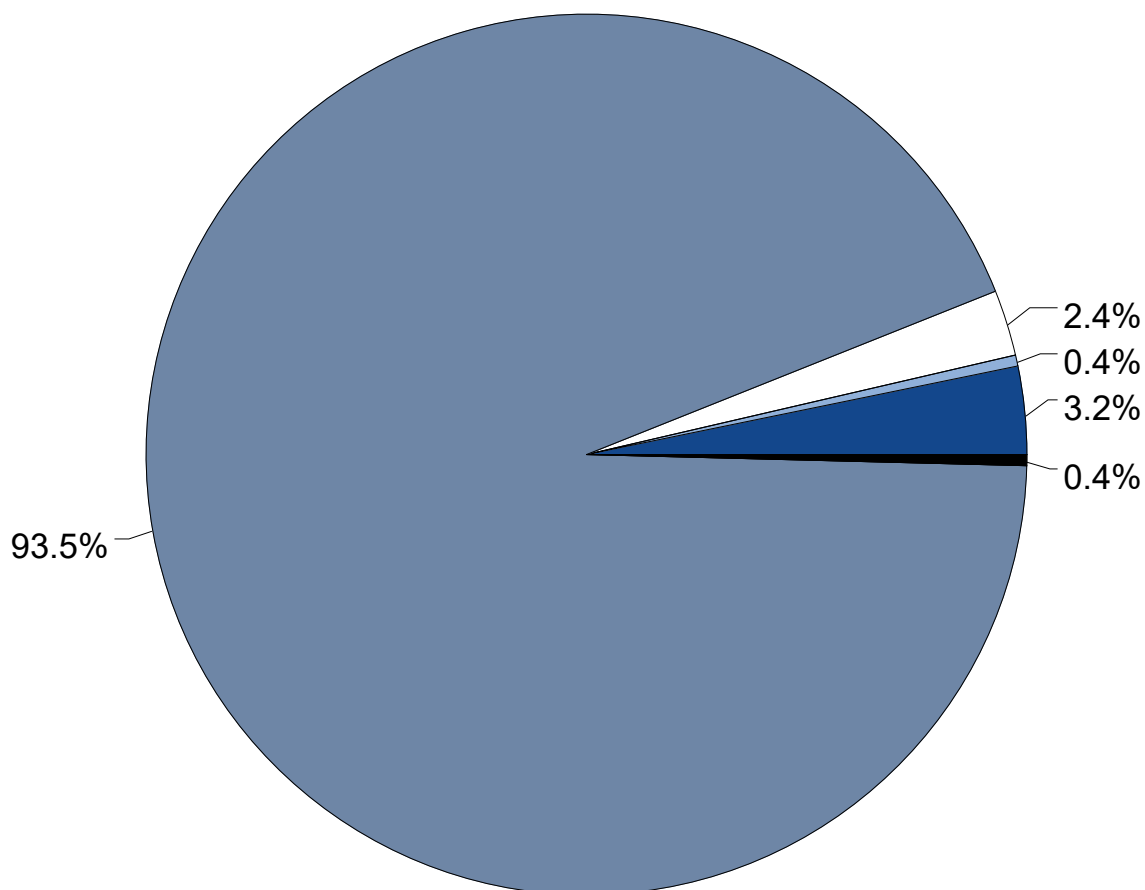


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
89 (29.7)	65 (21.7)	75 (25.0)	88 (31.5)	67 (22.9)	62 (28.6)	53 (21.5)	74 (32.2)	66 (27.6)	57 (31.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
96 (49.7)	93 (47.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	50 (43.5)	105 (38.0)	70 (28.6)	97 (39.3)

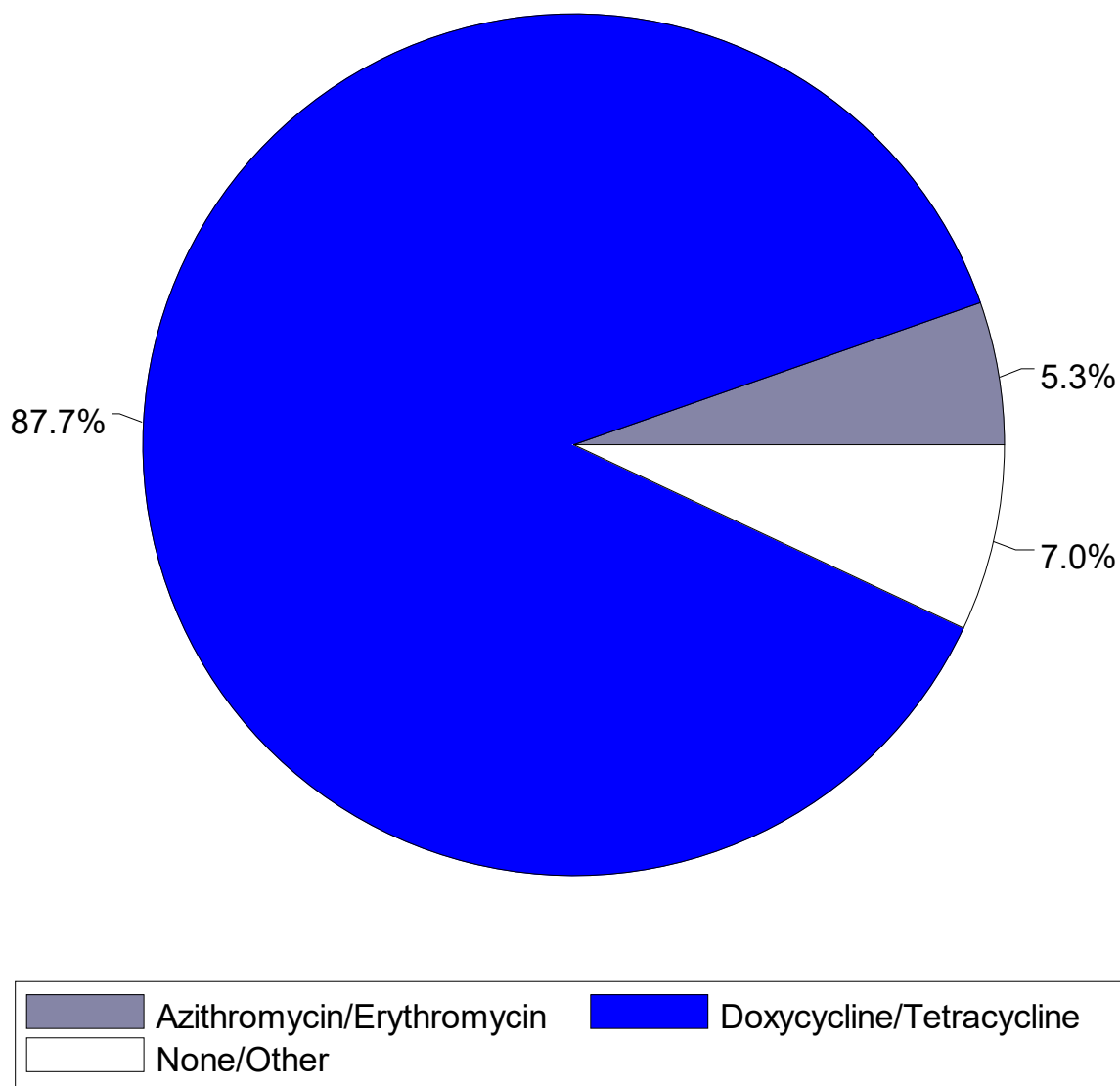
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.
Site participated in GISP during 2002-2013 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Denver, Colorado, 2021



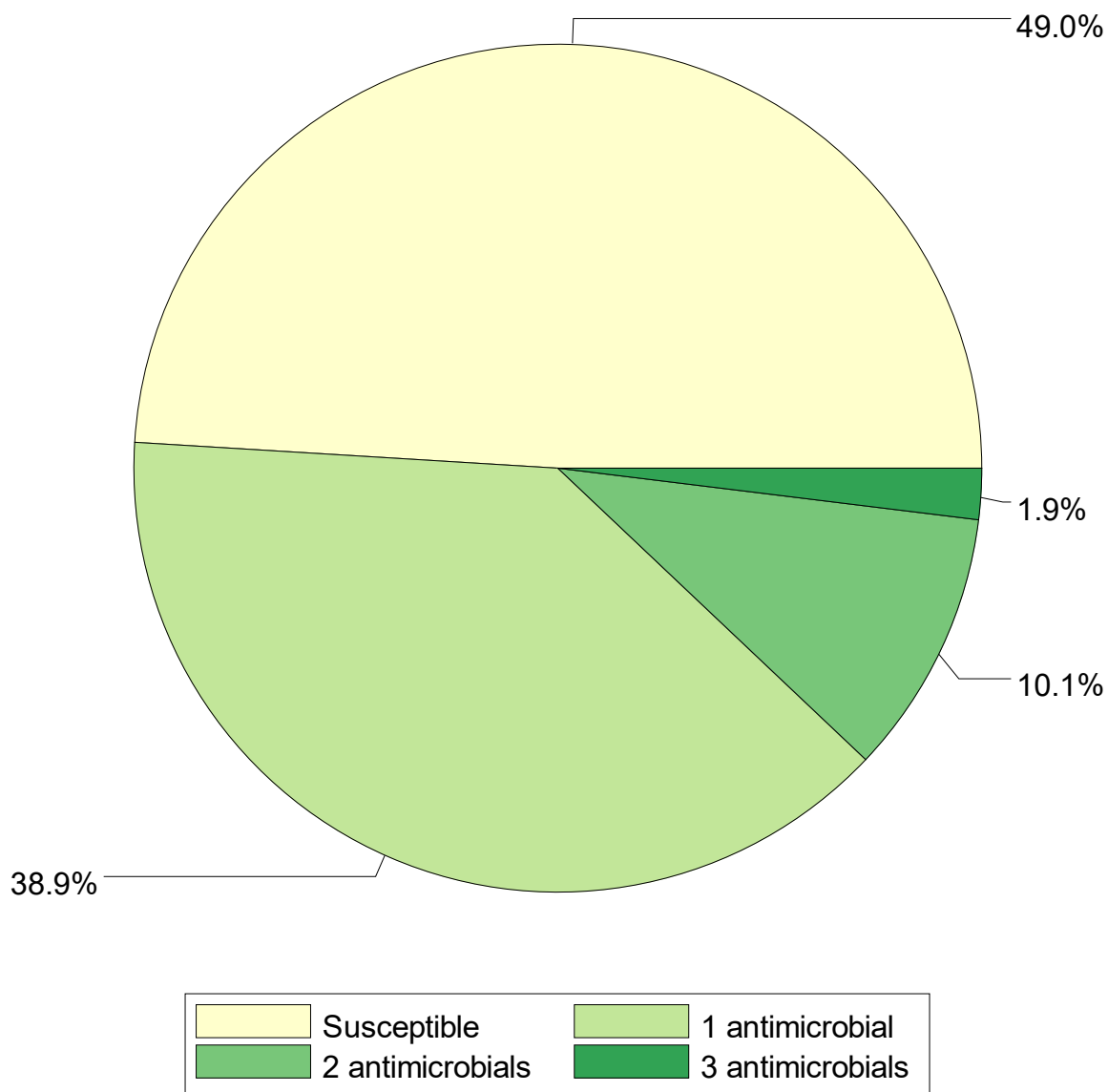
Primary Treatment	Count	Percentage
None	8	3.2
Ceftriaxone 250 mg	1	0.4
Gentamicin 240 mg	6	2.4
Ceftriaxone 500 mg	232	93.5
Cefixime 800 mg	1	0.4

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	13	5.3
Doxycycline/Tetracycline	213	87.7
None/Other	17	7.0

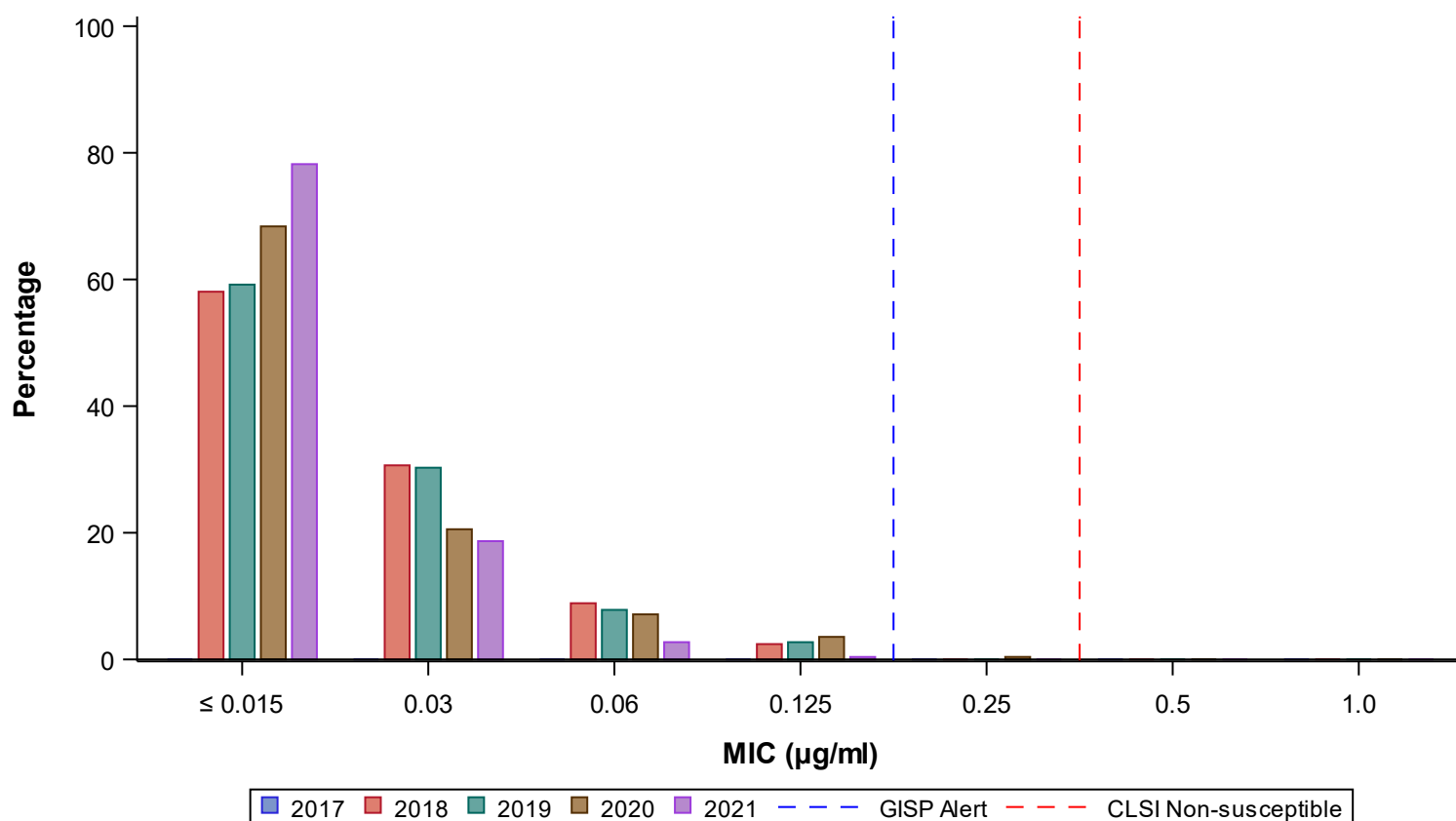
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	126	49.0
1 antimicrobial	100	38.9
2 antimicrobials	26	10.1
3 antimicrobials	5	1.9
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	72 (58.1)	38 (30.6)	11 (8.9)	3 (2.4)	0 (0.0)	0 (0.0)	0 (0.0)	124
2019	174 (59.2)	89 (30.3)	23 (7.8)	8 (2.7)	0 (0.0)	0 (0.0)	0 (0.0)	294
2020	173 (68.4)	52 (20.6)	18 (7.1)	9 (3.6)	1 (0.4)	0 (0.0)	0 (0.0)	253
2021	201 (78.2)	48 (18.7)	7 (2.7)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	257

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

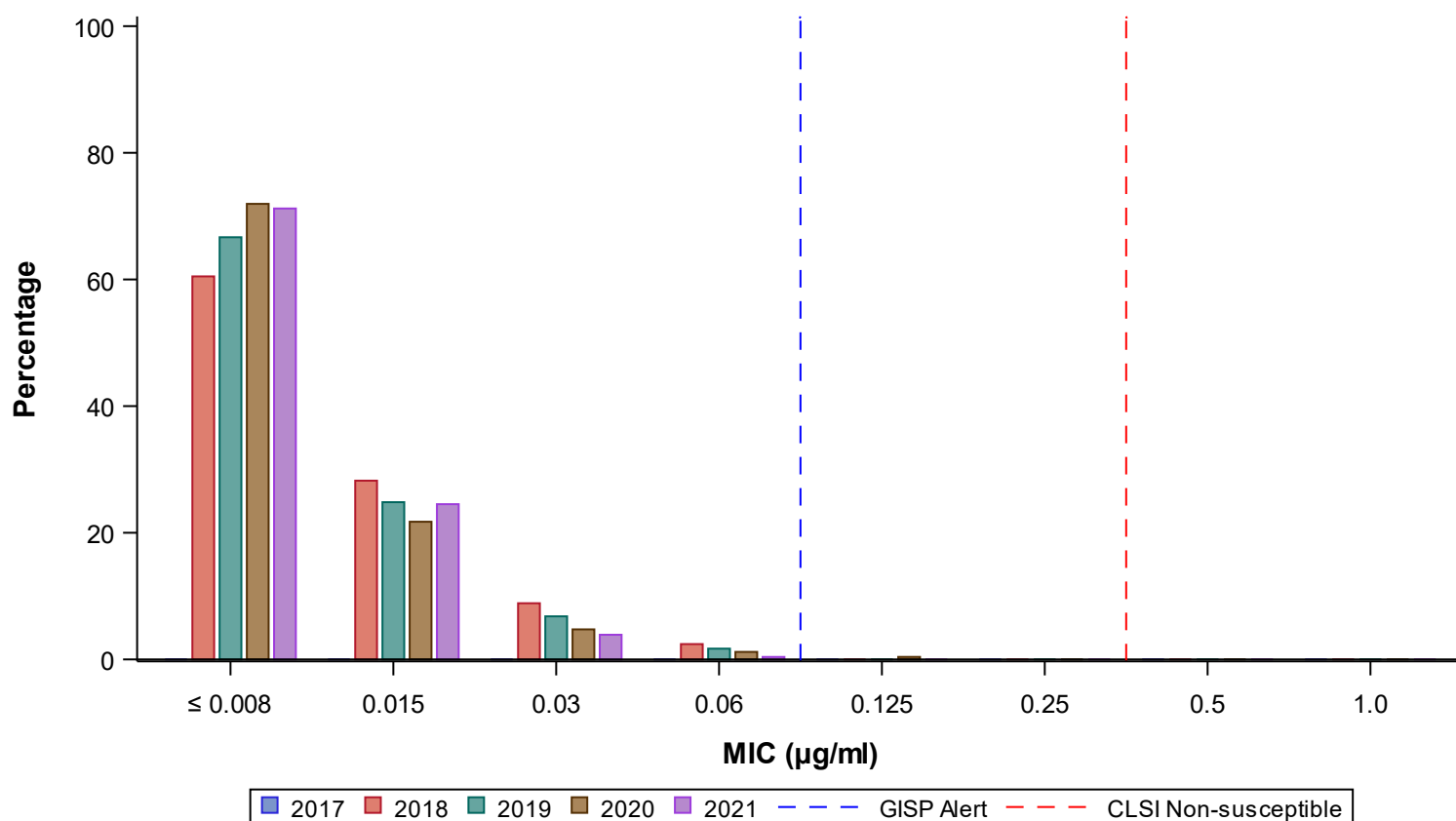
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	75 (60.5)	35 (28.2)	11 (8.9)	3 (2.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	124
2019	196 (66.7)	73 (24.8)	20 (6.8)	5 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	294
2020	182 (71.9)	55 (21.7)	12 (4.7)	3 (1.2)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	253
2021	183 (71.2)	63 (24.5)	10 (3.9)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	257

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

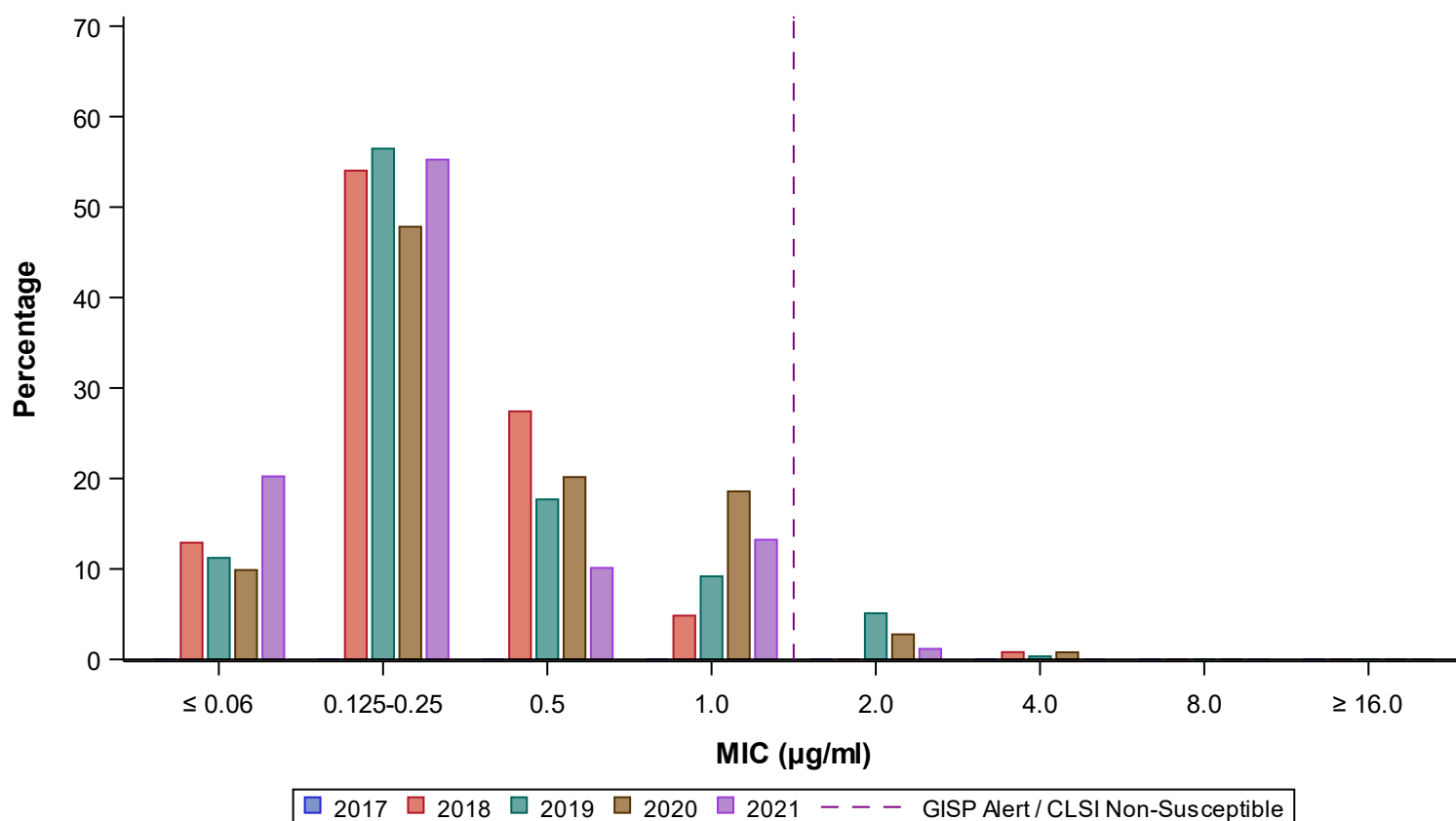
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	16 (12.9)	67 (54.0)	34 (27.4)	6 (4.8)	0 (0.0)	1 (0.8)	0 (0.0)	0 (0.0)	124
2019	33 (11.2)	166 (56.5)	52 (17.7)	27 (9.2)	15 (5.1)	1 (0.3)	0 (0.0)	0 (0.0)	294
2020	25 (9.9)	121 (47.8)	51 (20.2)	47 (18.6)	7 (2.8)	2 (0.8)	0 (0.0)	0 (0.0)	253
2021	52 (20.2)	142 (55.3)	26 (10.1)	34 (13.2)	3 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	257

GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

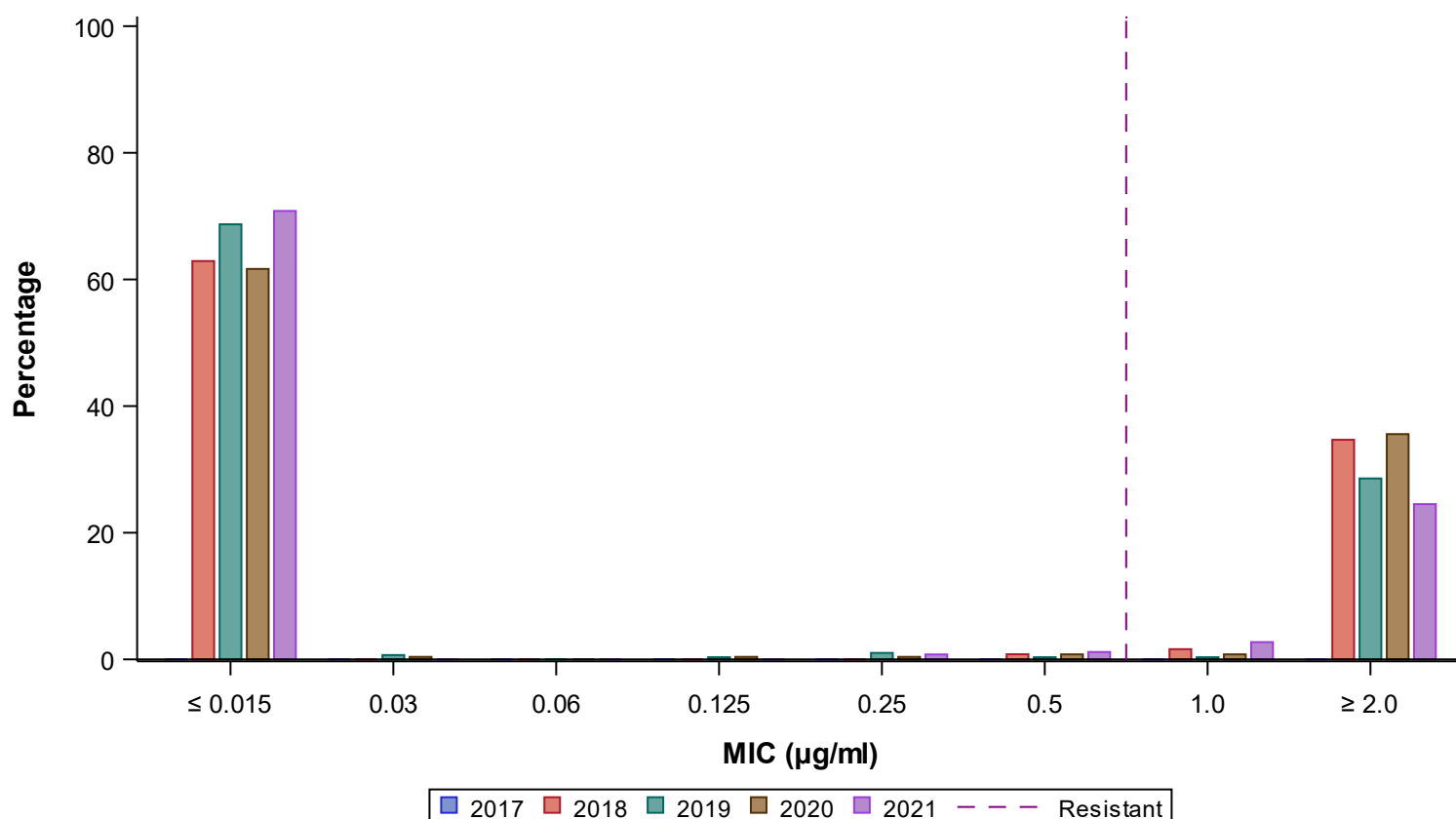
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2017-2021

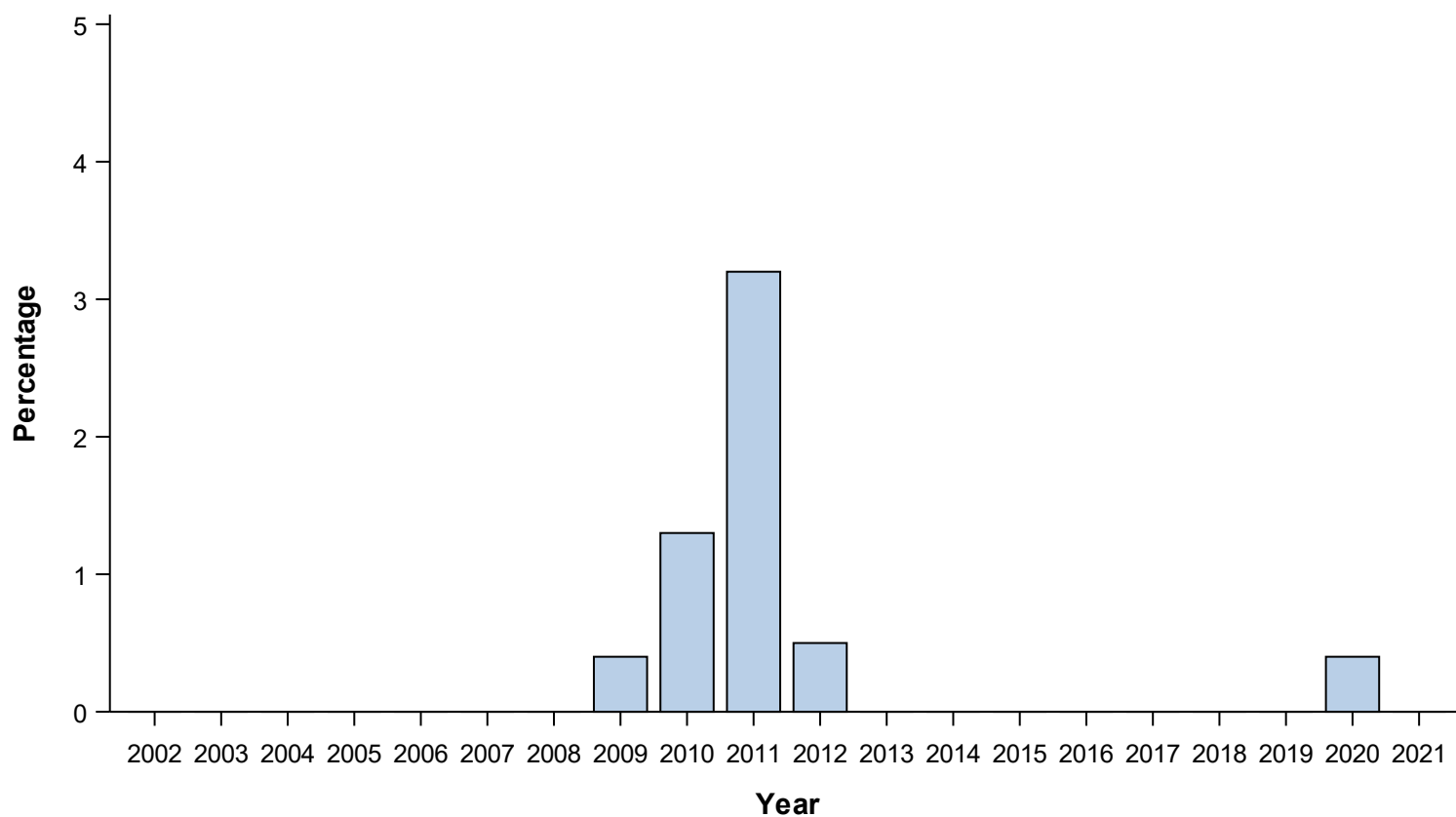


Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	78 (62.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	2 (1.6)	43 (34.7)	124
2019	202 (68.7)	2 (0.7)	0 (0.0)	1 (0.3)	3 (1.0)	1 (0.3)	1 (0.3)	84 (28.6)	294
2020	156 (61.7)	1 (0.4)	0 (0.0)	1 (0.4)	1 (0.4)	2 (0.8)	2 (0.8)	90 (35.6)	253
2021	182 (70.8)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.8)	3 (1.2)	7 (2.7)	63 (24.5)	257

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2002-2021



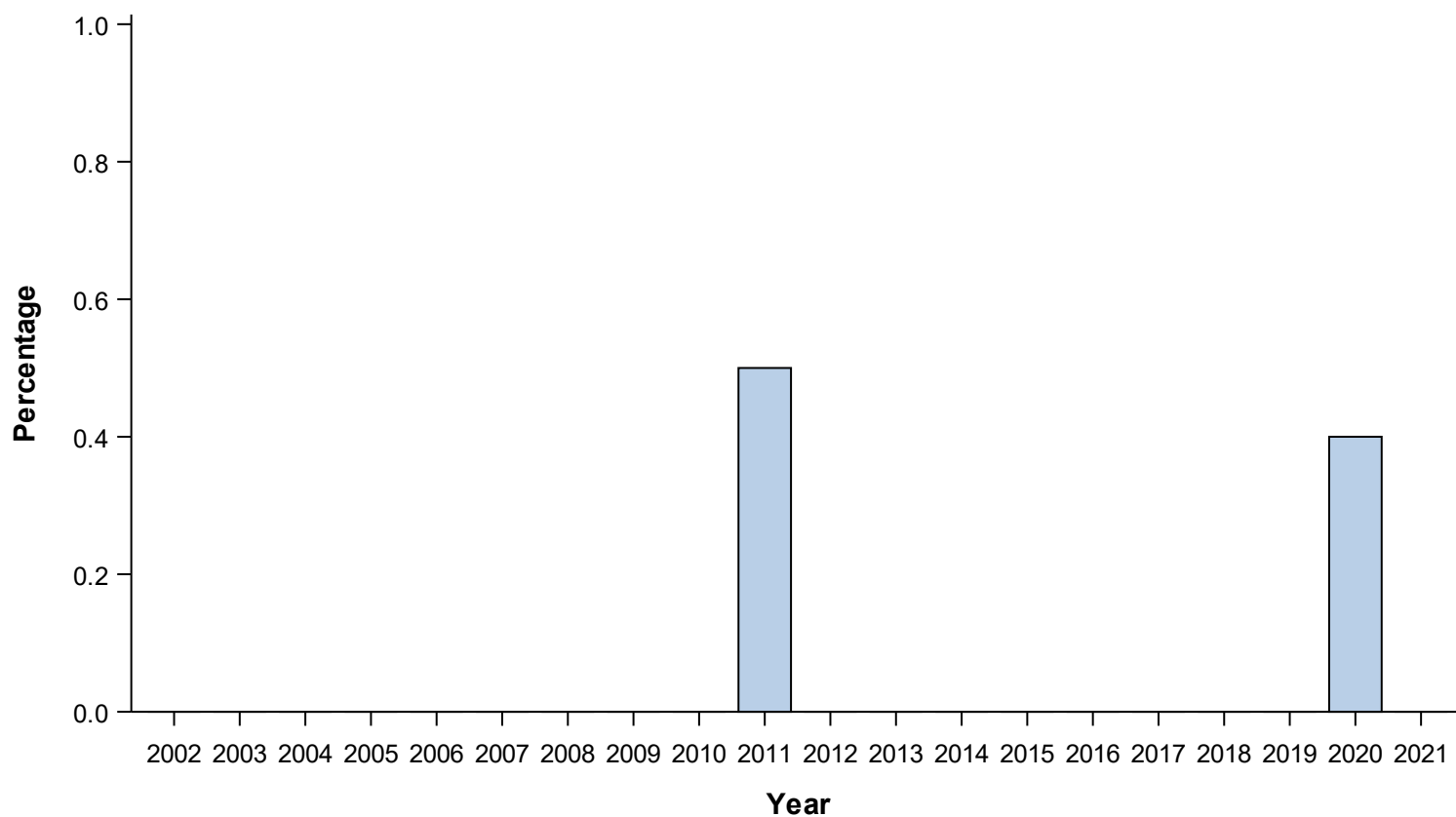
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	3 (1.3)	6 (3.2)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2002-2013 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2002-2021



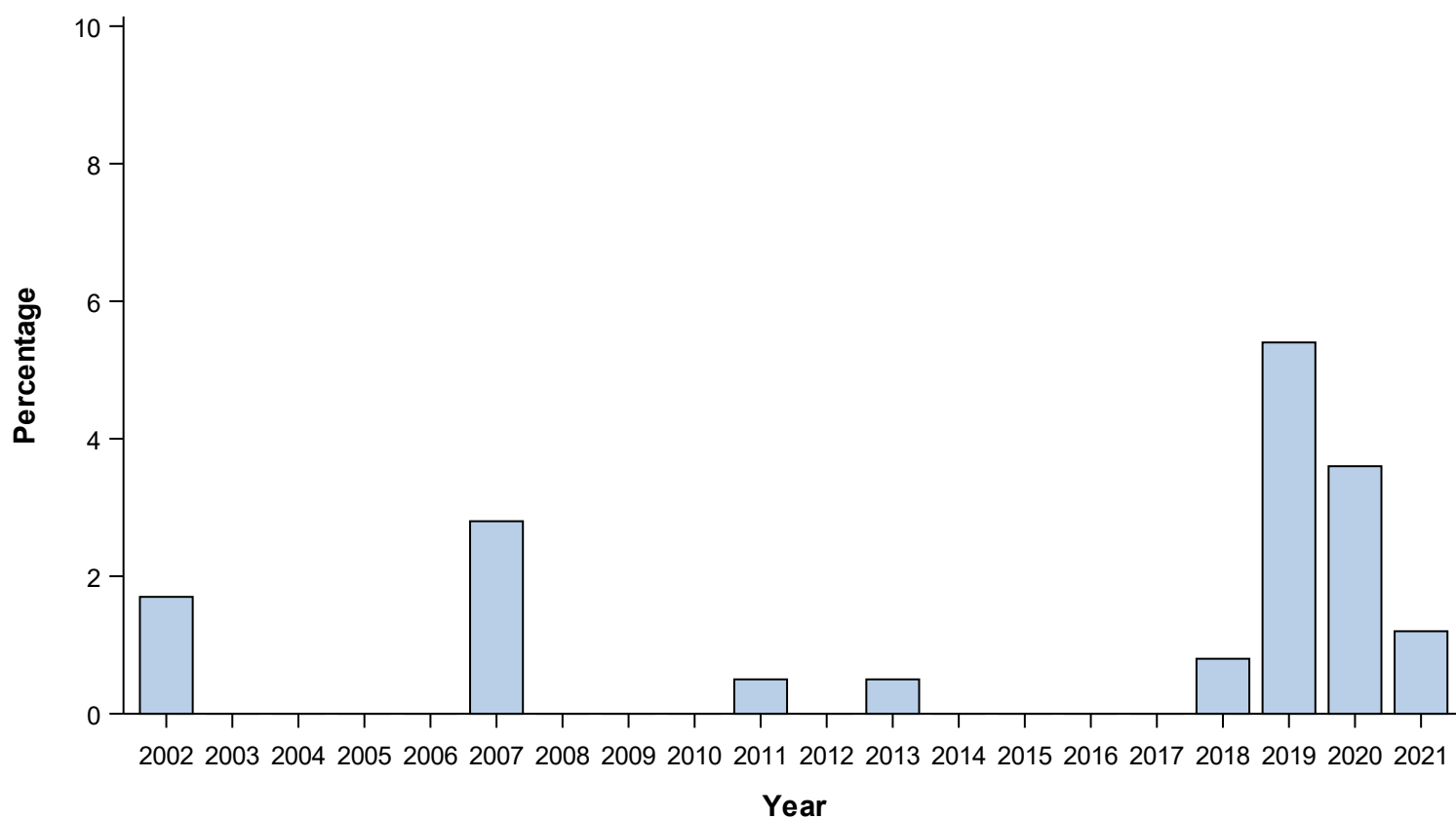
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2002-2013 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Denver, Colorado, 2002-2021



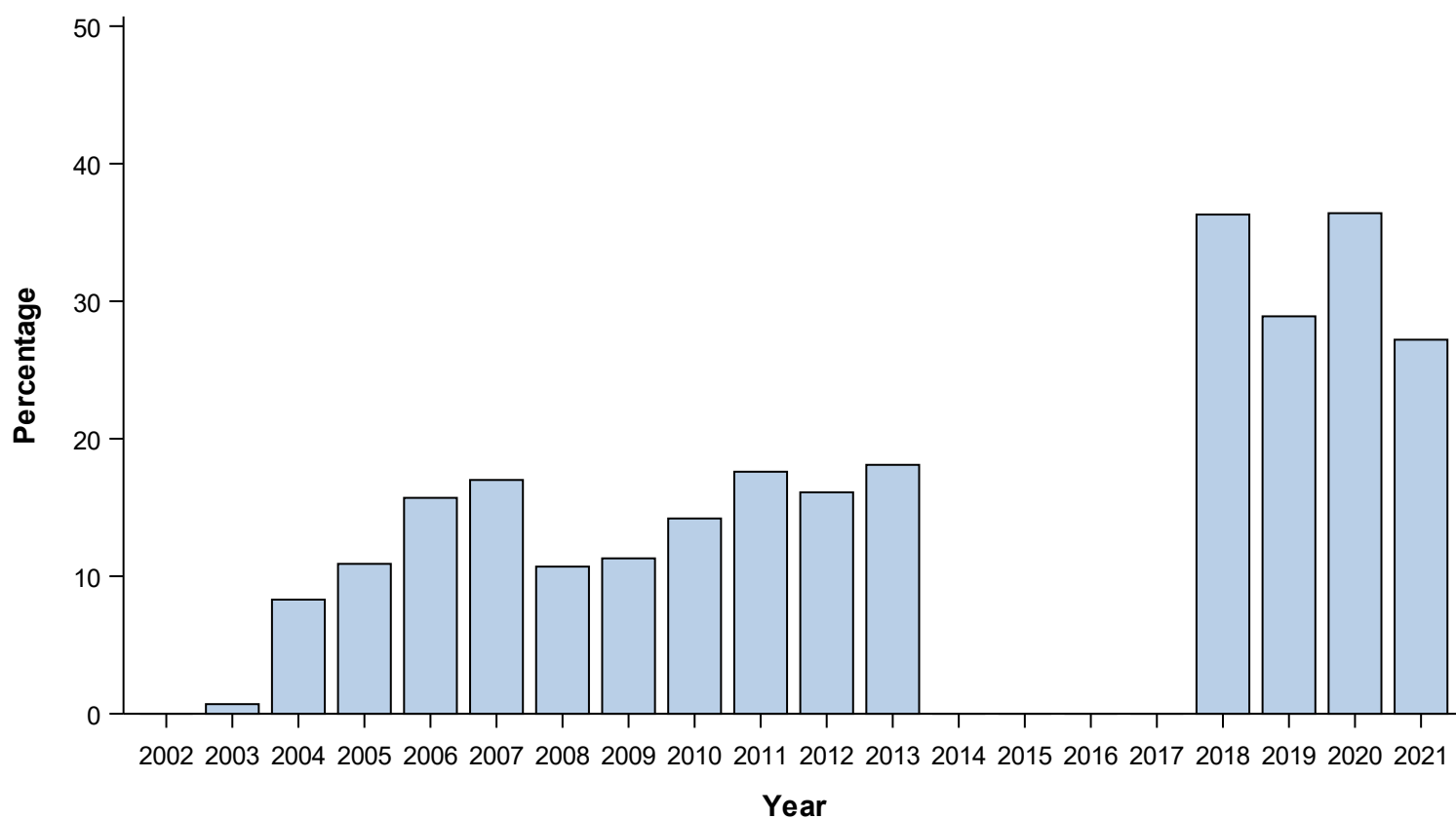
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
5 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	6 (2.8)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	16 (5.4)	9 (3.6)	3 (1.2)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2002-2013 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Denver, Colorado, 2002-2021



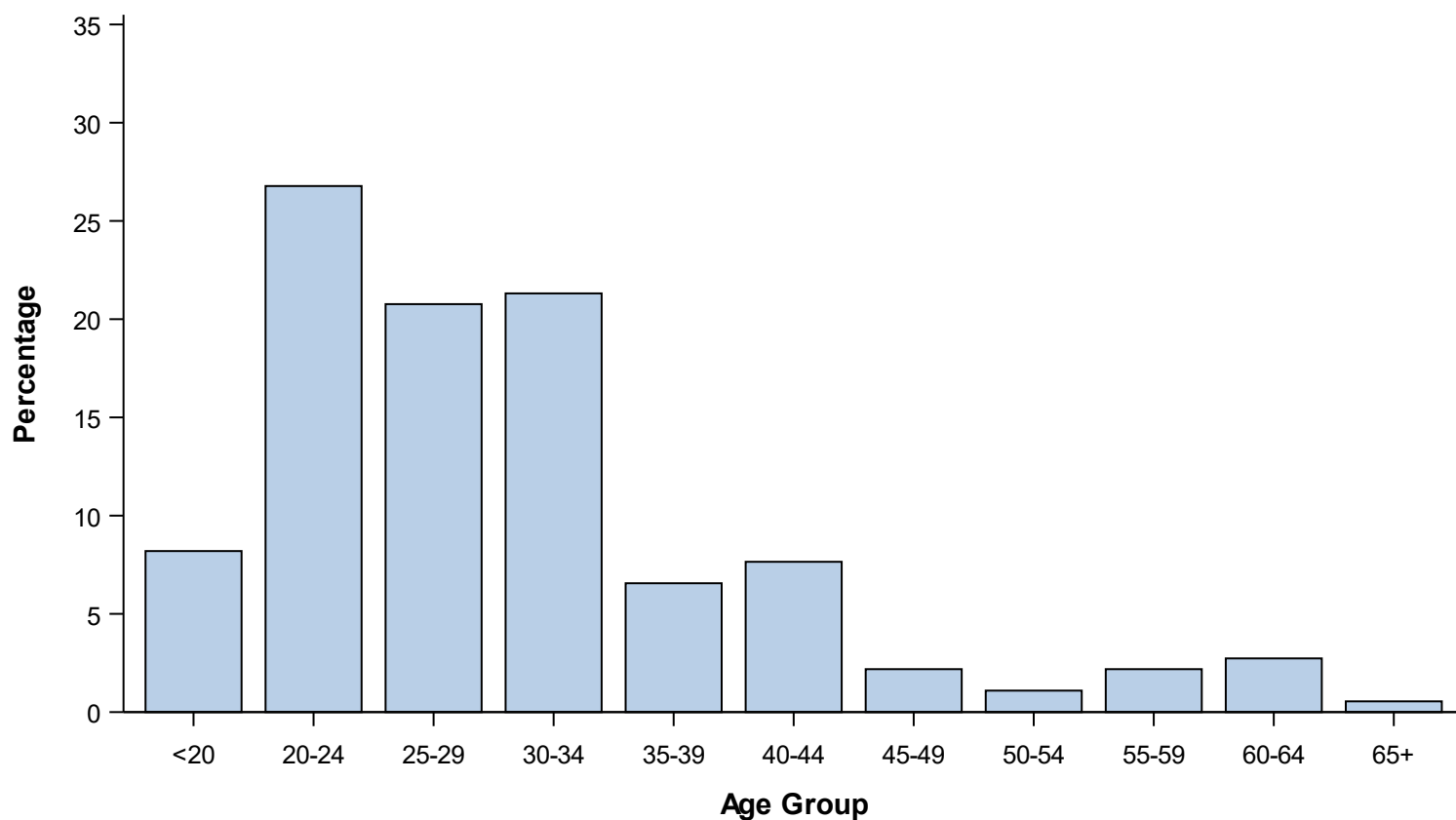
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	2 (0.7)	25 (8.3)	31 (10.9)	46 (15.7)	37 (17.0)	27 (10.7)	26 (11.3)	34 (14.2)	33 (17.6)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
31 (16.1)	36 (18.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	45 (36.3)	85 (28.9)	92 (36.4)	70 (27.2)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2002-2013 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

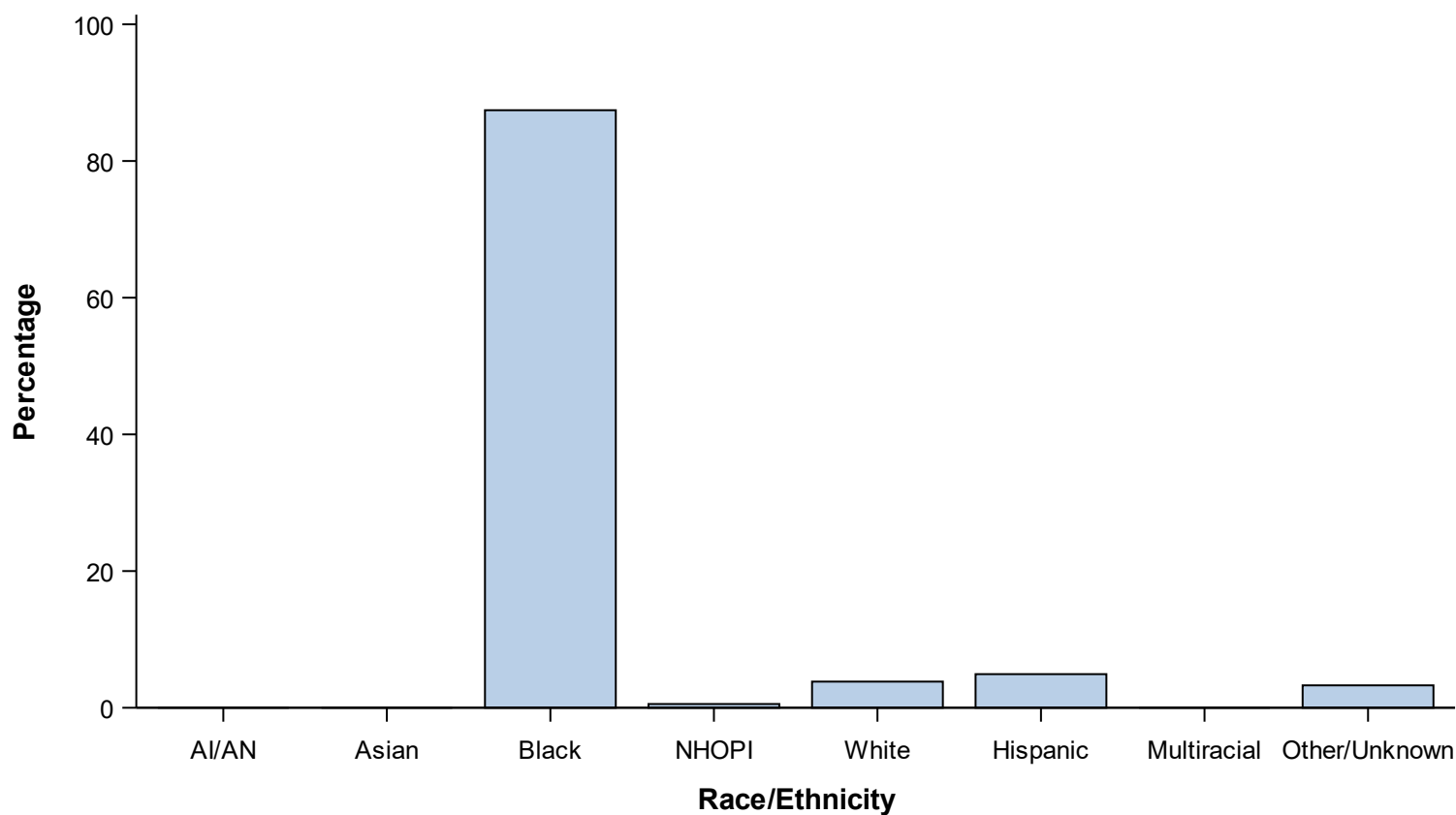
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
15 (8.2)	49 (26.8)	38 (20.8)	39 (21.3)	12 (6.6)	14 (7.7)	4 (2.2)	2 (1.1)	4 (2.2)	5 (2.7)	1 (0.5)	183

Note: Cases with unknown age were excluded.

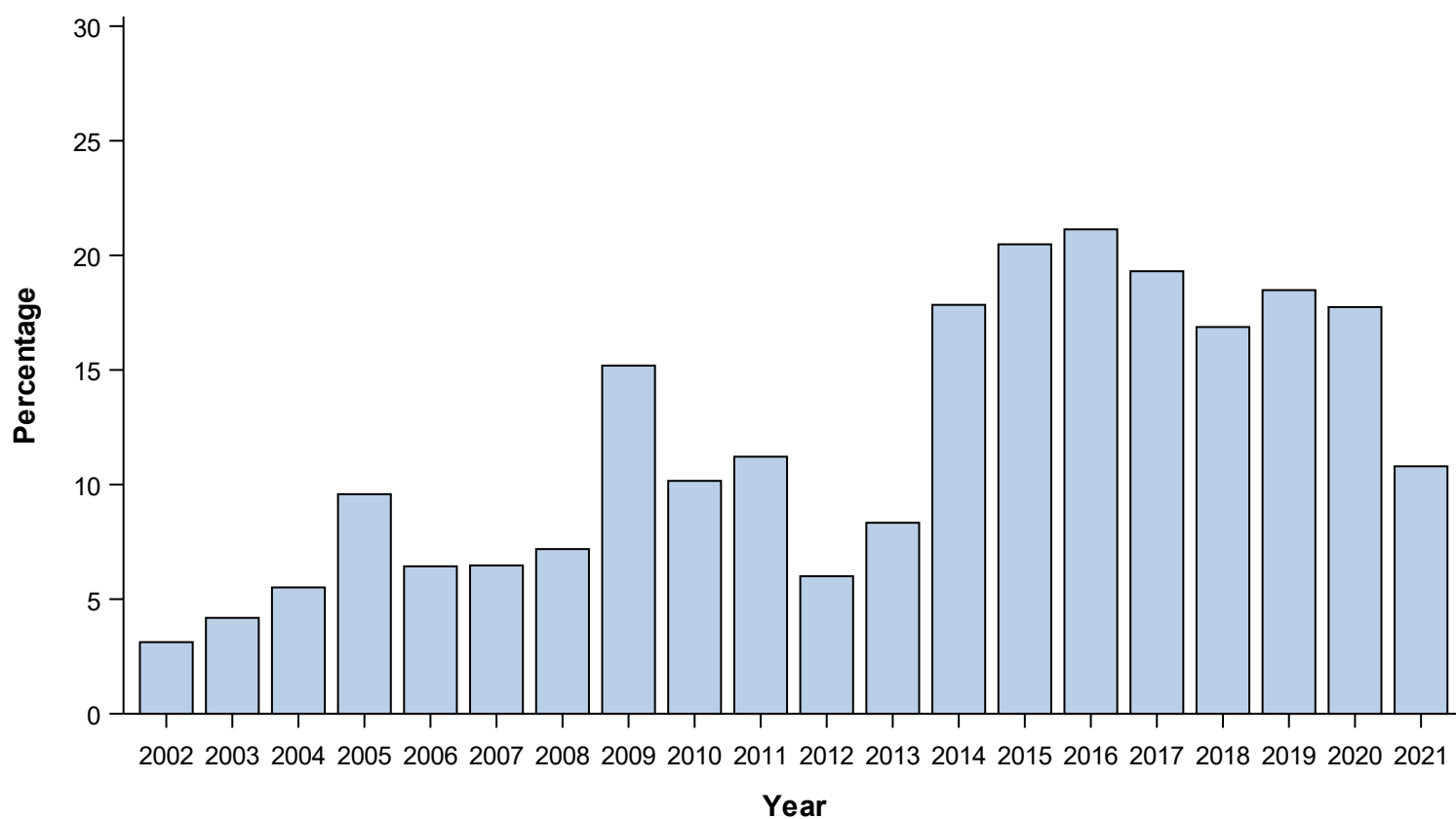
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	160 (87.4)	1 (0.5)	7 (3.8)	9 (4.9)	0 (0.0)	6 (3.3)	183

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Greensboro, North Carolina, 2002-2021

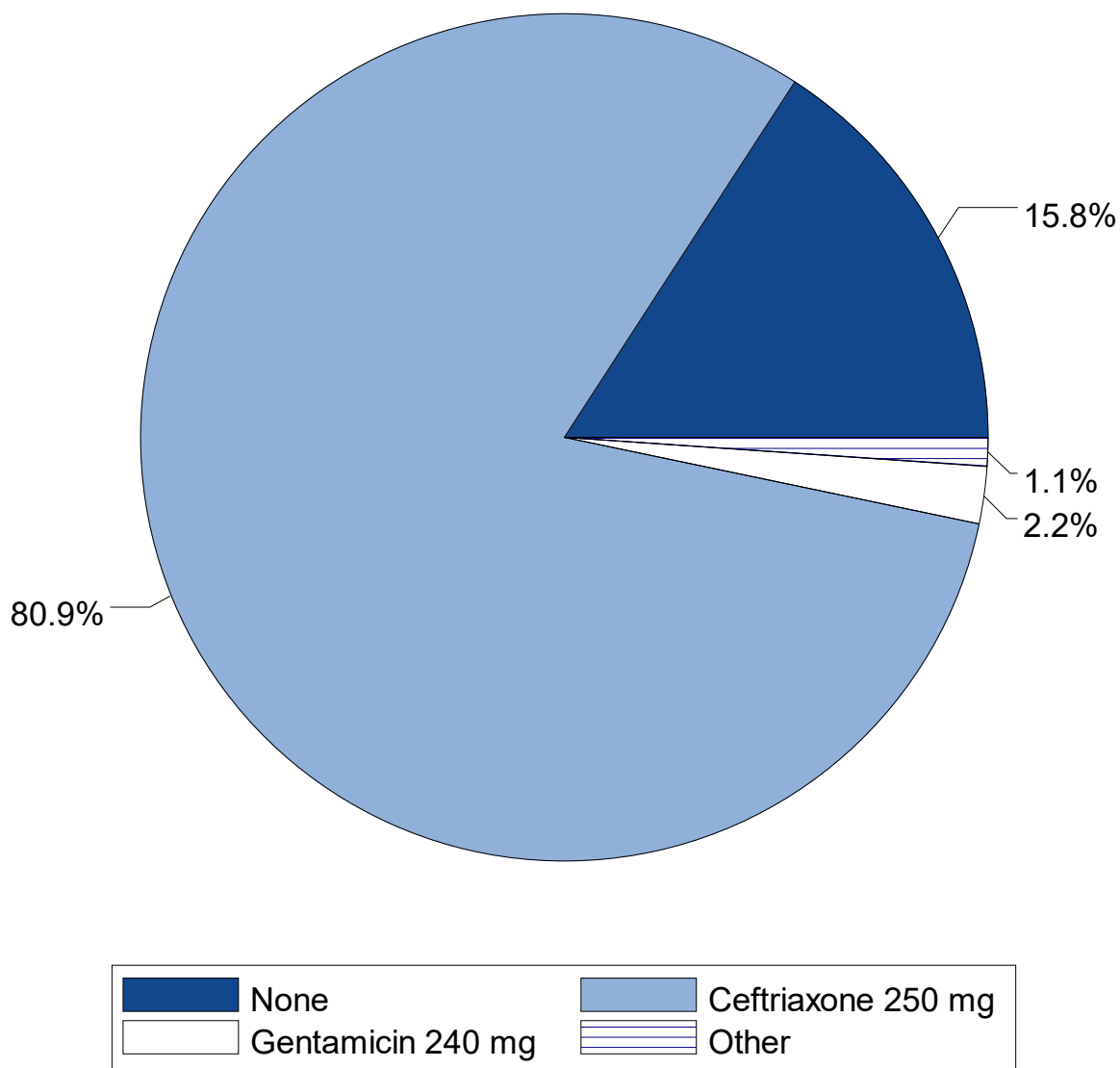


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (3.1)	10 (4.2)	7 (5.5)	16 (9.6)	11 (6.4)	11 (6.5)	12 (7.2)	24 (15.2)	19 (10.2)	24 (11.2)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
6 (6.0)	14 (8.3)	38 (17.8)	51 (20.5)	41 (21.1)	39 (19.3)	41 (16.9)	39 (18.5)	33 (17.7)	19 (10.8)

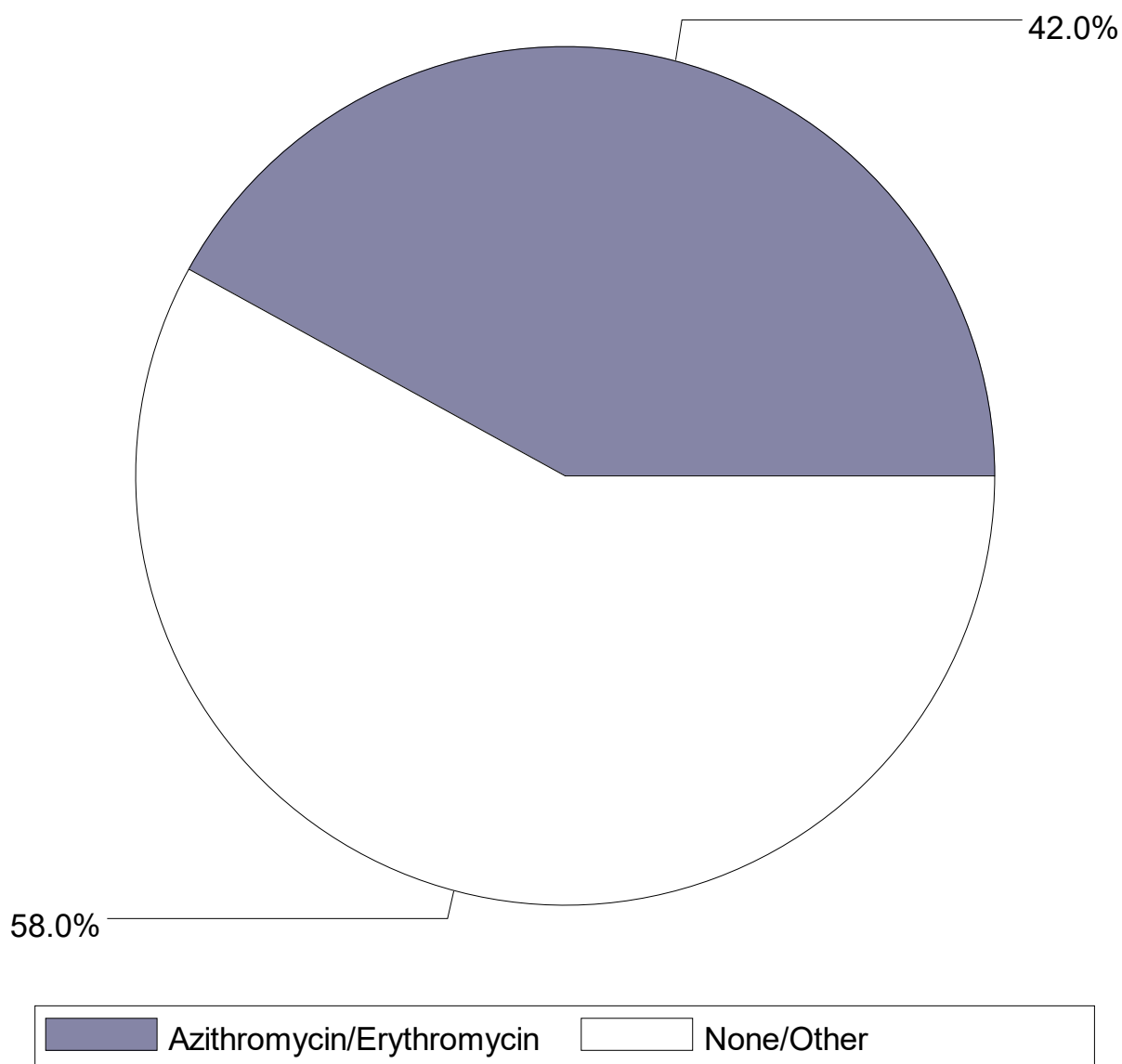
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2021



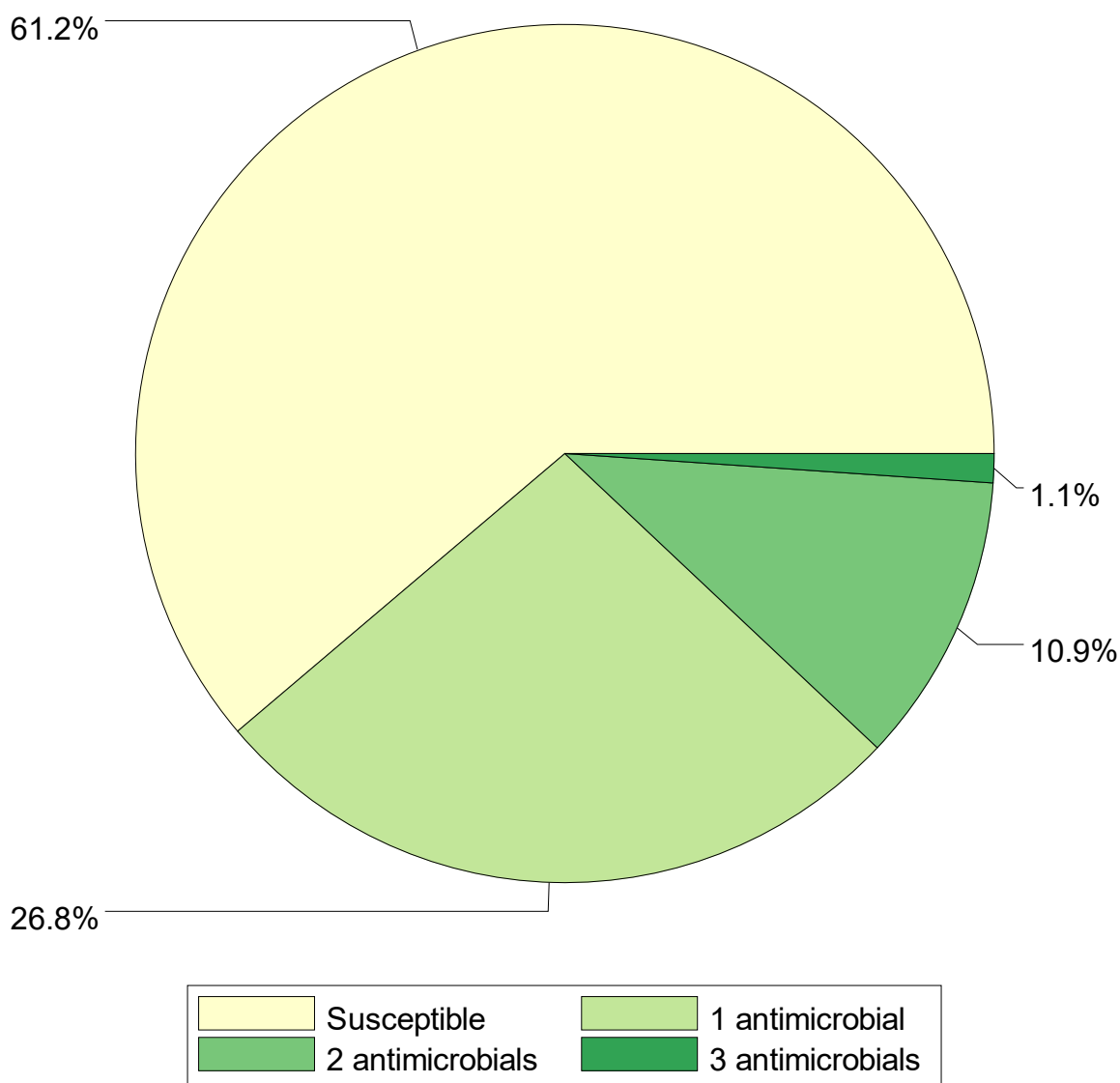
Primary Treatment	Count	Percentage
None	29	15.8
Ceftriaxone 250 mg	148	80.9
Gentamicin 240 mg	4	2.2
Other	2	1.1

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	21	42.0
None/Other	29	58.0

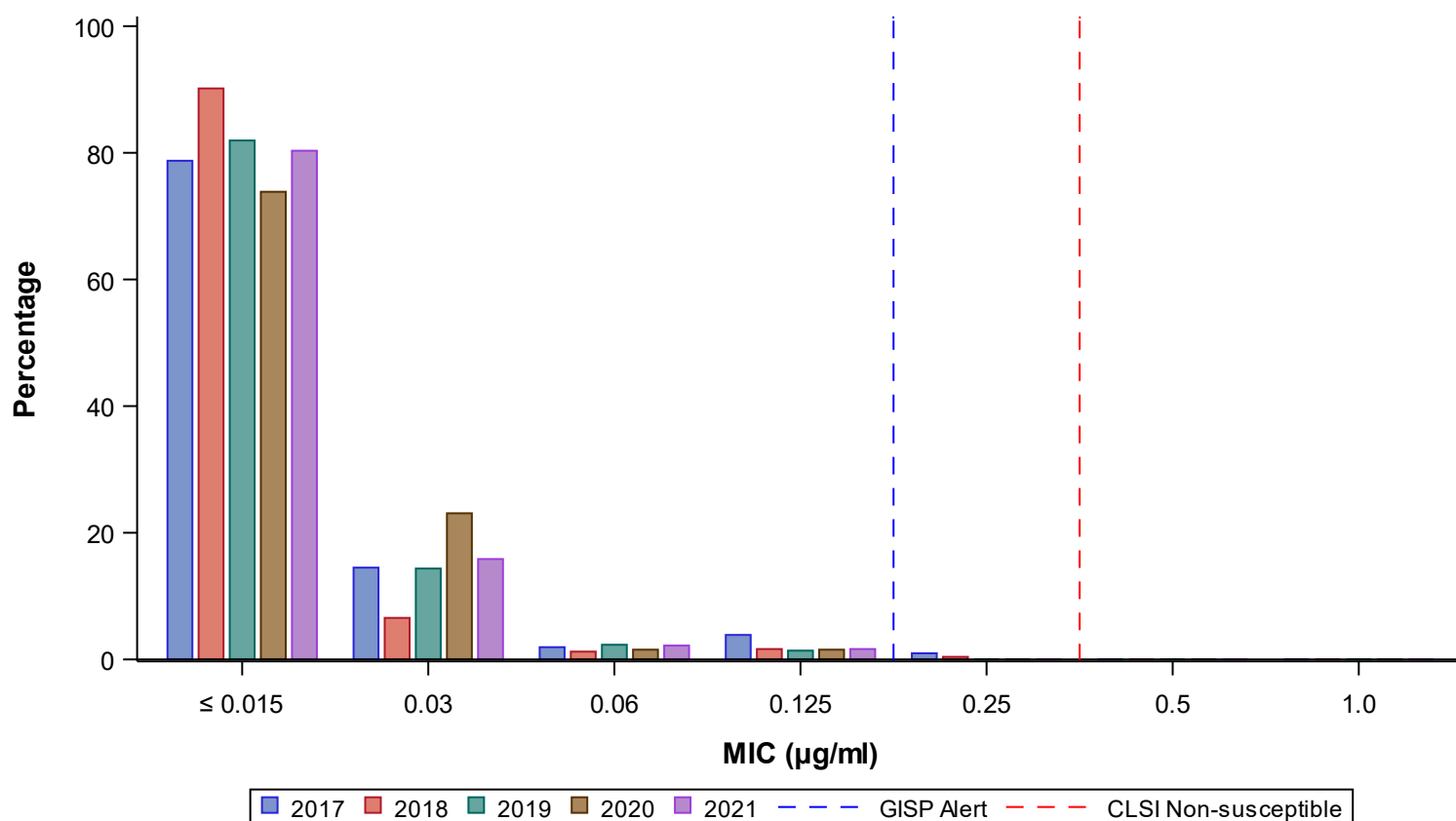
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	112	61.2
1 antimicrobial	49	26.8
2 antimicrobials	20	10.9
3 antimicrobials	2	1.1
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2017-2021



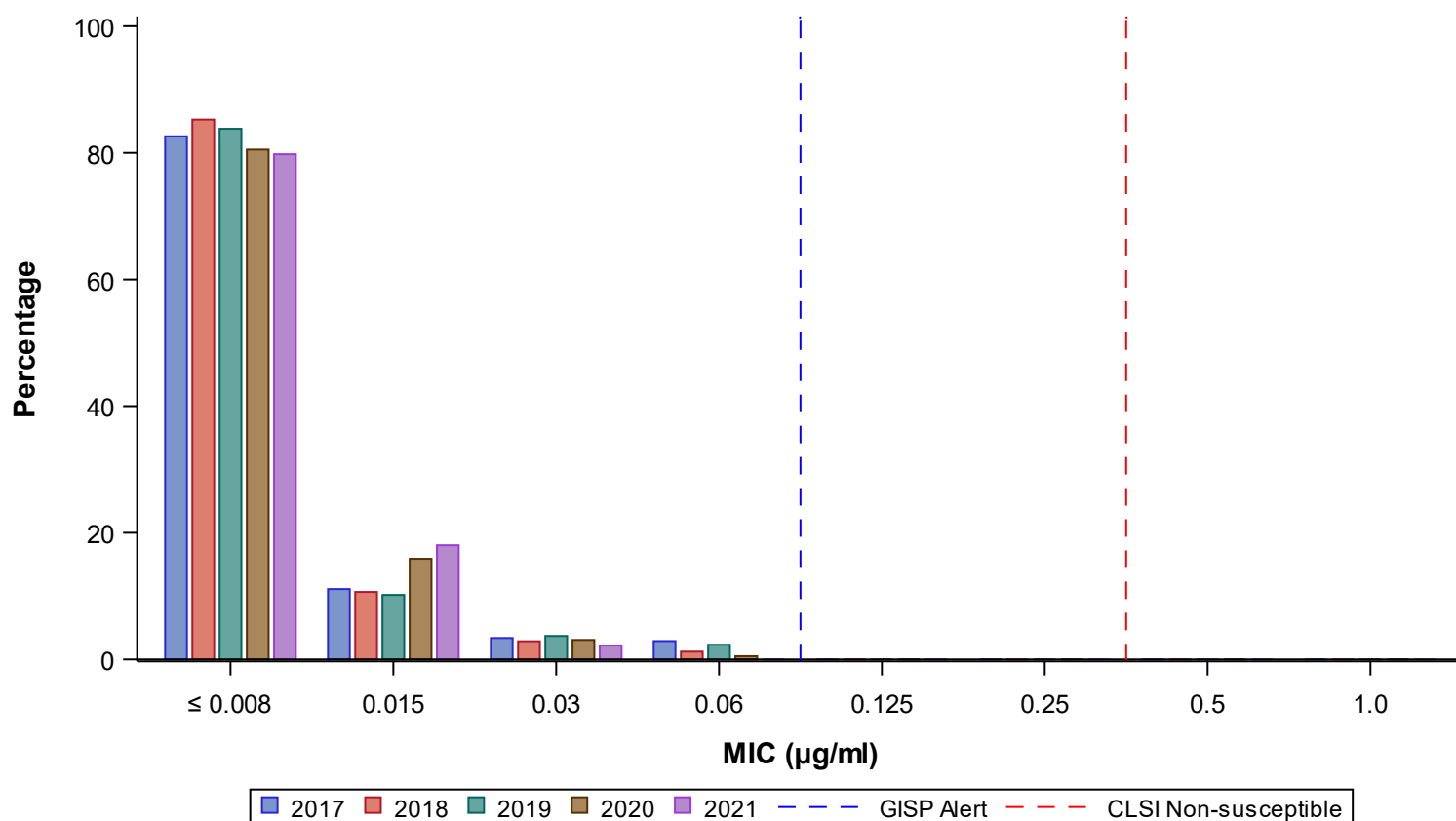
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	163 (78.7)	30 (14.5)	4 (1.9)	8 (3.9)	2 (1.0)	0 (0.0)	0 (0.0)	207
2018	220 (90.2)	16 (6.6)	3 (1.2)	4 (1.6)	1 (0.4)	0 (0.0)	0 (0.0)	244
2019	177 (81.9)	31 (14.4)	5 (2.3)	3 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	216
2020	144 (73.8)	45 (23.1)	3 (1.5)	3 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	195
2021	147 (80.3)	29 (15.8)	4 (2.2)	3 (1.6)	0 (0.0)	0 (0.0)	0 (0.0)	183

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	171 (82.6)	23 (11.1)	7 (3.4)	6 (2.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	207
2018	208 (85.2)	26 (10.7)	7 (2.9)	3 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	244
2019	181 (83.8)	22 (10.2)	8 (3.7)	5 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	216
2020	157 (80.5)	31 (15.9)	6 (3.1)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	195
2021	146 (79.8)	33 (18.0)	4 (2.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	183

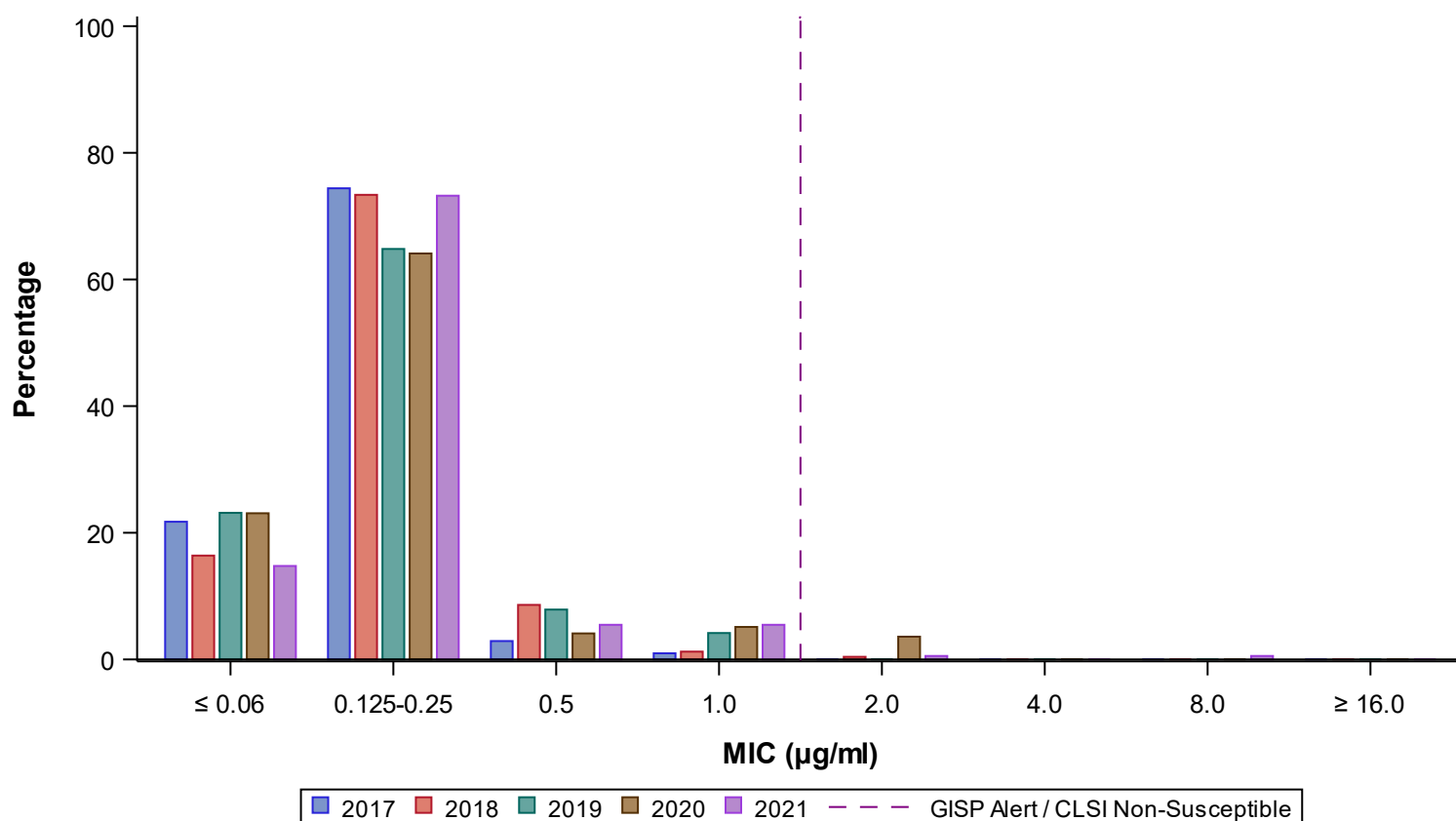
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	45 (21.7)	154 (74.4)	6 (2.9)	2 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	207
2018	40 (16.4)	179 (73.4)	21 (8.6)	3 (1.2)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	244
2019	50 (23.1)	140 (64.8)	17 (7.9)	9 (4.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	216
2020	45 (23.1)	125 (64.1)	8 (4.1)	10 (5.1)	7 (3.6)	0 (0.0)	0 (0.0)	0 (0.0)	195
2021	27 (14.8)	134 (73.2)	10 (5.5)	10 (5.5)	1 (0.5)	0 (0.0)	1 (0.5)	0 (0.0)	183

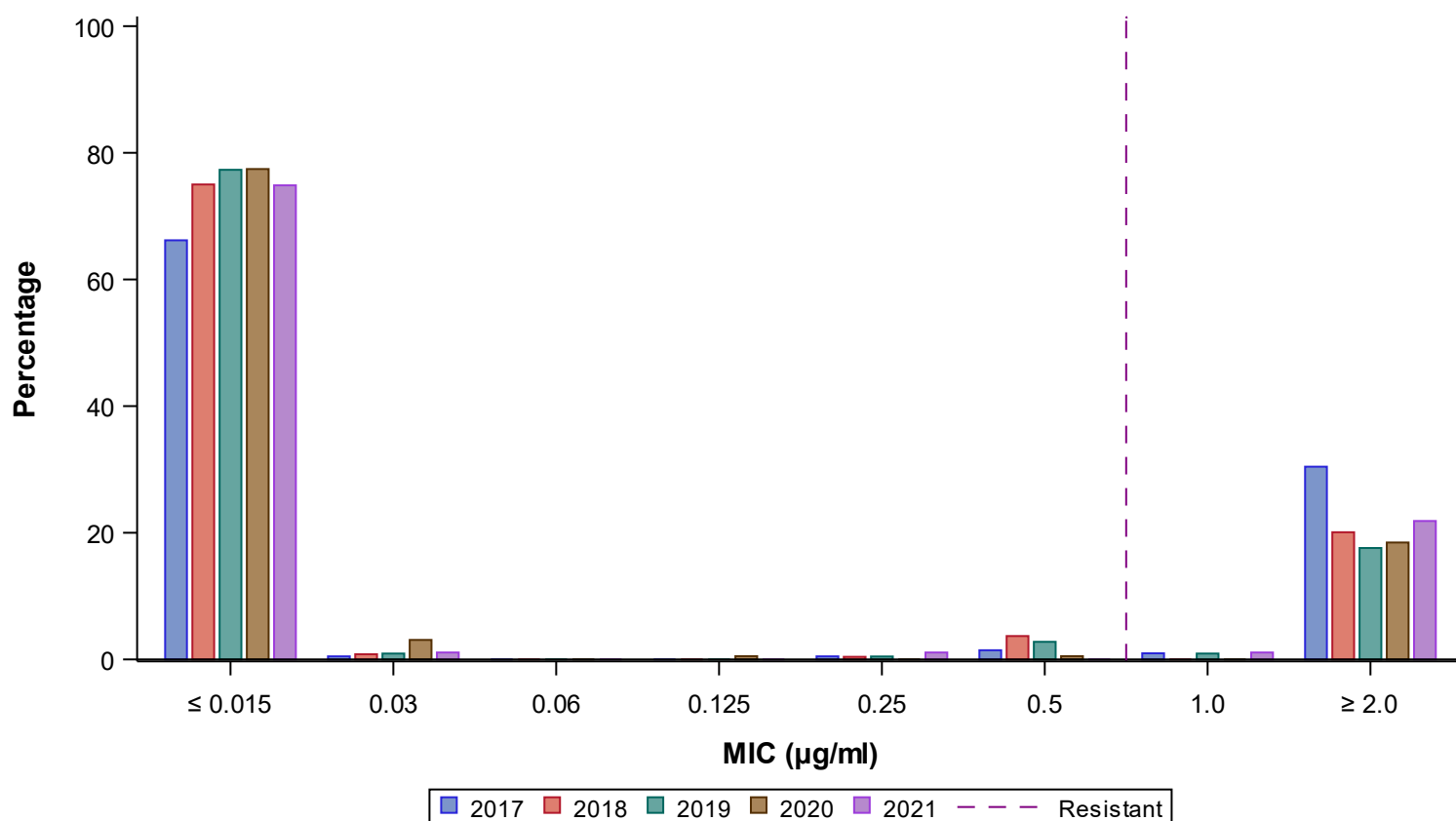
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

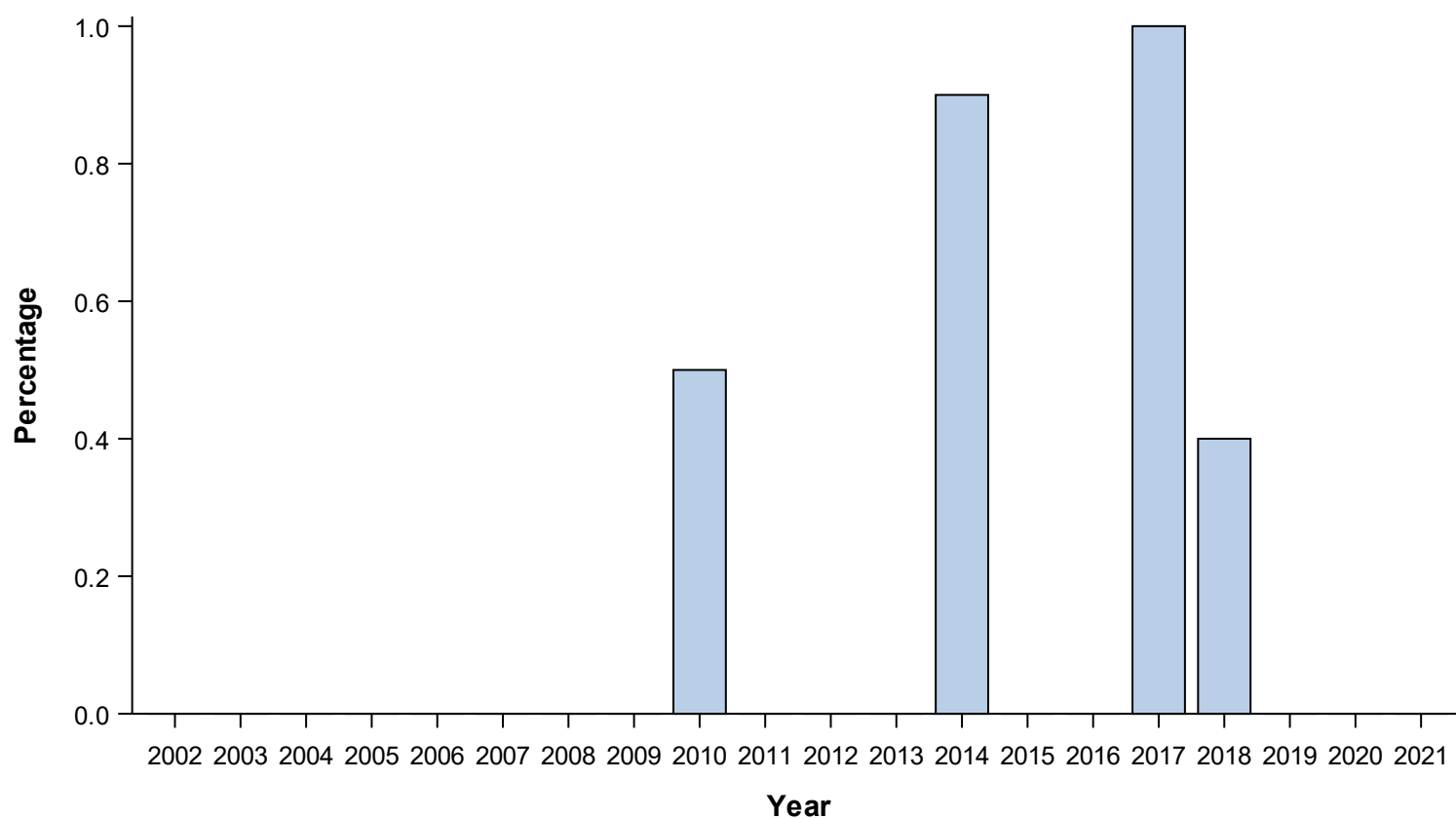
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	137 (66.2)	1 (0.5)	0 (0.0)	0 (0.0)	1 (0.5)	3 (1.4)	2 (1.0)	63 (30.4)	207
2018	183 (75.0)	2 (0.8)	0 (0.0)	0 (0.0)	1 (0.4)	9 (3.7)	0 (0.0)	49 (20.1)	244
2019	167 (77.3)	2 (0.9)	0 (0.0)	0 (0.0)	1 (0.5)	6 (2.8)	2 (0.9)	38 (17.6)	216
2020	151 (77.4)	6 (3.1)	0 (0.0)	1 (0.5)	0 (0.0)	1 (0.5)	0 (0.0)	36 (18.5)	195
2021	137 (74.9)	2 (1.1)	0 (0.0)	0 (0.0)	2 (1.1)	0 (0.0)	2 (1.1)	40 (21.9)	183

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2002-2021

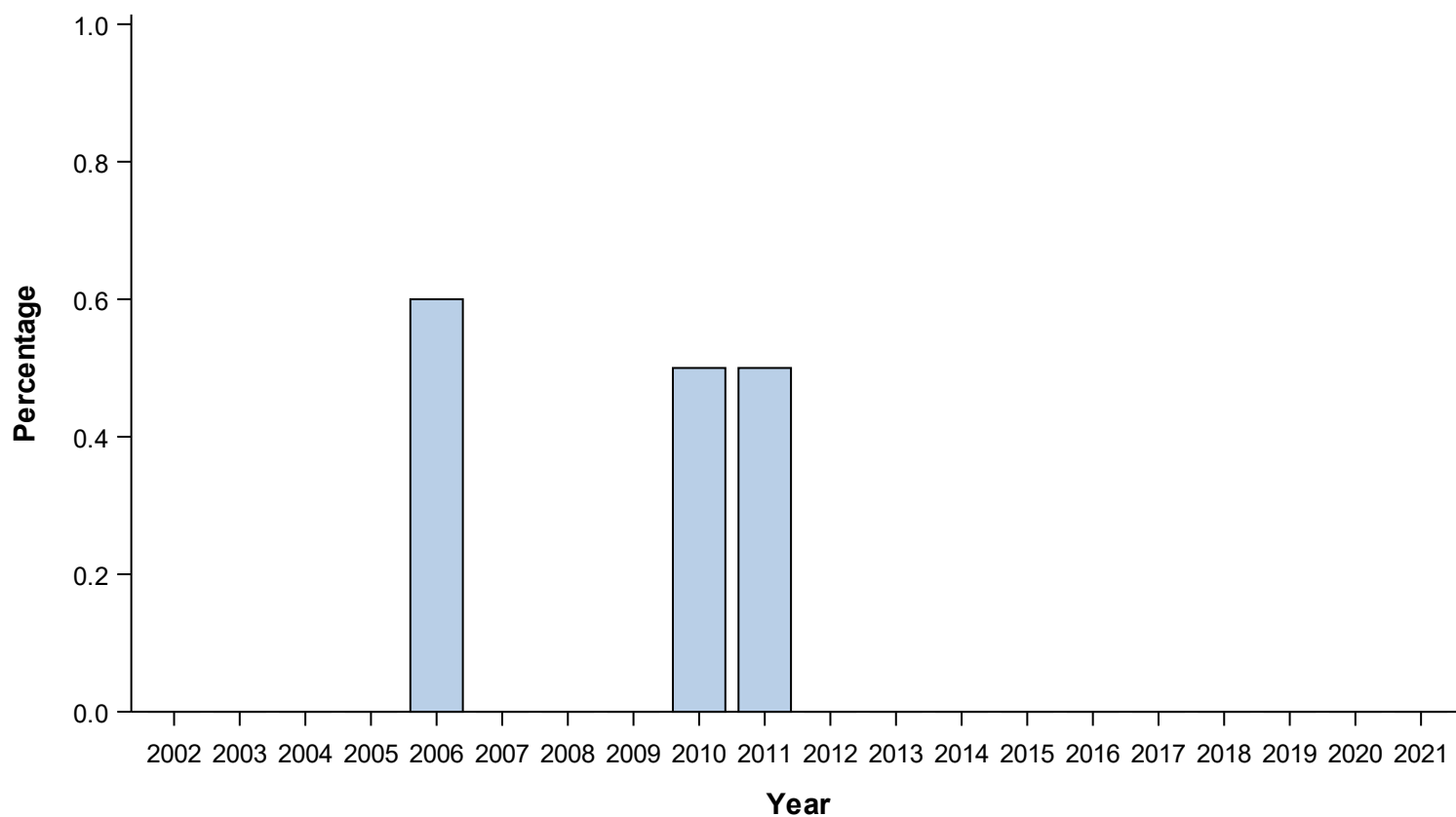


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	2 (0.9)	0 (0.0)	0 (0.0)	2 (1.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2002-2021

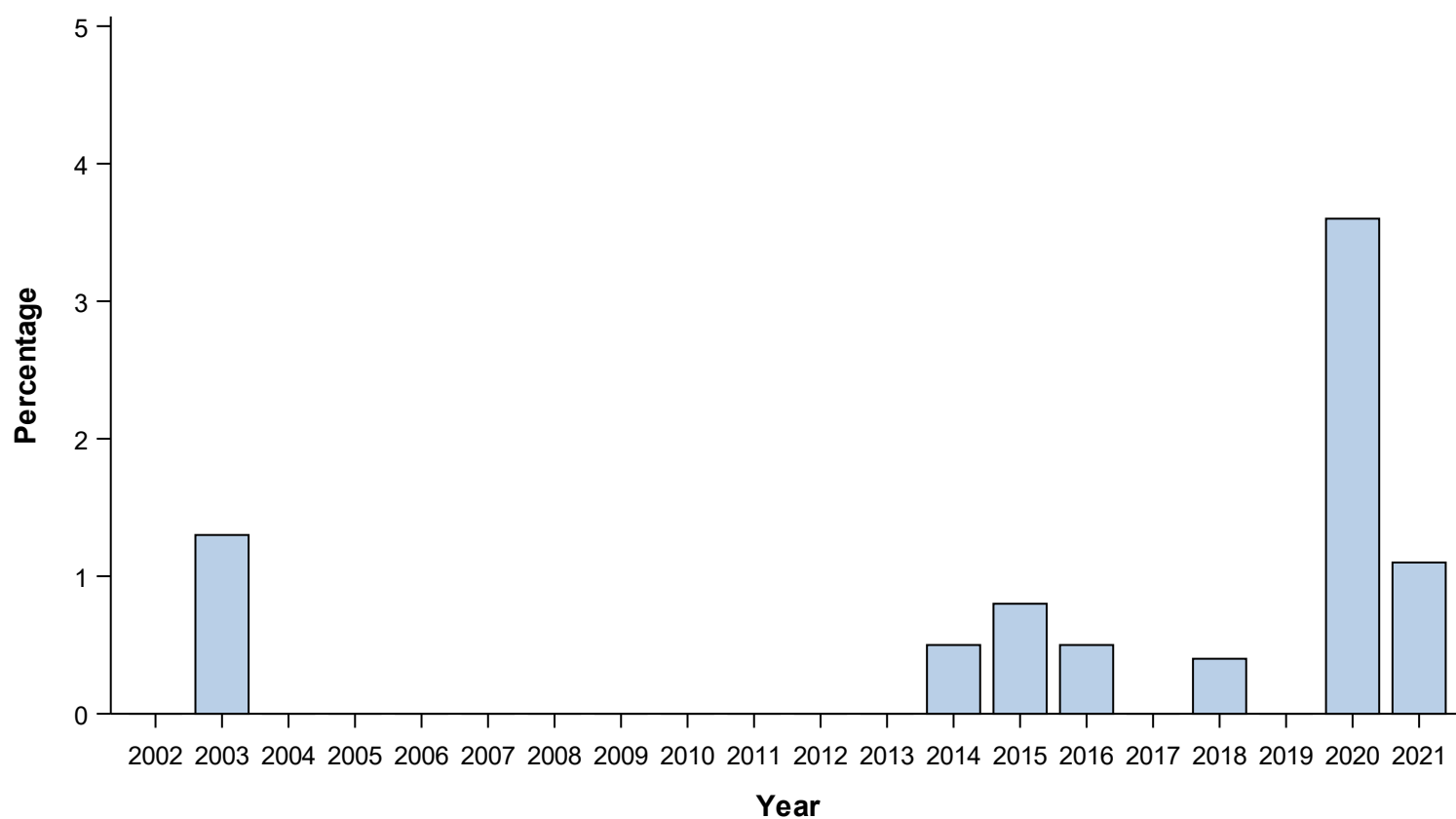


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)	1 (0.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Greensboro, North Carolina, 2002-2021

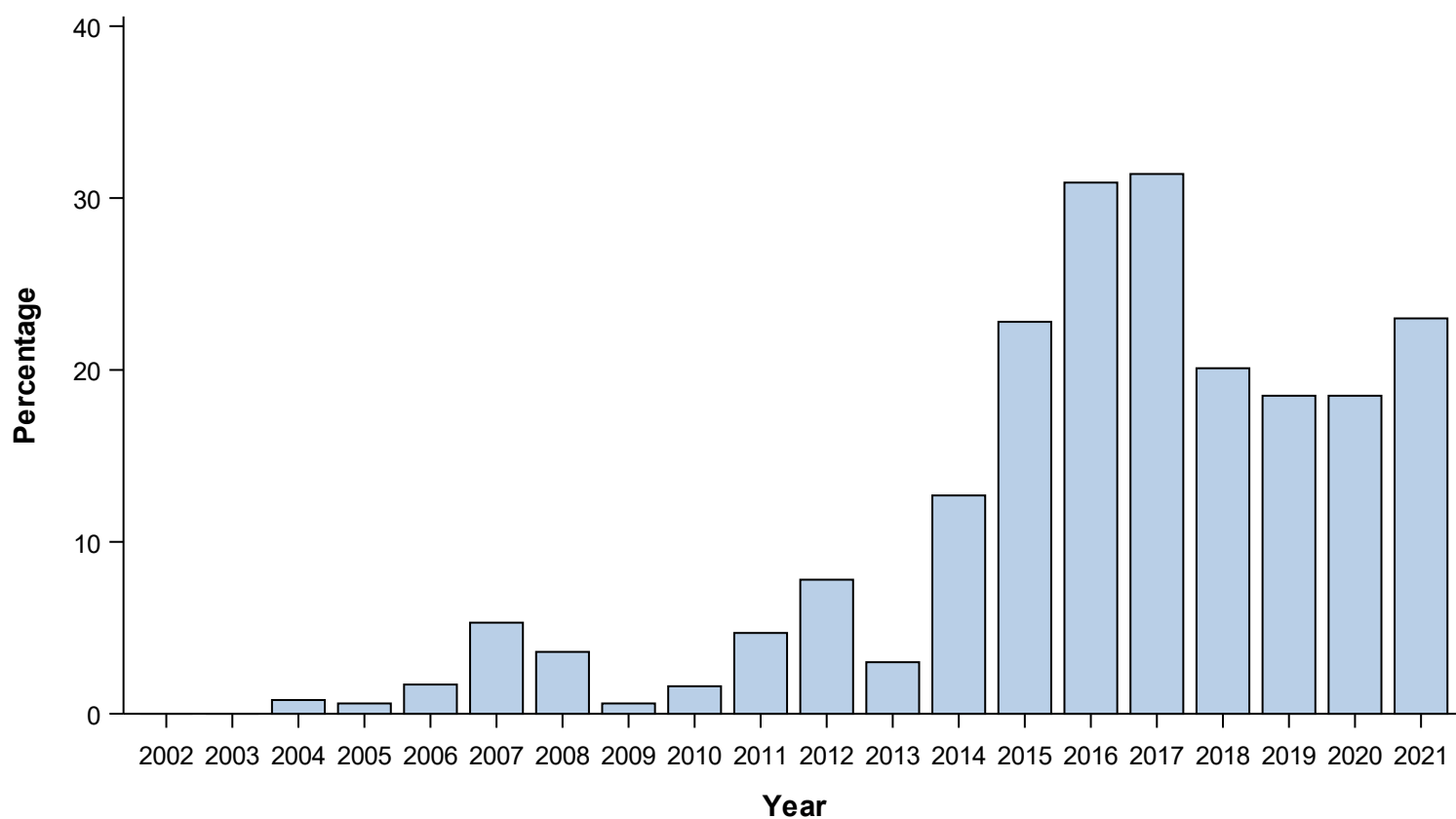


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	3 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	1 (0.5)	2 (0.8)	1 (0.5)	0 (0.0)	1 (0.4)	0 (0.0)	7 (3.6)	2 (1.1)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Greensboro, North Carolina, 2002-2021

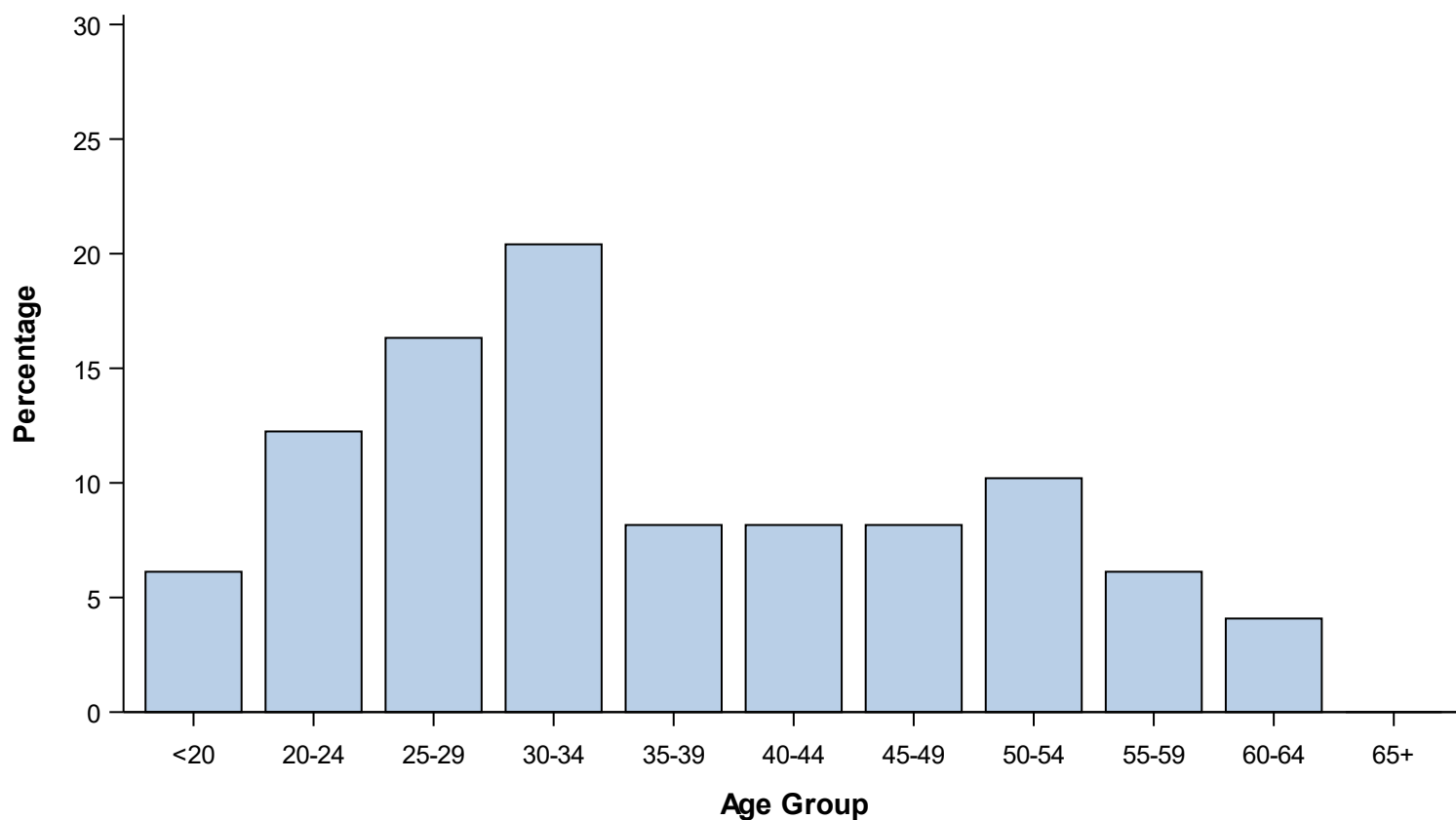


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	1 (0.8)	1 (0.6)	3 (1.7)	9 (5.3)	6 (3.6)	1 (0.6)	3 (1.6)	10 (4.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
8 (7.8)	5 (3.0)	27 (12.7)	59 (22.8)	60 (30.9)	65 (31.4)	49 (20.1)	40 (18.5)	36 (18.5)	42 (23.0)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

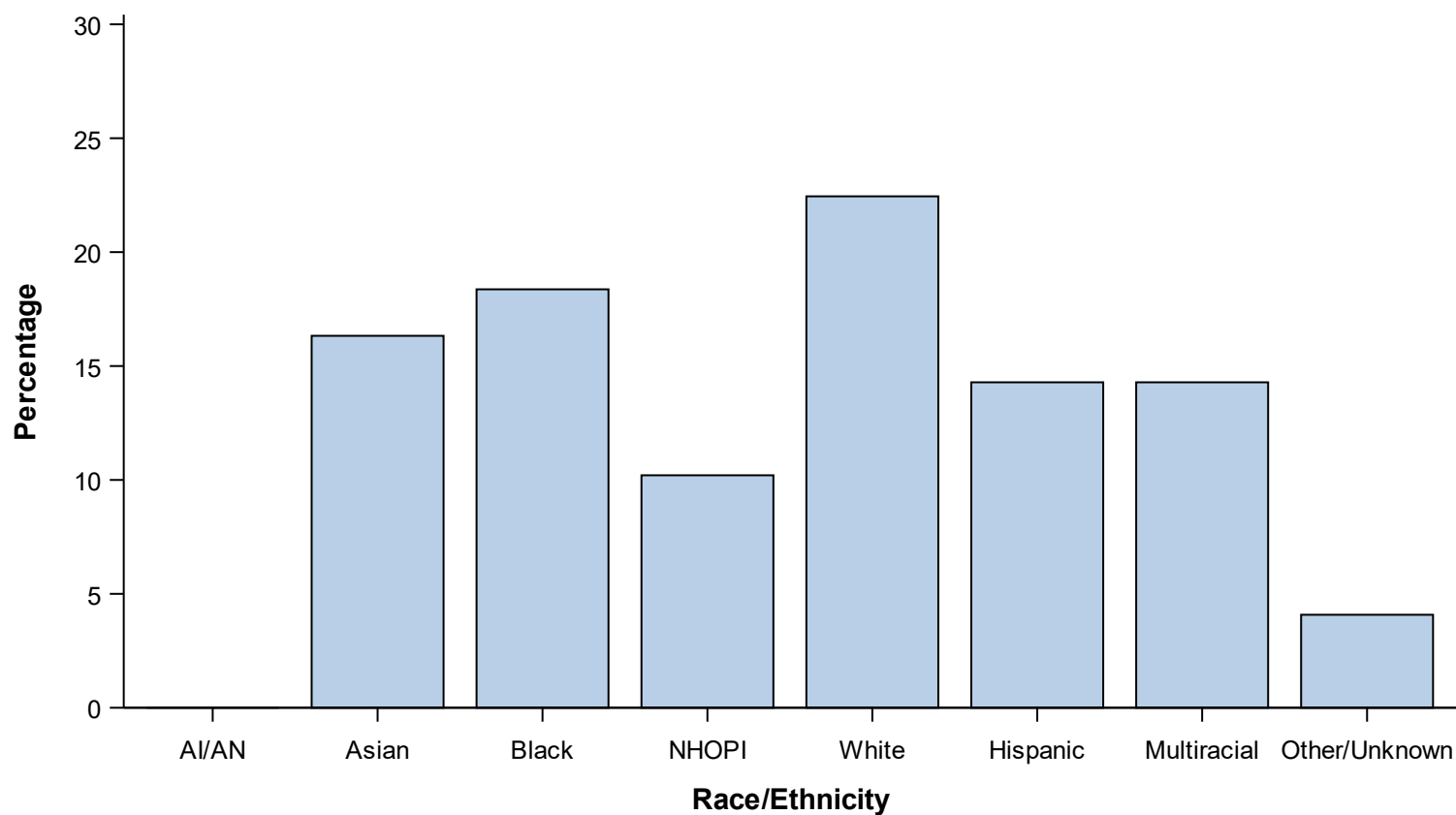
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
3 (6.1)	6 (12.2)	8 (16.3)	10 (20.4)	4 (8.2)	4 (8.2)	4 (8.2)	5 (10.2)	3 (6.1)	2 (4.1)	0 (0.0)	49

Note: Cases with unknown age were excluded.

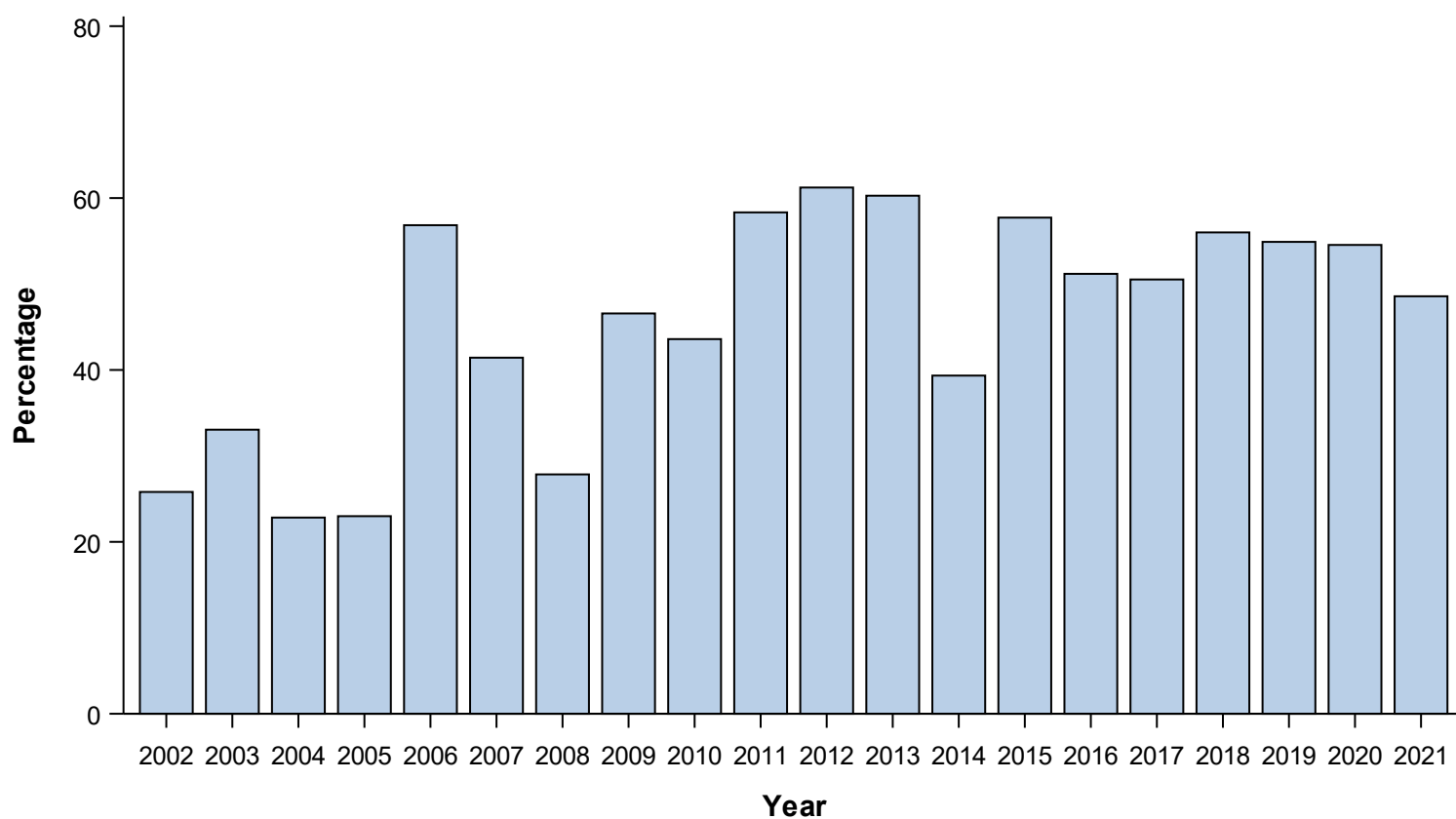
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	8 (16.3)	9 (18.4)	5 (10.2)	11 (22.4)	7 (14.3)	7 (14.3)	2 (4.1)	49

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Honolulu, Hawaii, 2002-2021

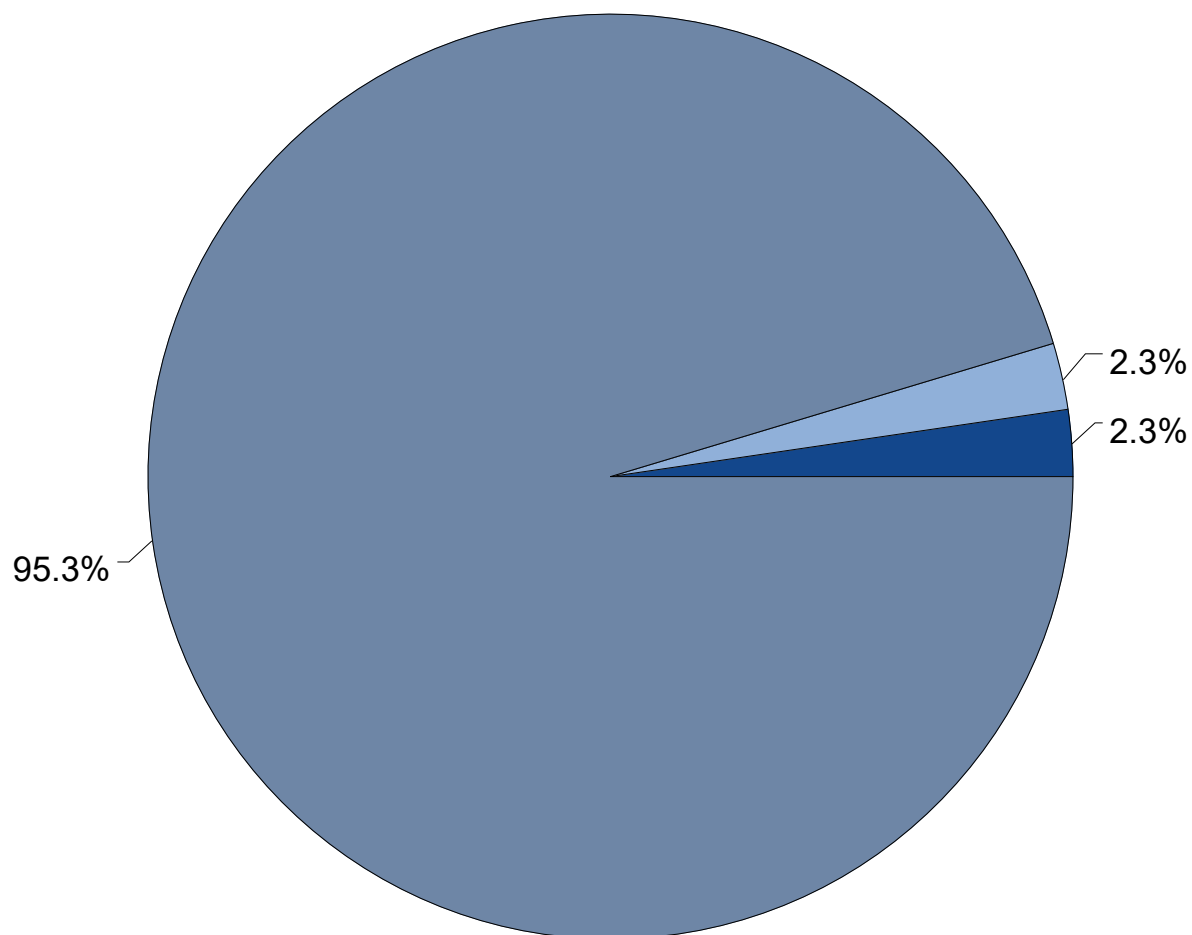


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
24 (25.8)	39 (33.1)	21 (22.8)	20 (23.0)	54 (56.8)	29 (41.4)	22 (27.8)	34 (46.6)	34 (43.6)	35 (58.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
60 (61.2)	44 (60.3)	48 (39.3)	71 (57.7)	65 (51.2)	48 (50.5)	42 (56.0)	28 (54.9)	6 (54.5)	17 (48.6)

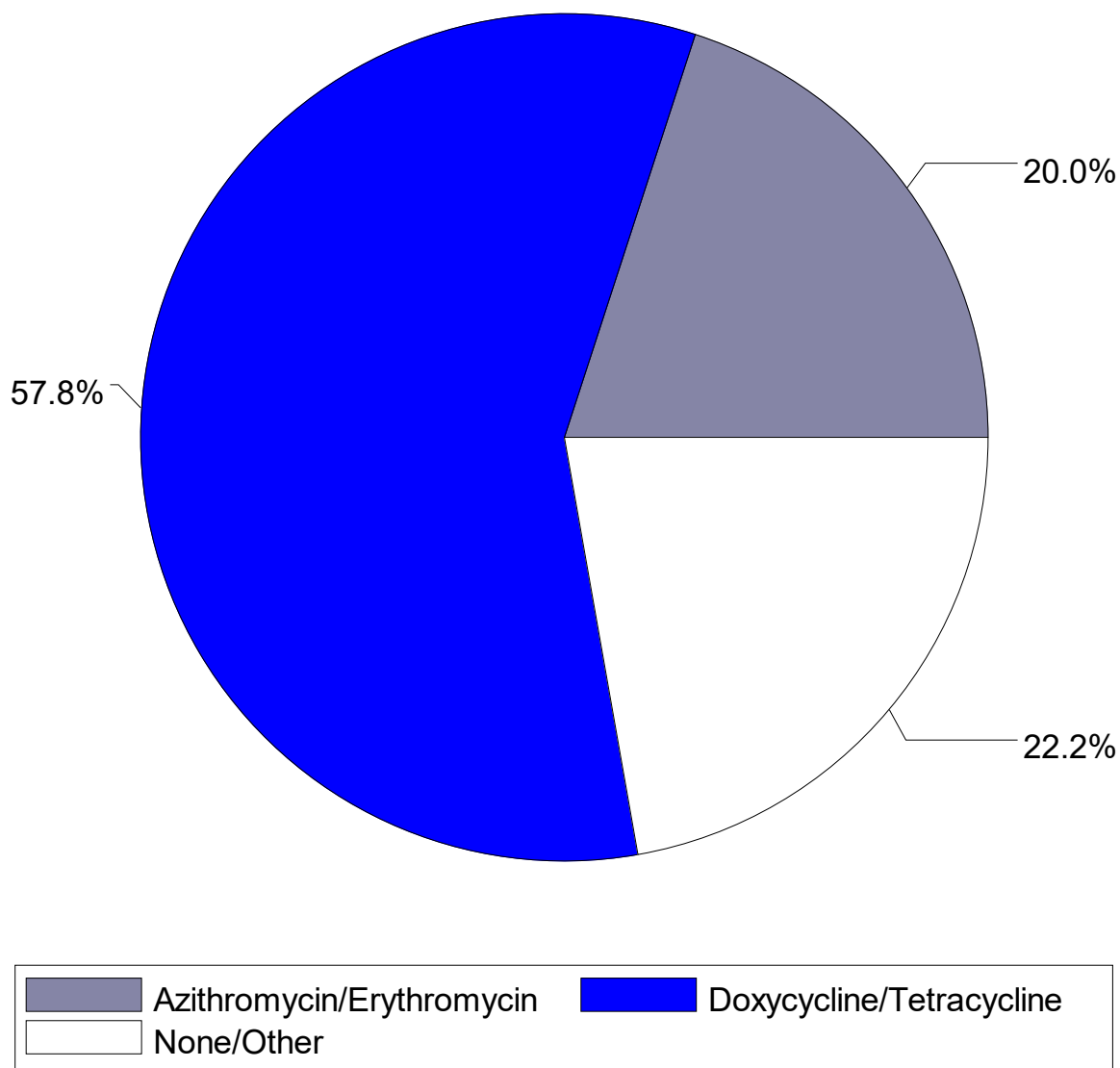
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2021



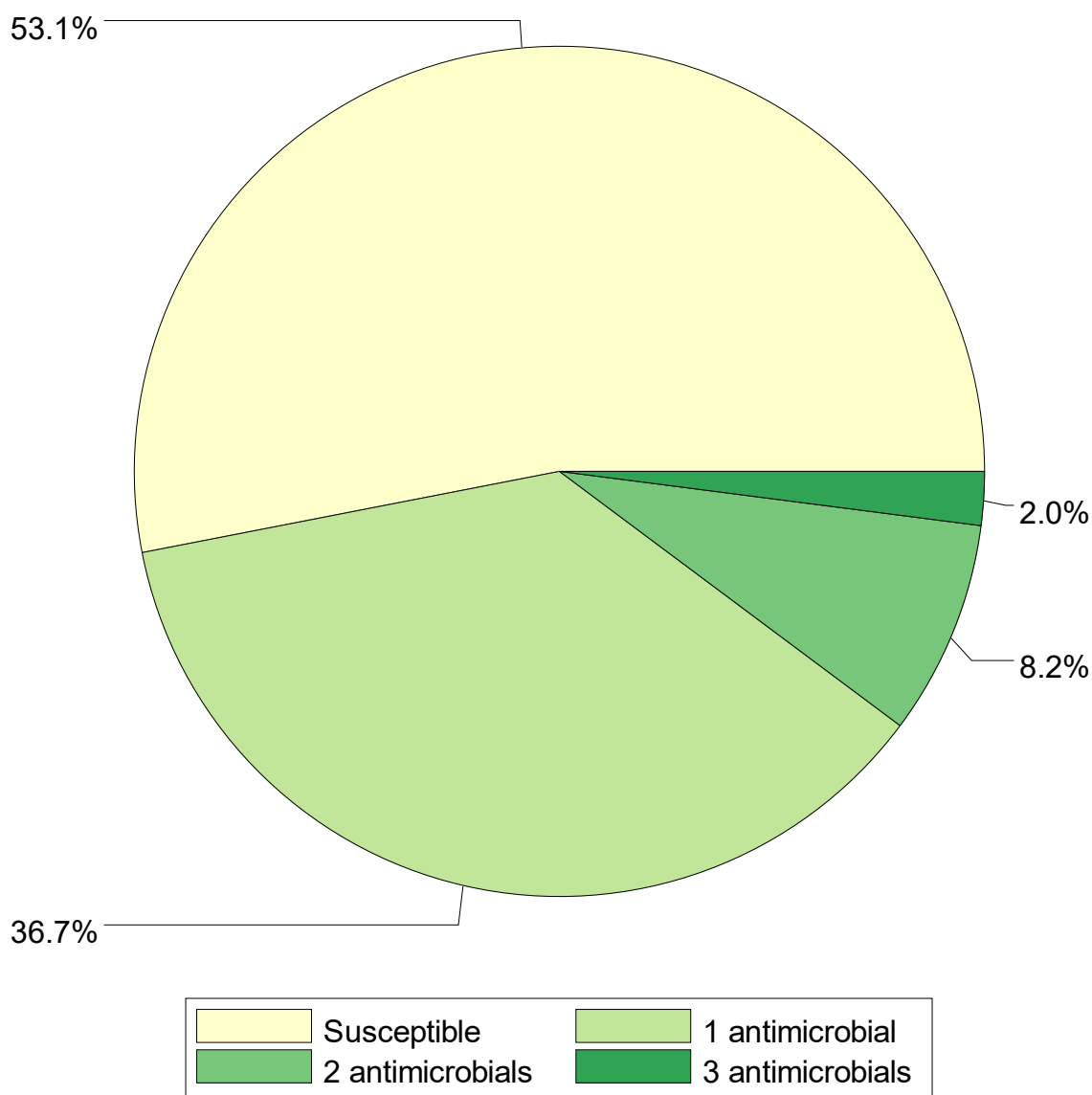
Primary Treatment	Count	Percentage
None	1	2.3
Ceftriaxone 250 mg	1	2.3
Ceftriaxone 500 mg	41	95.3

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	9	20.0
Doxycycline/Tetracycline	26	57.8
None/Other	10	22.2

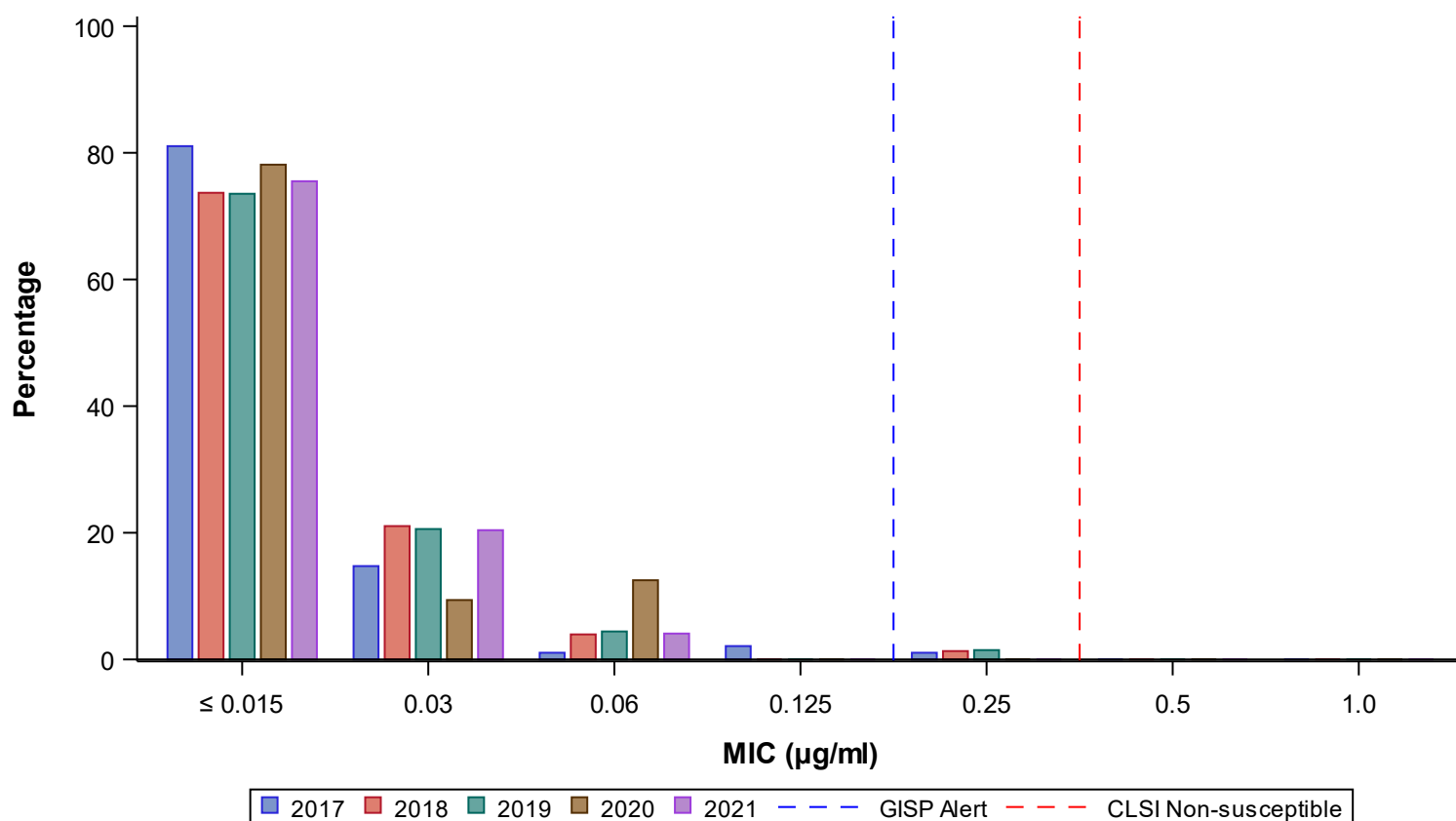
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	26	53.1
1 antimicrobial	18	36.7
2 antimicrobials	4	8.2
3 antimicrobials	1	2.0
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC $\geq$ 0.125 μ g/mL; Cefixime: MIC $\geq$ 0.25 μ g/mL; Azithromycin: MIC $\geq$ 2.0 μ g/ml; Resistance = Tetracycline: MIC $\geq$ 2.0 μ g/mL; Ciprofloxacin: MIC $\geq$ 1.0 μ g/mL; Penicillin: MIC $\geq$ 2.0 μ g/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2017-2021



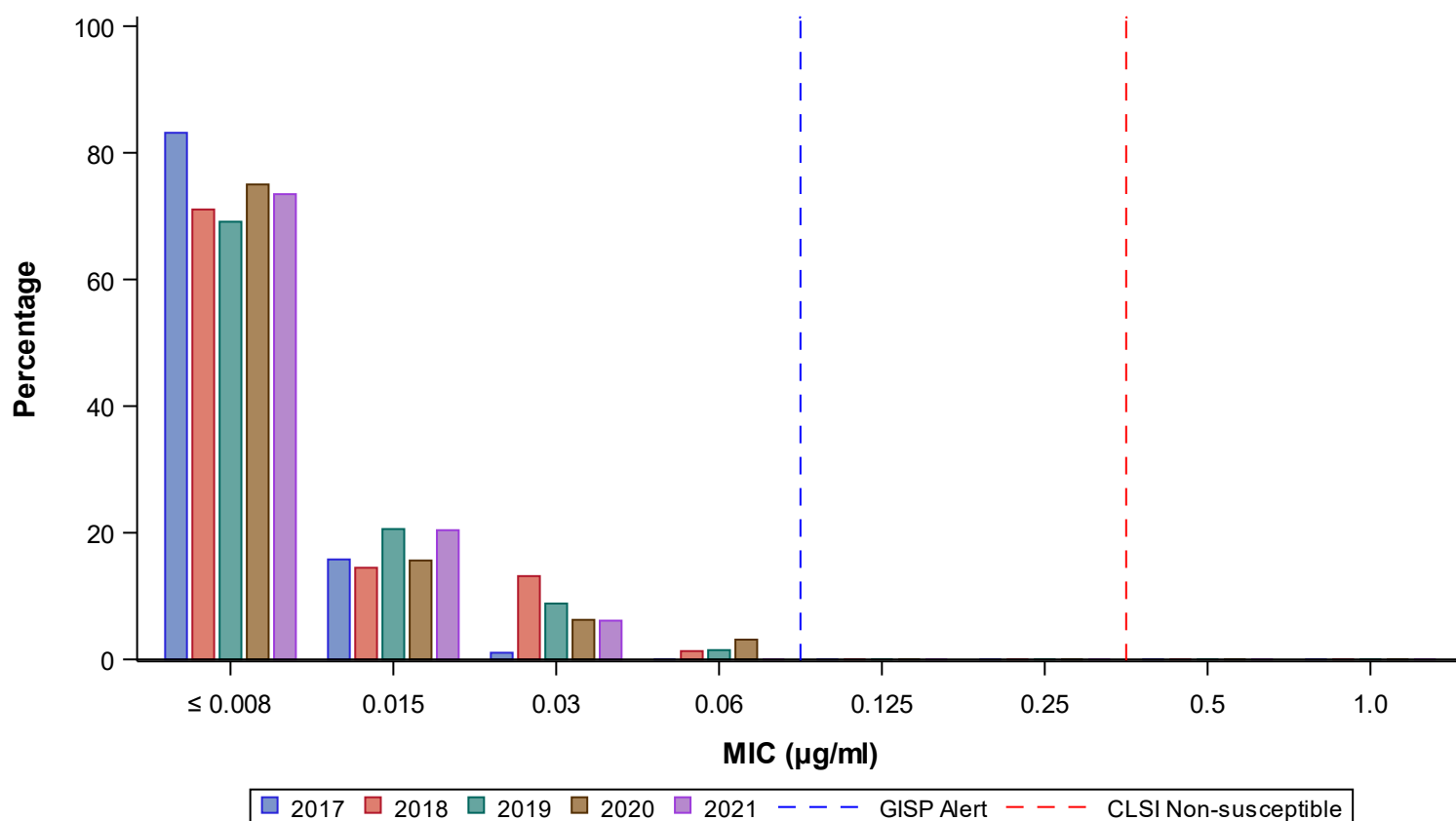
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	77 (81.1)	14 (14.7)	1 (1.1)	2 (2.1)	1 (1.1)	0 (0.0)	0 (0.0)	95
2018	56 (73.7)	16 (21.1)	3 (3.9)	0 (0.0)	1 (1.3)	0 (0.0)	0 (0.0)	76
2019	50 (73.5)	14 (20.6)	3 (4.4)	0 (0.0)	1 (1.5)	0 (0.0)	0 (0.0)	68
2020	25 (78.1)	3 (9.4)	4 (12.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	32
2021	37 (75.5)	10 (20.4)	2 (4.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	49

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	79 (83.2)	15 (15.8)	1 (1.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	95
2018	54 (71.1)	11 (14.5)	10 (13.2)	1 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	76
2019	47 (69.1)	14 (20.6)	6 (8.8)	1 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	68
2020	24 (75.0)	5 (15.6)	2 (6.3)	1 (3.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	32
2021	36 (73.5)	10 (20.4)	3 (6.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	49

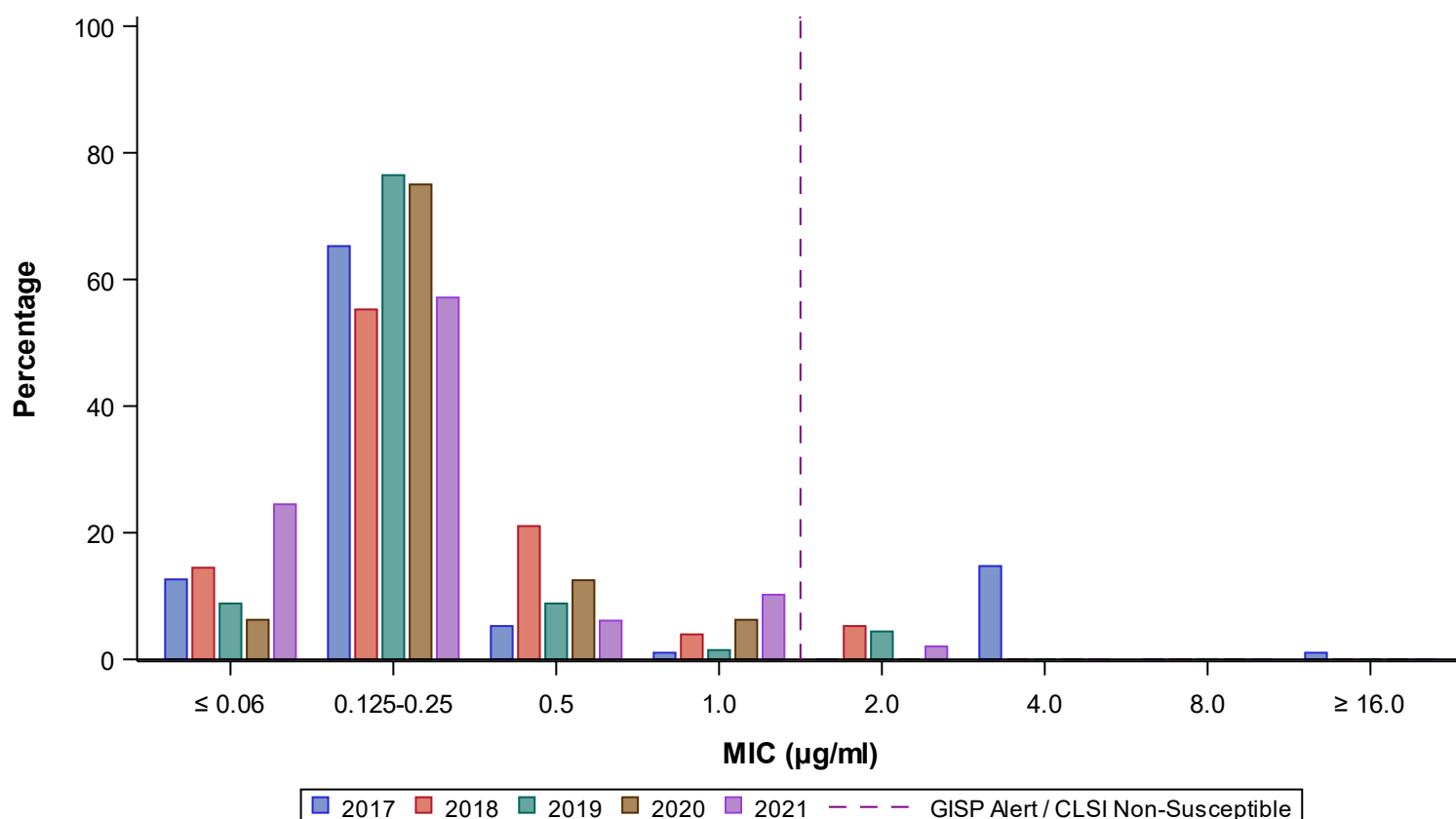
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	12 (12.6)	62 (65.3)	5 (5.3)	1 (1.1)	0 (0.0)	14 (14.7)	0 (0.0)	1 (1.1)	95
2018	11 (14.5)	42 (55.3)	16 (21.1)	3 (3.9)	4 (5.3)	0 (0.0)	0 (0.0)	0 (0.0)	76
2019	6 (8.8)	52 (76.5)	6 (8.8)	1 (1.5)	3 (4.4)	0 (0.0)	0 (0.0)	0 (0.0)	68
2020	2 (6.3)	24 (75.0)	4 (12.5)	2 (6.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	32
2021	12 (24.5)	28 (57.1)	3 (6.1)	5 (10.2)	1 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	49

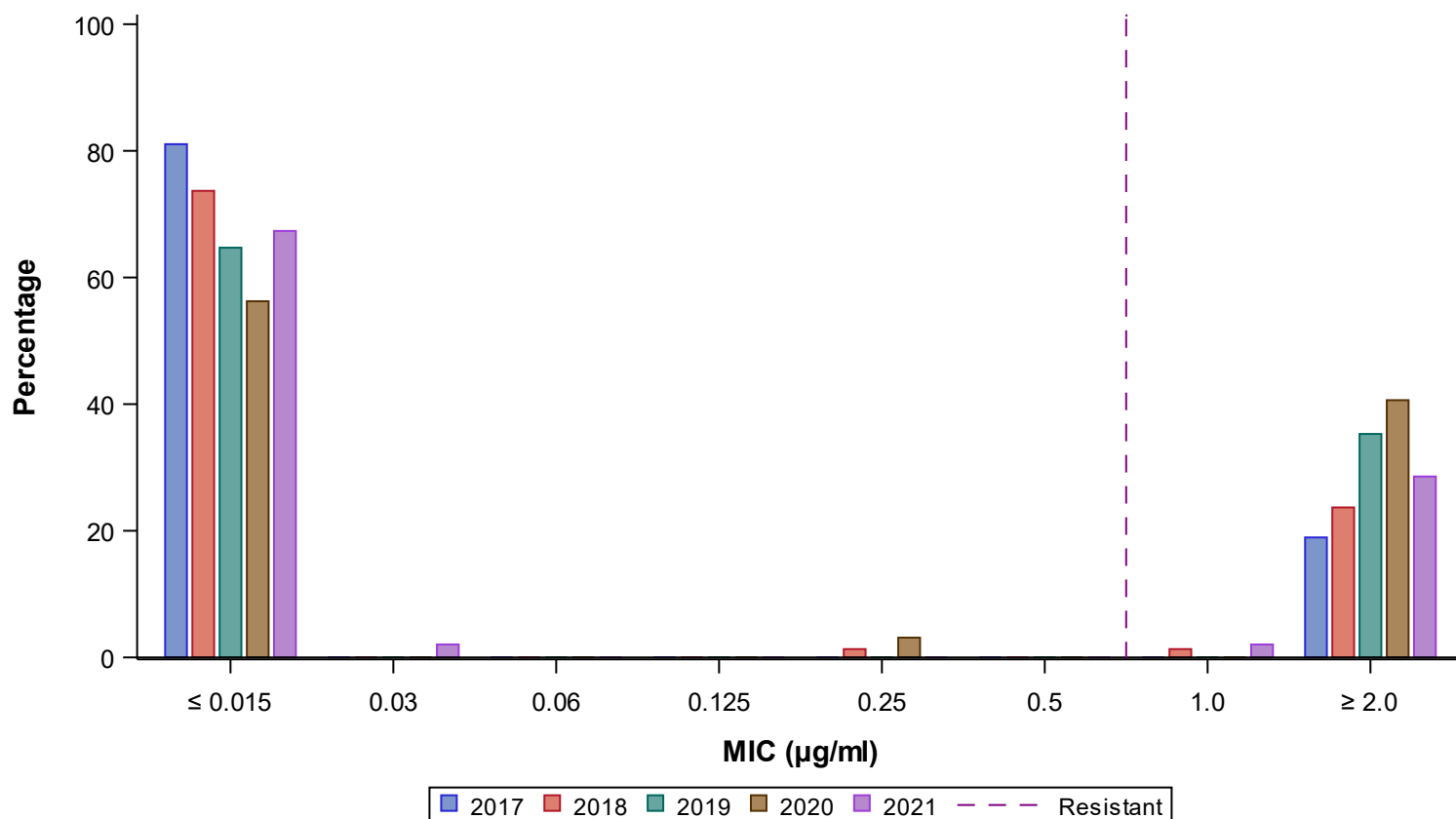
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

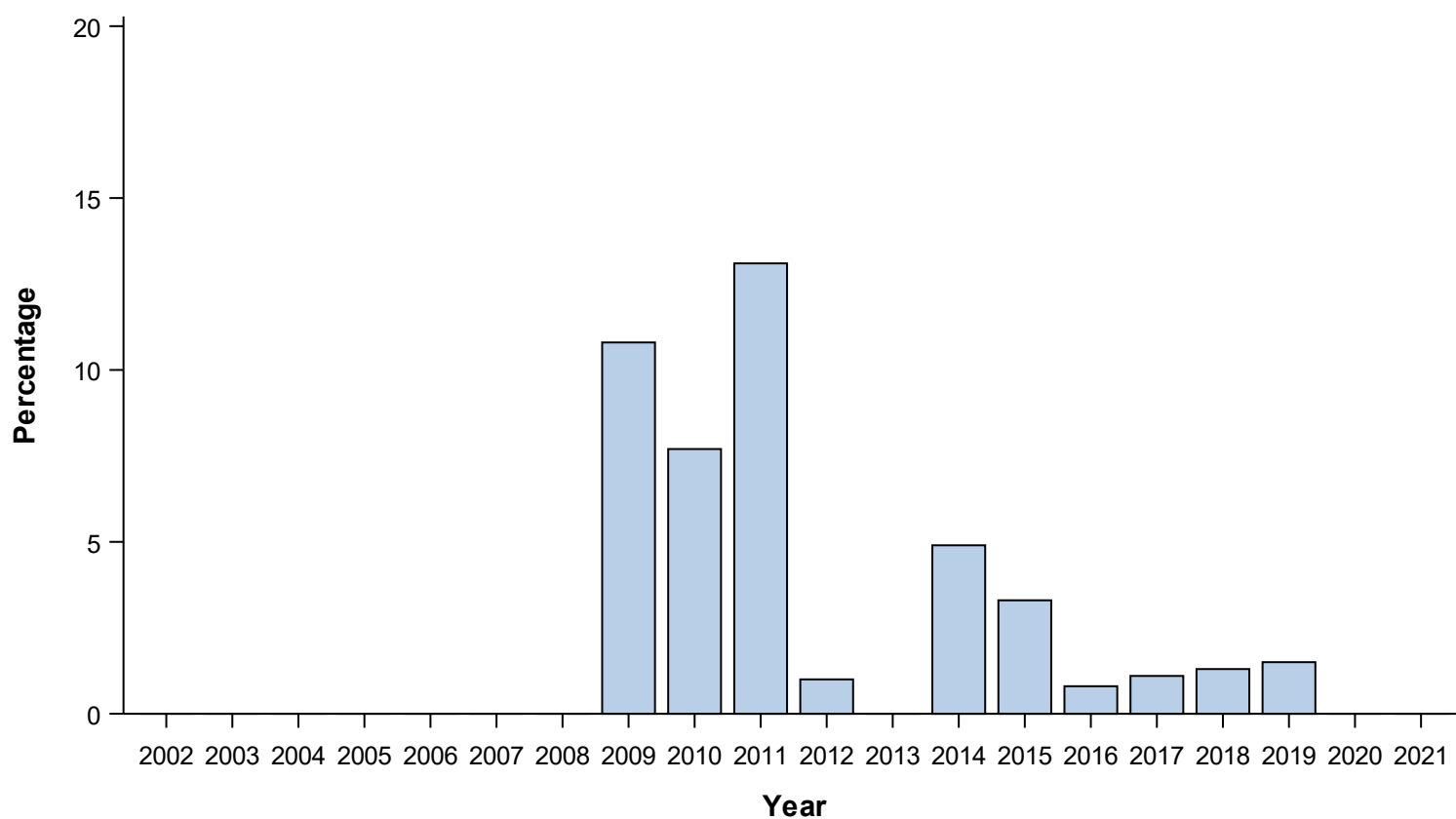
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	77 (81.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	18 (18.9)	95
2018	56 (73.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	0 (0.0)	1 (1.3)	18 (23.7)	76
2019	44 (64.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	24 (35.3)	68
2020	18 (56.3)	0 (0.0)	0 (0.0)	0 (0.0)	1 (3.1)	0 (0.0)	0 (0.0)	13 (40.6)	32
2021	33 (67.3)	1 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.0)	14 (28.6)	49

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2002-2021

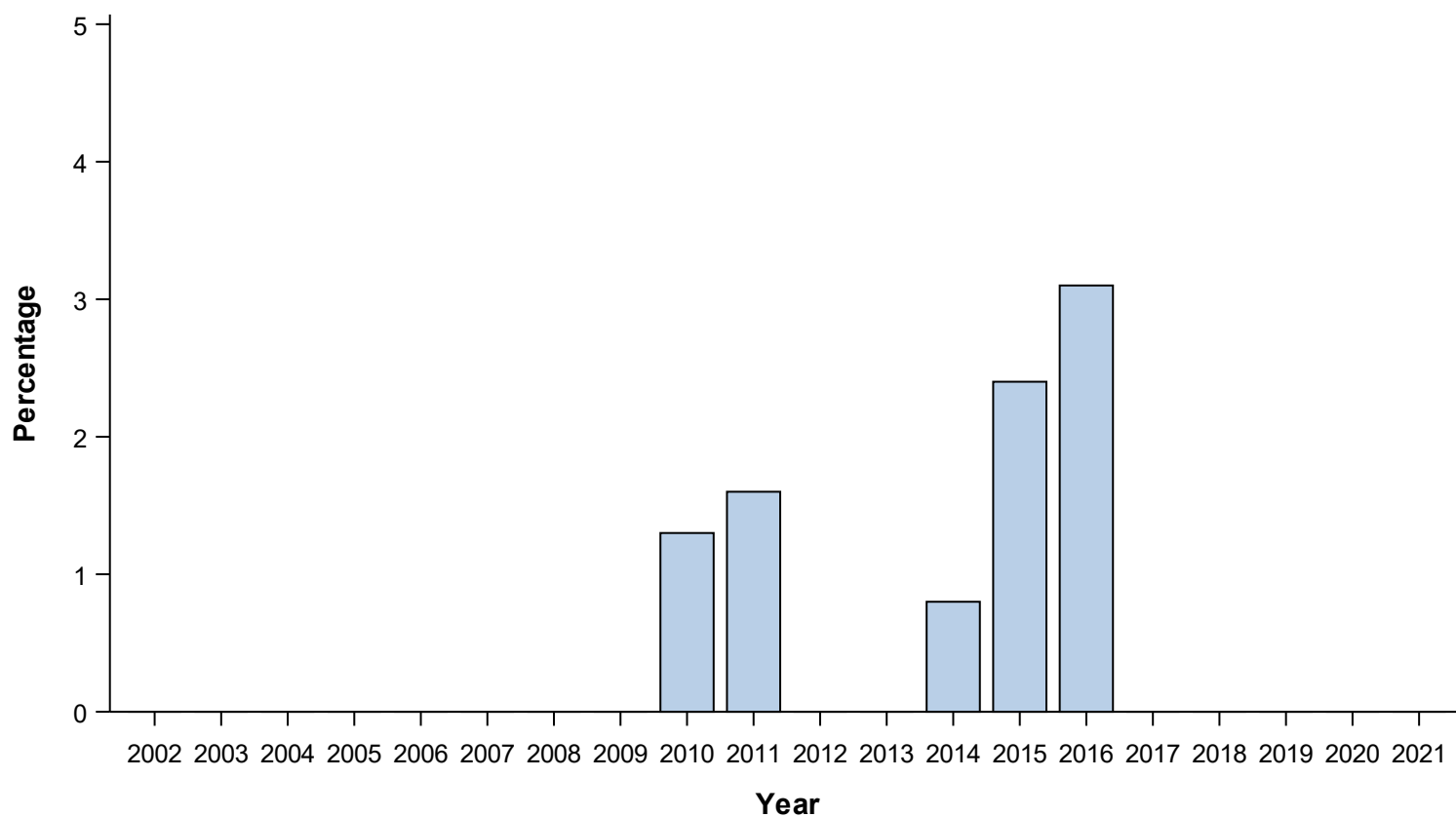


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	8 (10.8)	6 (7.7)	8 (13.1)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (1.0)	0 (0.0)	6 (4.9)	4 (3.3)	1 (0.8)	1 (1.1)	1 (1.3)	1 (1.5)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC $\geq$ 0.25 μ g/ml.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2002-2021

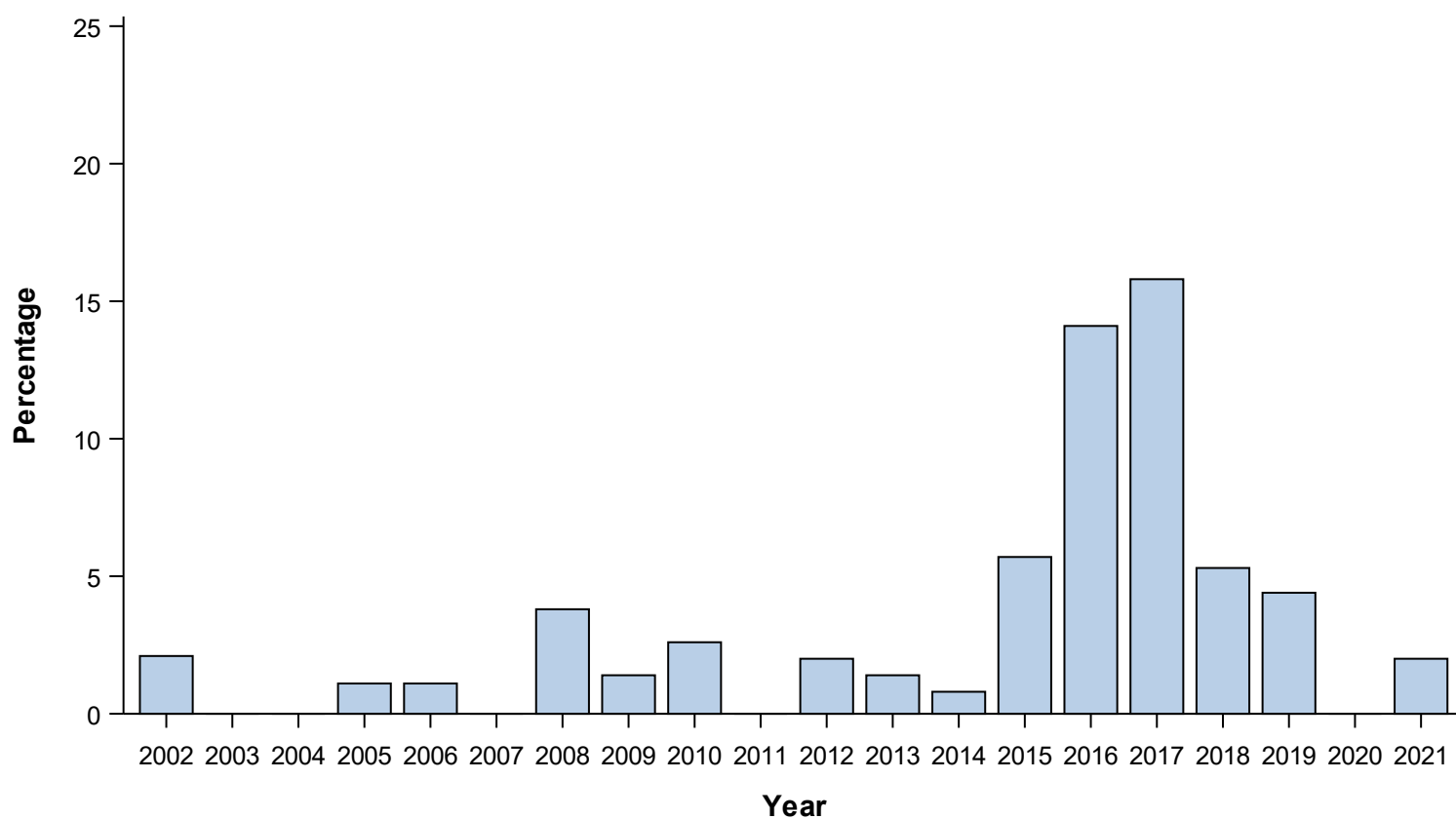


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	1 (1.6)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	1 (0.8)	3 (2.4)	4 (3.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Honolulu, Hawaii, 2002-2021

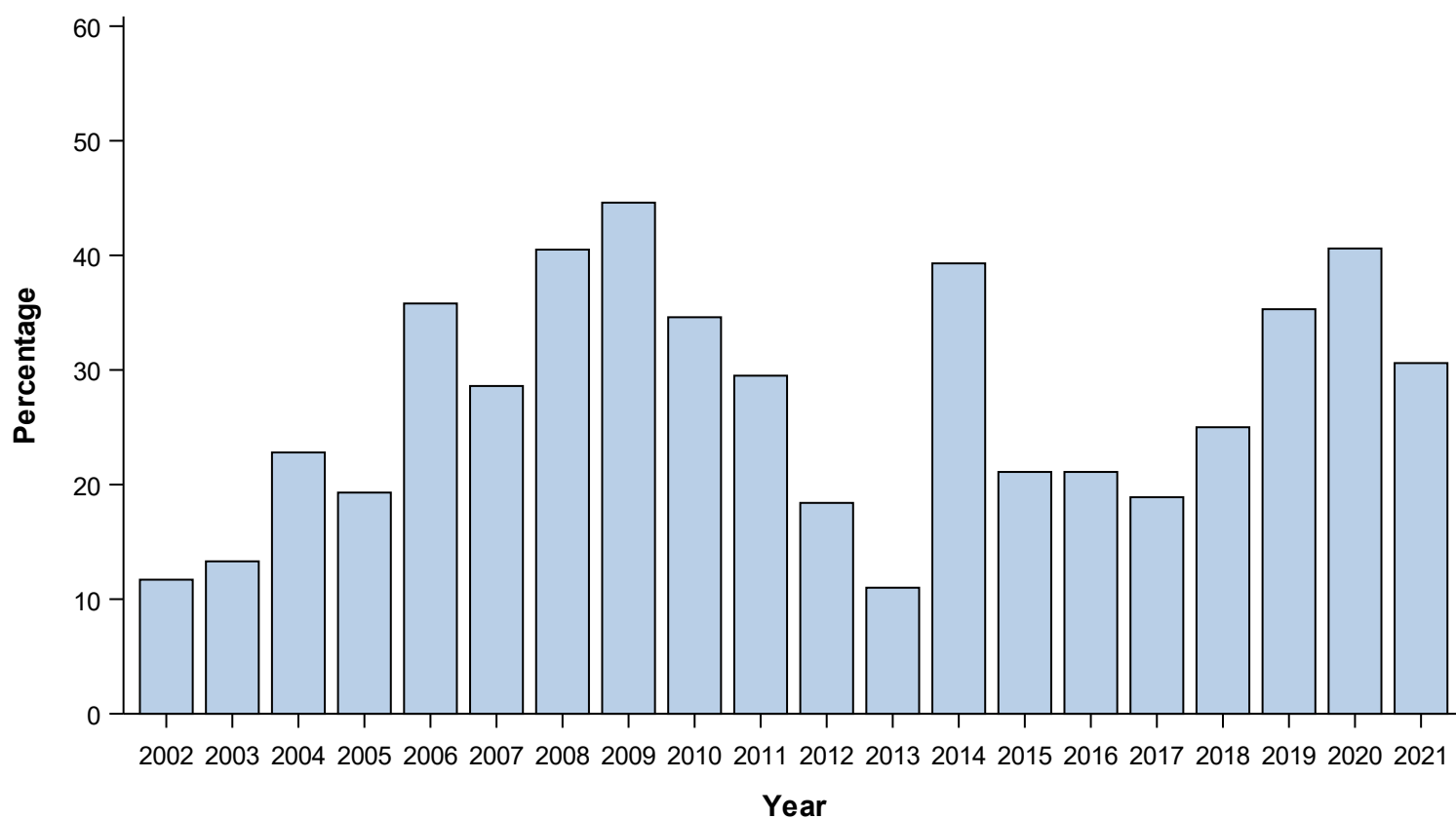


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
2 (2.1)	0 (0.0)	0 (0.0)	1 (1.1)	1 (1.1)	0 (0.0)	3 (3.8)	1 (1.4)	2 (2.6)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
2 (2.0)	1 (1.4)	1 (0.8)	7 (5.7)	18 (14.1)	15 (15.8)	4 (5.3)	3 (4.4)	0 (0.0)	1 (2.0)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Honolulu, Hawaii, 2002-2021

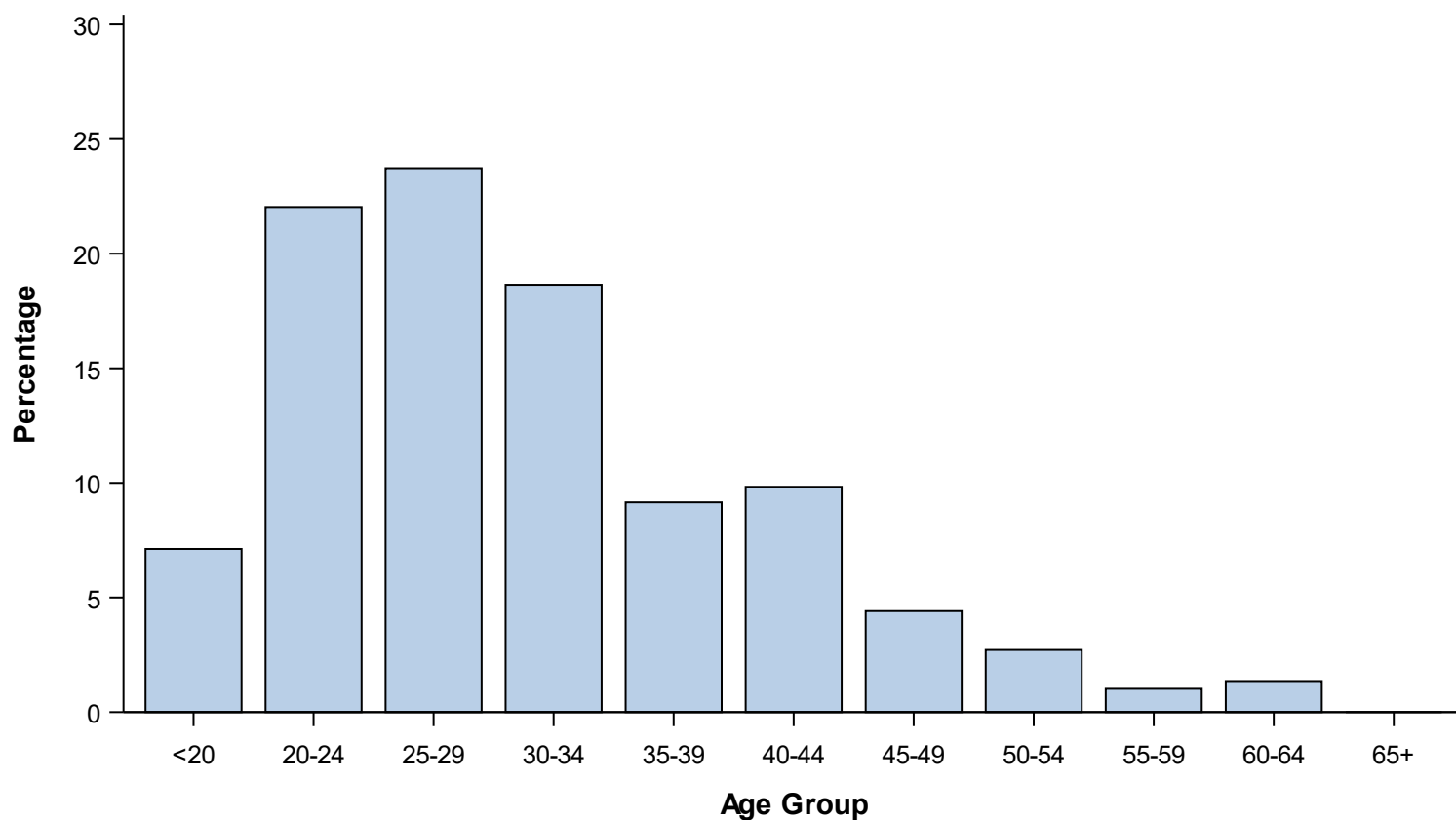


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
11 (11.7)	16 (13.3)	21 (22.8)	17 (19.3)	34 (35.8)	20 (28.6)	32 (40.5)	33 (44.6)	27 (34.6)	18 (29.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
18 (18.4)	8 (11.0)	48 (39.3)	26 (21.1)	27 (21.1)	18 (18.9)	19 (25.0)	24 (35.3)	13 (40.6)	15 (30.6)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

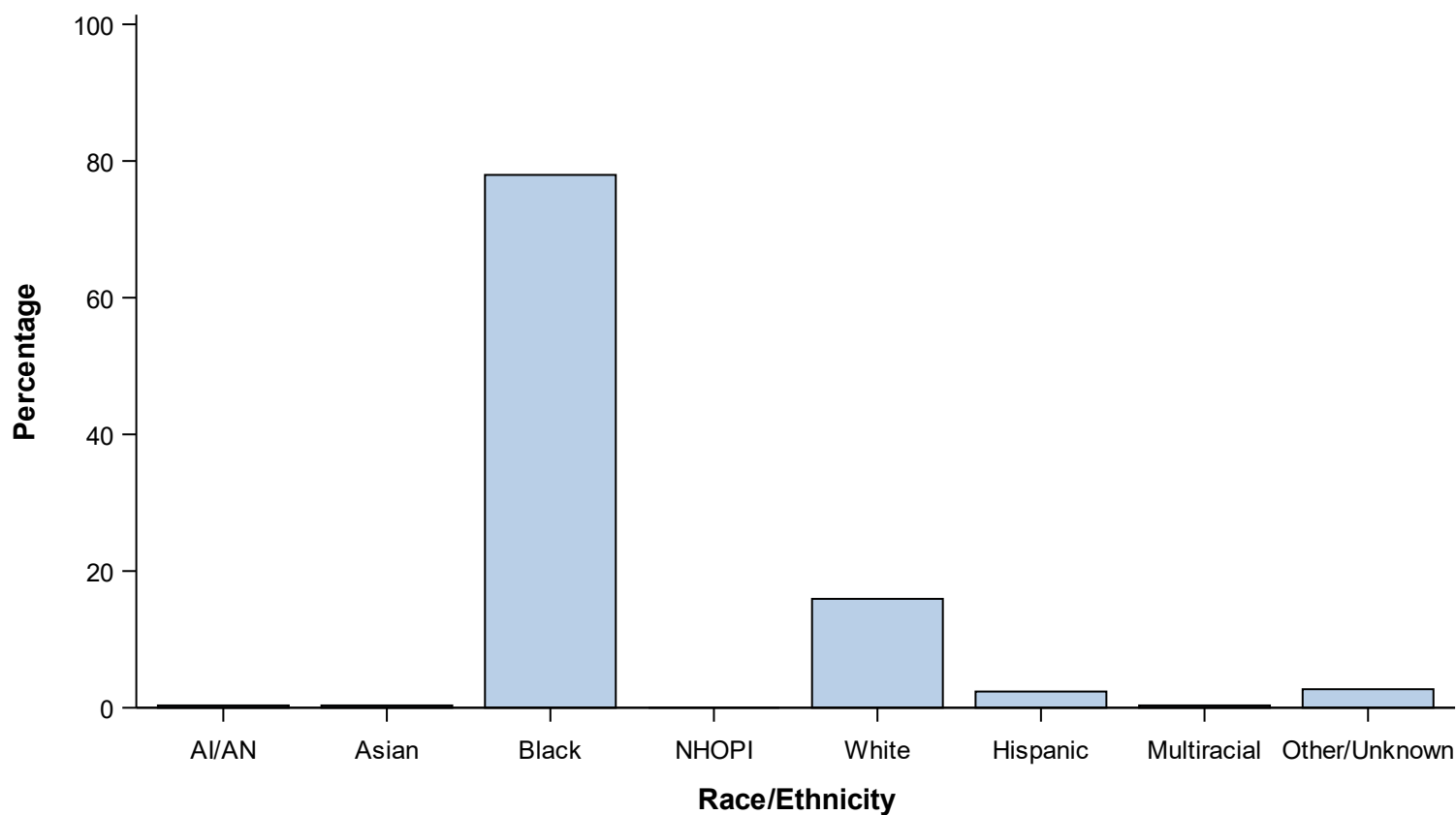
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
21 (7.1)	65 (22.0)	70 (23.7)	55 (18.6)	27 (9.2)	29 (9.8)	13 (4.4)	8 (2.7)	3 (1.0)	4 (1.4)	0 (0.0)	295

Note: Cases with unknown age were excluded.

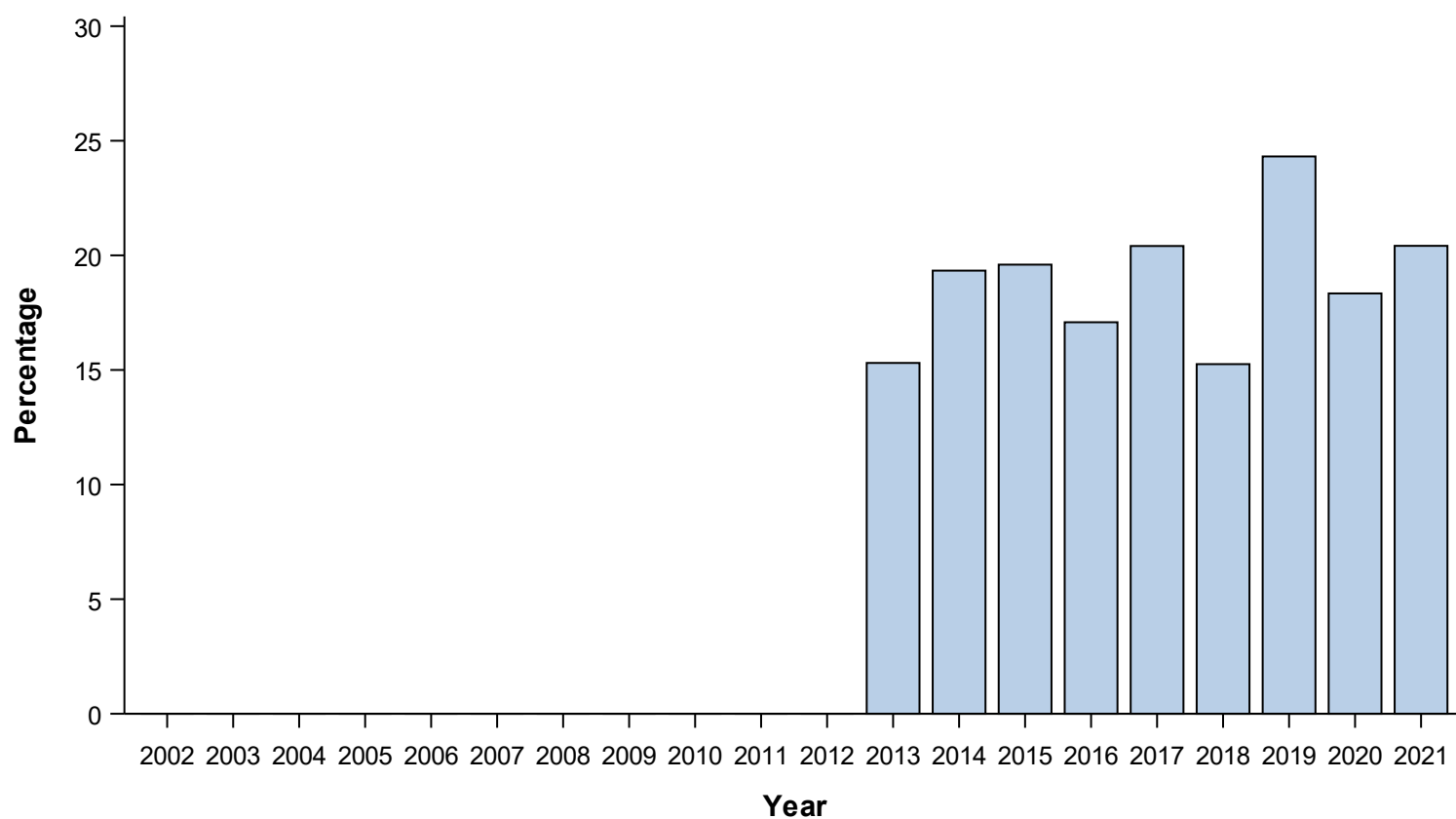
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
1 (0.3)	1 (0.3)	230 (78.0)	0 (0.0)	47 (15.9)	7 (2.4)	1 (0.3)	8 (2.7)	295

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Indianapolis, Indiana, 2002-2021



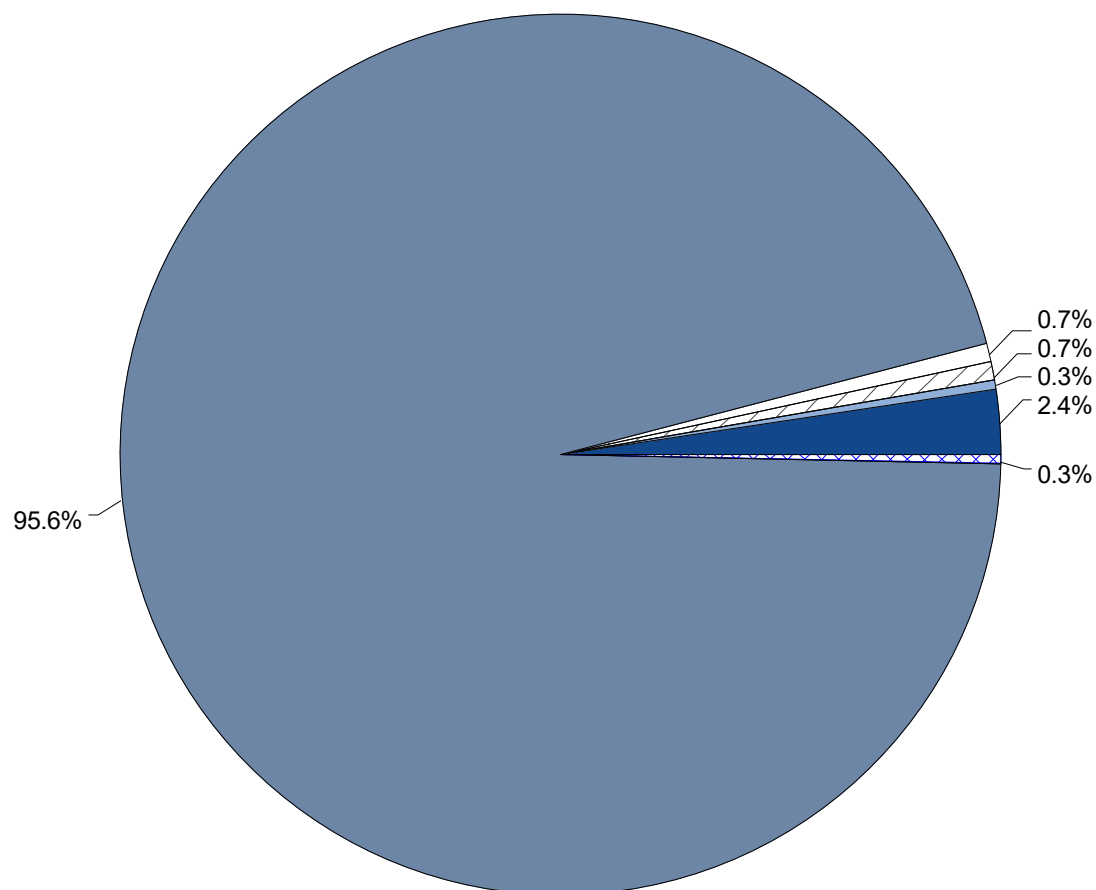
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	45 (15.3)	58 (19.3)	58 (19.6)	48 (17.1)	60 (20.4)	45 (15.3)	71 (24.3)	53 (18.3)	59 (20.4)

Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Site participated in GISP during 2013-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

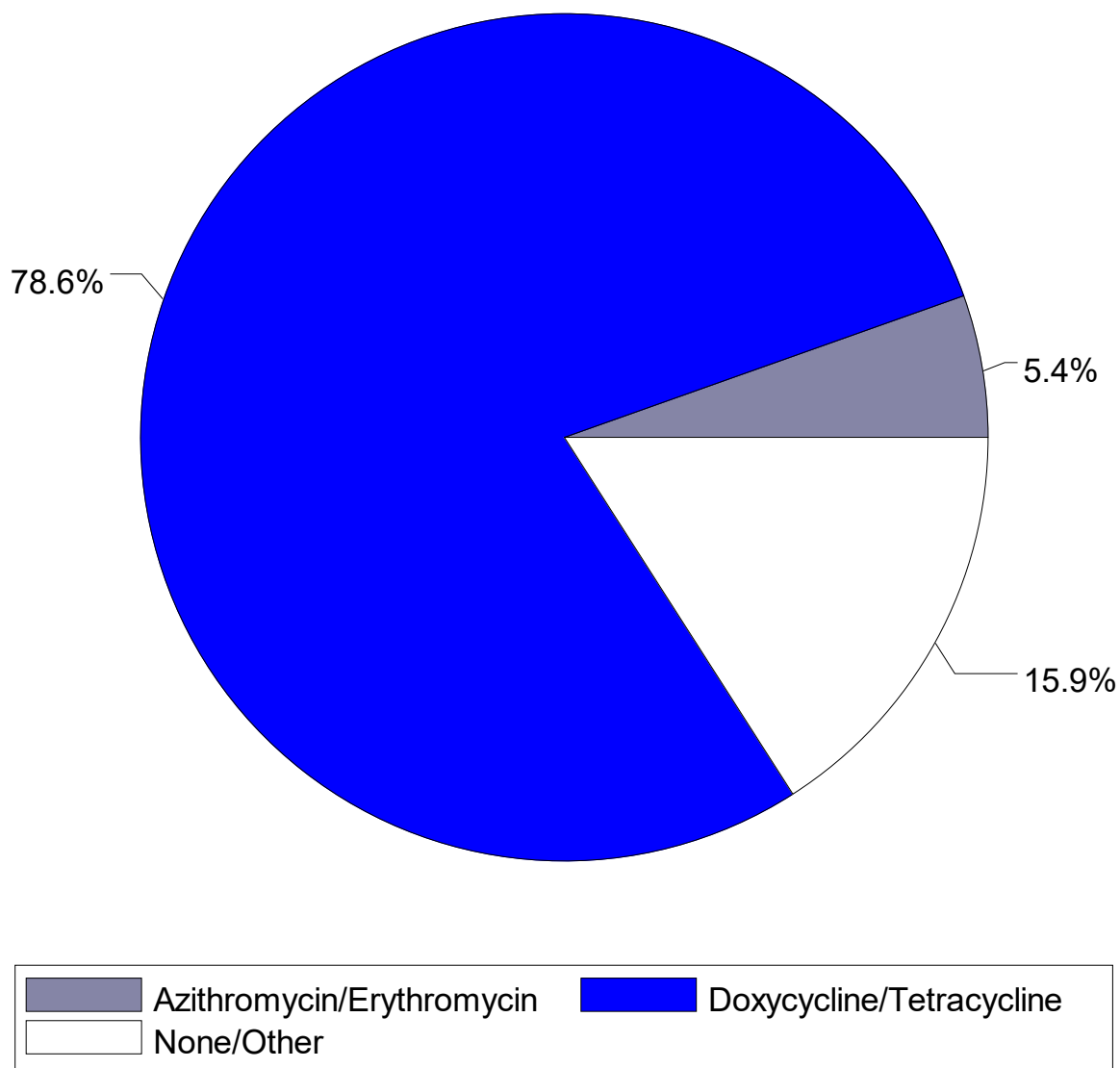
Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2021



 None	 Ceftriaxone 250 mg	 Cefixime 400 mg
 Gentamicin 240 mg	 Ceftriaxone 500 mg	 Ceftriaxone 1 gm

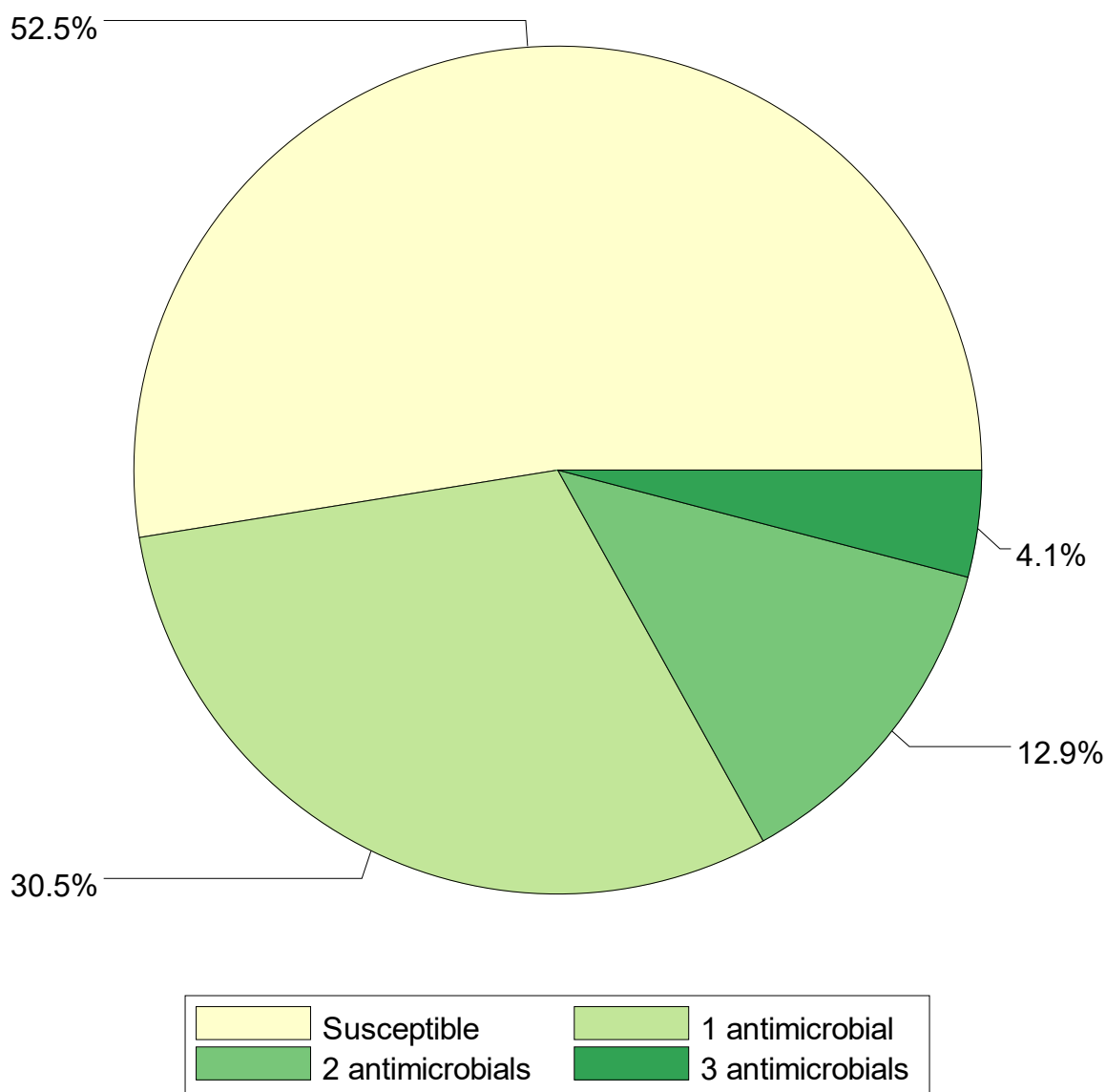
Primary Treatment	Count	Percentage
None	7	2.4
Ceftriaxone 250 mg	1	0.3
Cefixime 400 mg	2	0.7
Gentamicin 240 mg	2	0.7
Ceftriaxone 500 mg	282	95.6
Ceftriaxone 1 gm	1	0.3

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	16	5.4
Doxycycline/Tetracycline	232	78.6
None/Other	47	15.9

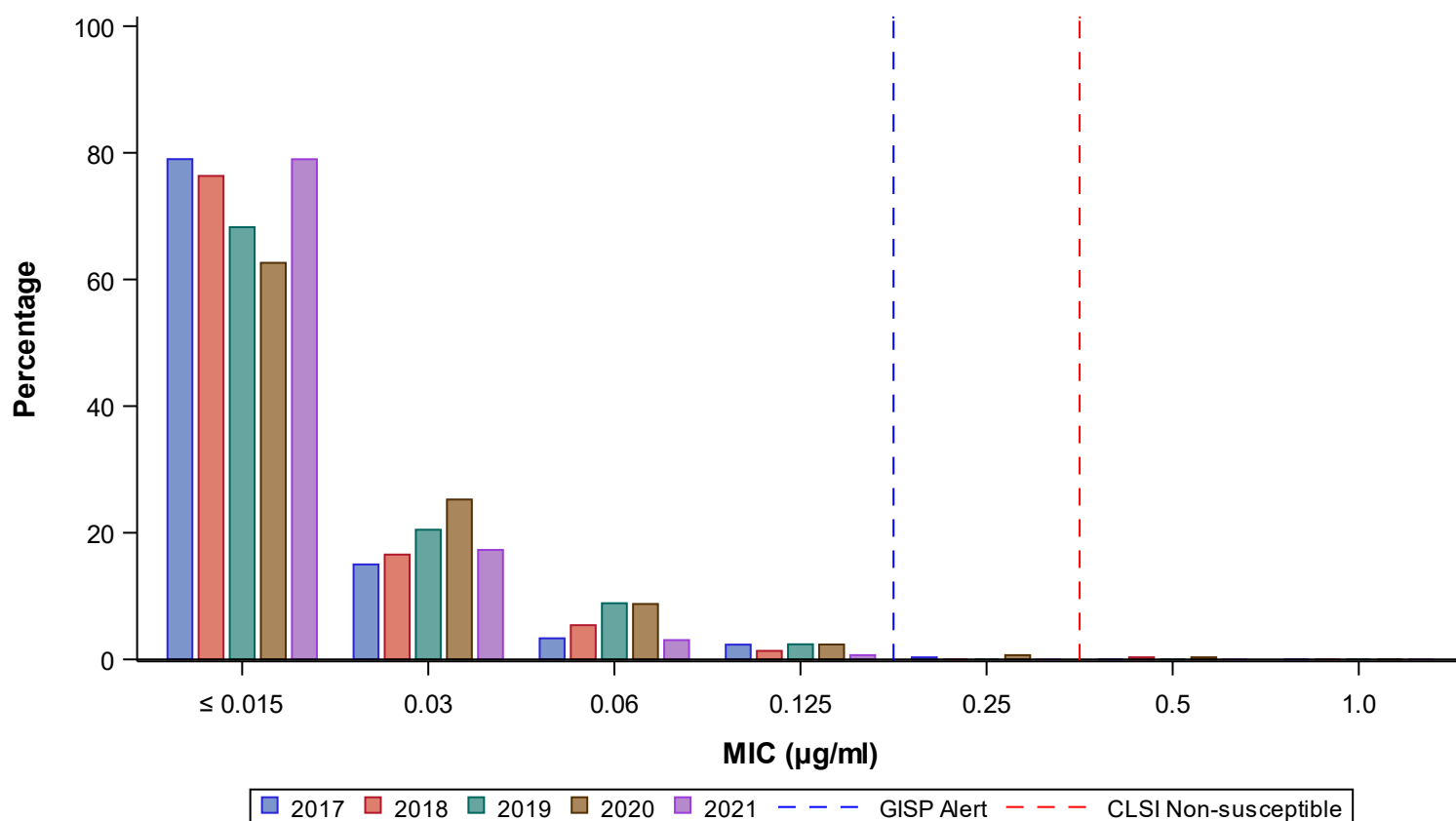
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	155	52.5
1 antimicrobial	90	30.5
2 antimicrobials	38	12.9
3 antimicrobials	12	4.1
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2017-2021



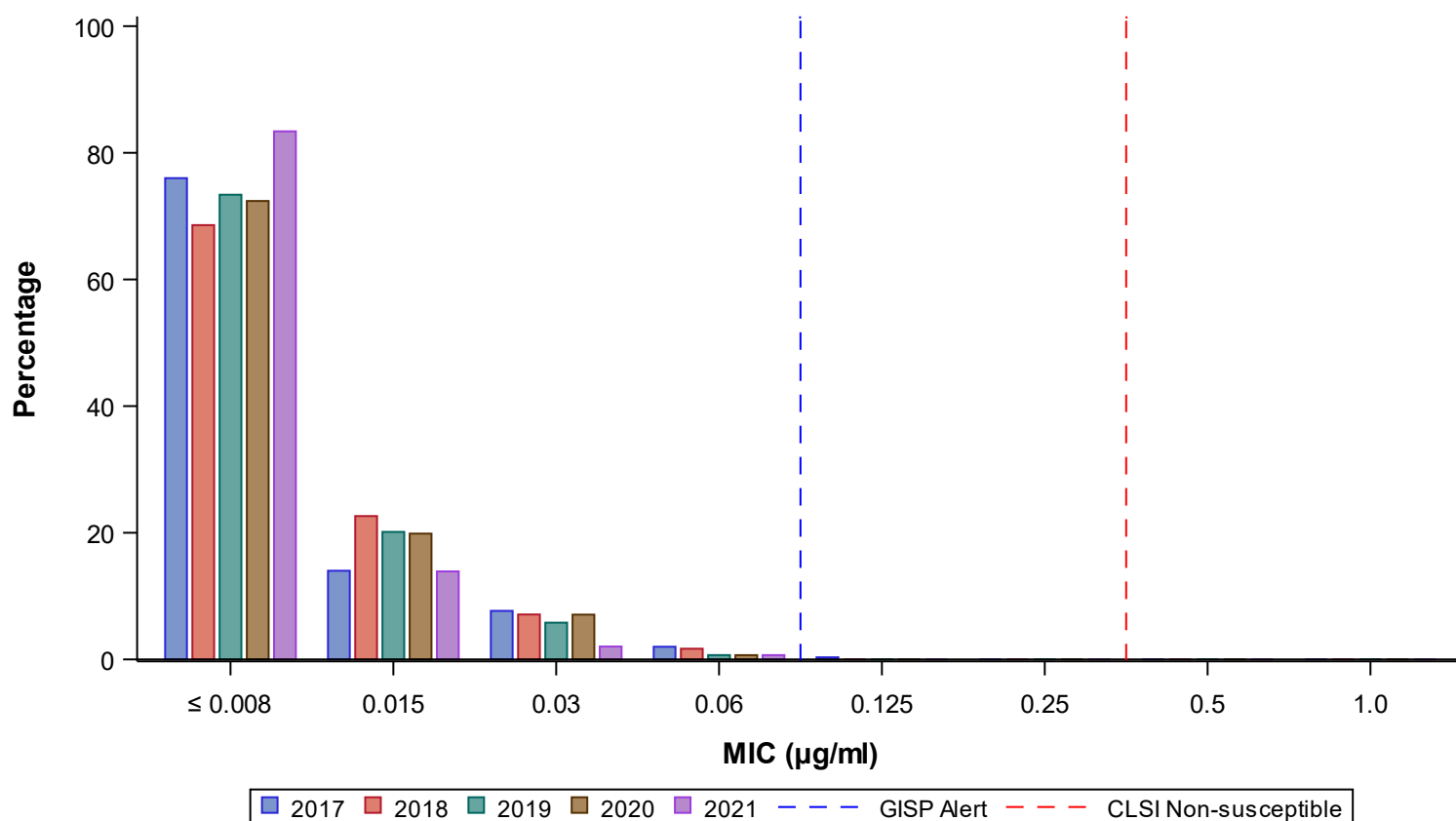
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	237 (79.0)	45 (15.0)	10 (3.3)	7 (2.3)	1 (0.3)	0 (0.0)	0 (0.0)	300
2018	226 (76.4)	49 (16.6)	16 (5.4)	4 (1.4)	0 (0.0)	1 (0.3)	0 (0.0)	296
2019	200 (68.3)	60 (20.5)	26 (8.9)	7 (2.4)	0 (0.0)	0 (0.0)	0 (0.0)	293
2020	186 (62.6)	75 (25.3)	26 (8.8)	7 (2.4)	2 (0.7)	1 (0.3)	0 (0.0)	297
2021	233 (79.0)	51 (17.3)	9 (3.1)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	295

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	228 (76.0)	42 (14.0)	23 (7.7)	6 (2.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	300
2018	203 (68.6)	67 (22.6)	21 (7.1)	5 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	296
2019	215 (73.4)	59 (20.1)	17 (5.8)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	293
2020	215 (72.4)	59 (19.9)	21 (7.1)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	297
2021	246 (83.4)	41 (13.9)	6 (2.0)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	295

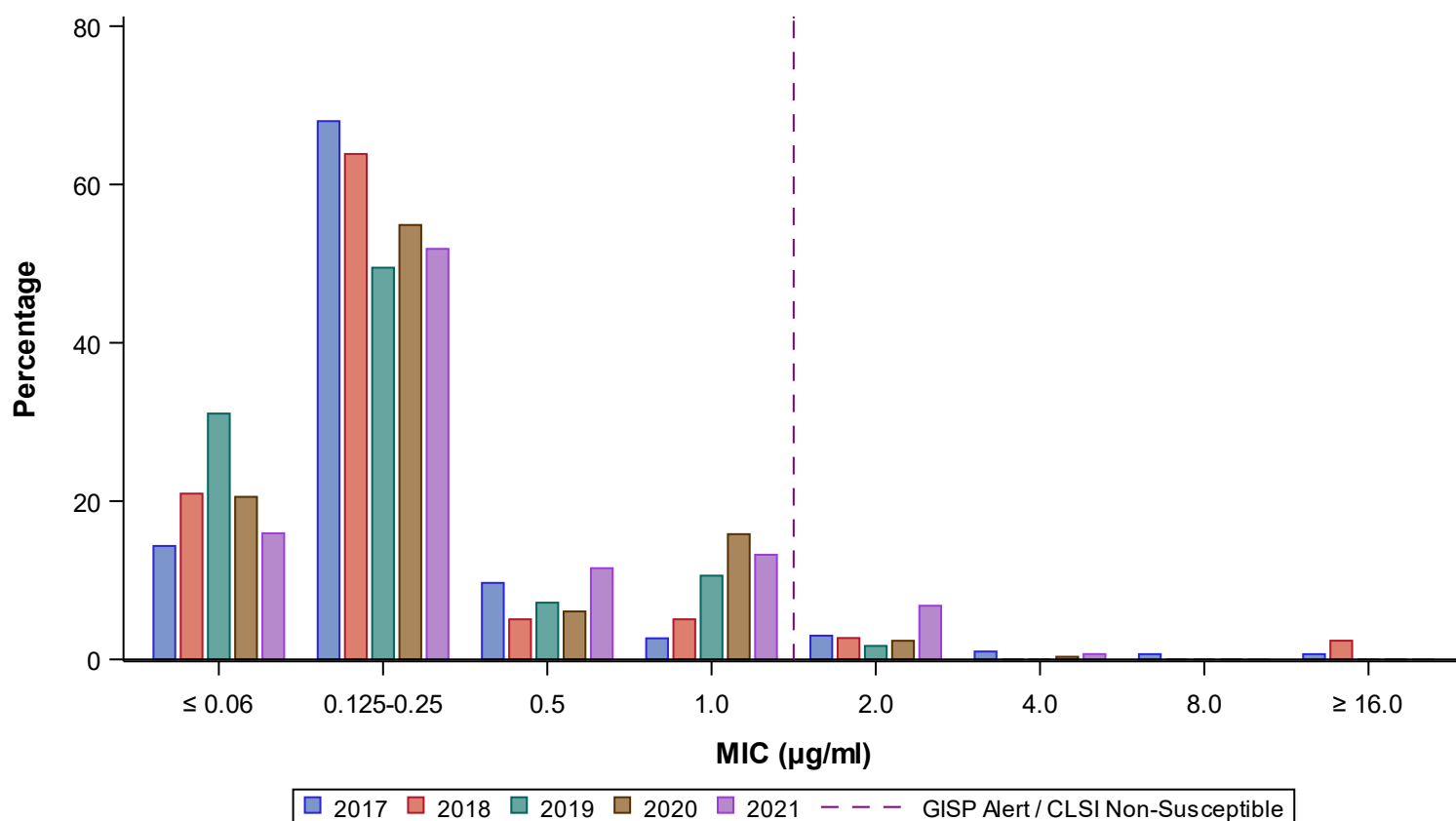
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	43 (14.3)	204 (68.0)	29 (9.7)	8 (2.7)	9 (3.0)	3 (1.0)	2 (0.7)	2 (0.7)	300
2018	62 (20.9)	189 (63.9)	15 (5.1)	15 (5.1)	8 (2.7)	0 (0.0)	0 (0.0)	7 (2.4)	296
2019	91 (31.1)	145 (49.5)	21 (7.2)	31 (10.6)	5 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	293
2020	61 (20.5)	163 (54.9)	18 (6.1)	47 (15.8)	7 (2.4)	1 (0.3)	0 (0.0)	0 (0.0)	297
2021	47 (15.9)	153 (51.9)	34 (11.5)	39 (13.2)	20 (6.8)	2 (0.7)	0 (0.0)	0 (0.0)	295

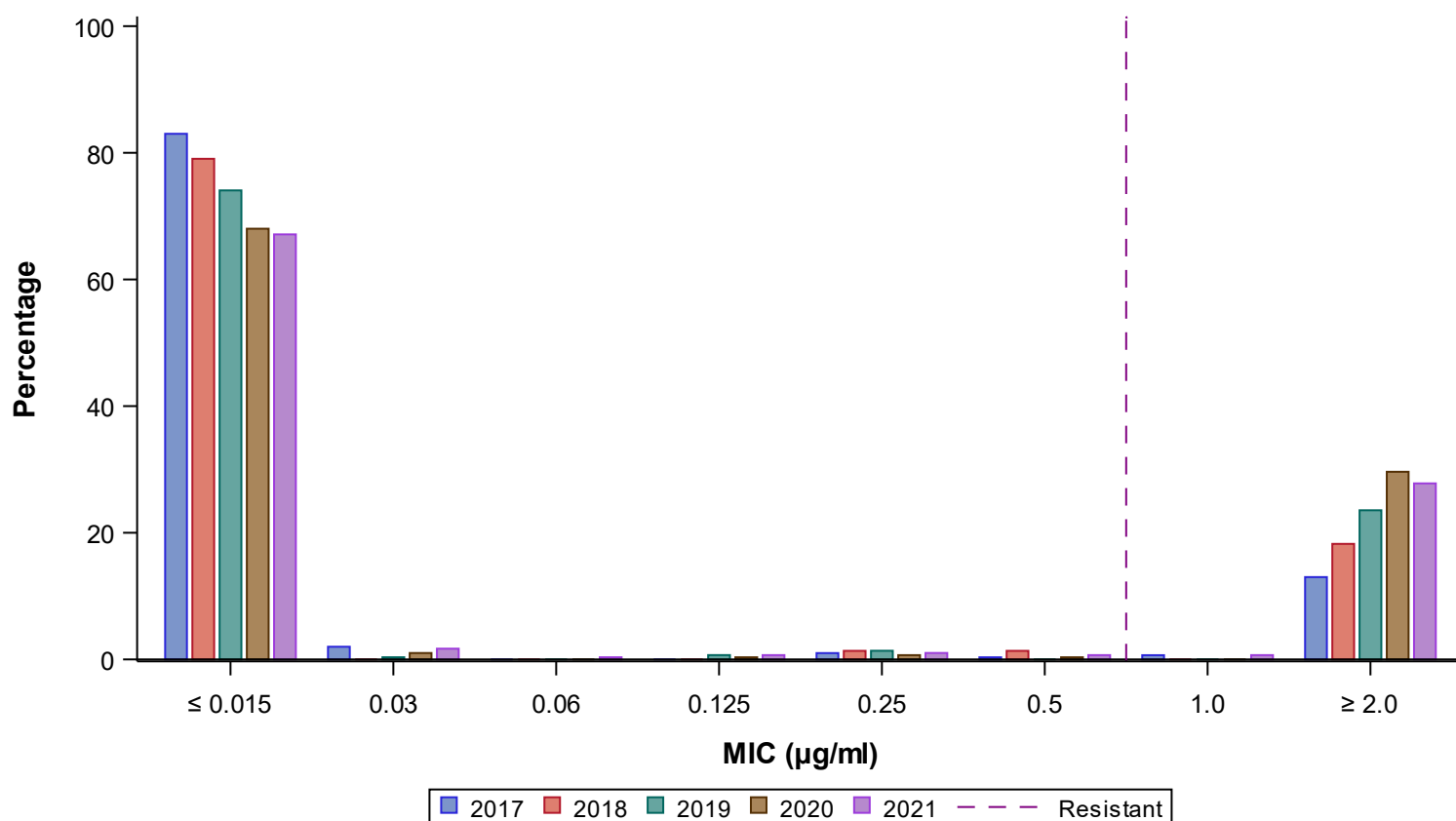
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

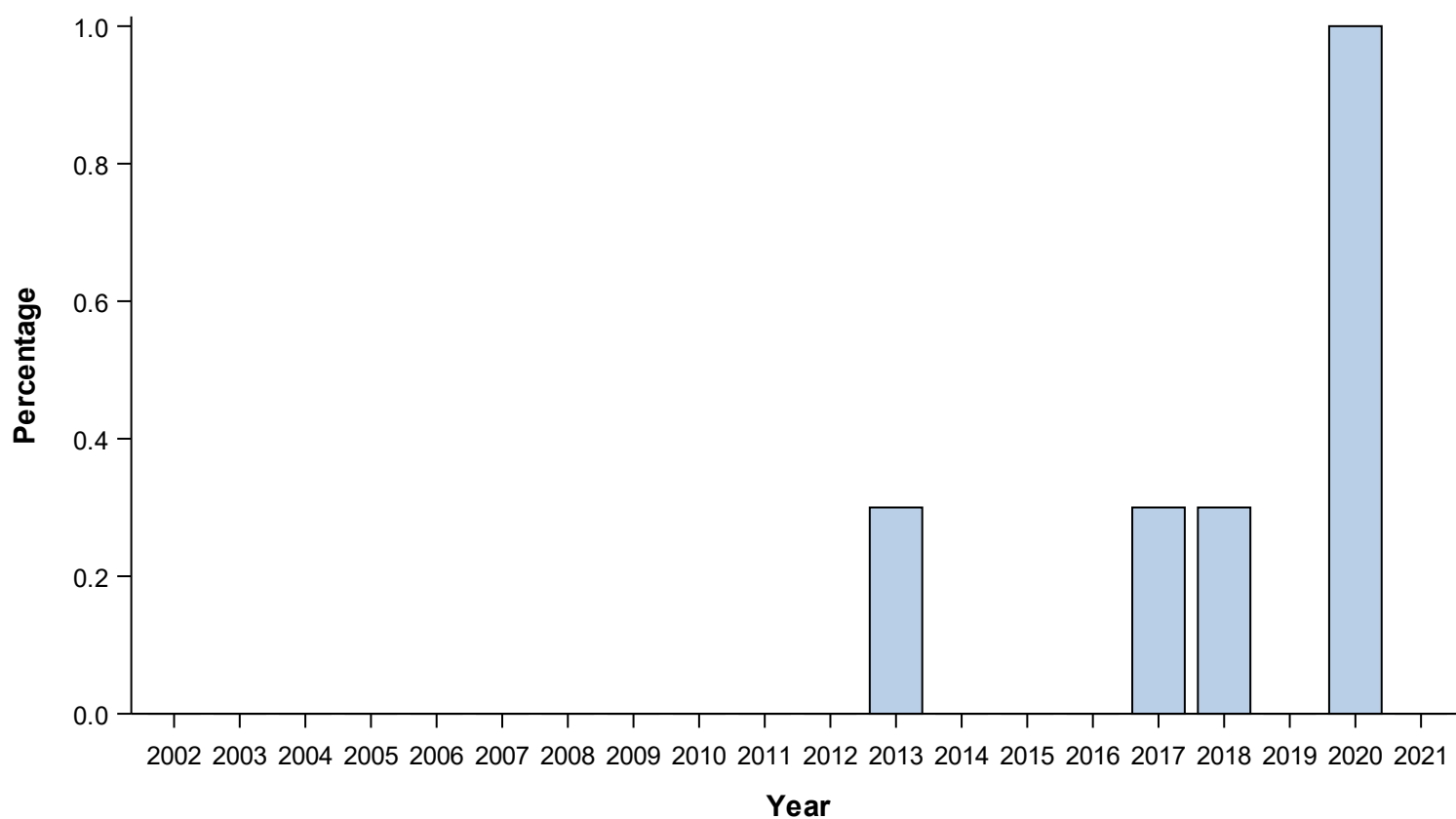
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	249 (83.0)	6 (2.0)	0 (0.0)	0 (0.0)	3 (1.0)	1 (0.3)	2 (0.7)	39 (13.0)	300
2018	234 (79.1)	0 (0.0)	0 (0.0)	0 (0.0)	4 (1.4)	4 (1.4)	0 (0.0)	54 (18.2)	296
2019	217 (74.1)	1 (0.3)	0 (0.0)	2 (0.7)	4 (1.4)	0 (0.0)	0 (0.0)	69 (23.5)	293
2020	202 (68.0)	3 (1.0)	0 (0.0)	1 (0.3)	2 (0.7)	1 (0.3)	0 (0.0)	88 (29.6)	297
2021	198 (67.1)	5 (1.7)	1 (0.3)	2 (0.7)	3 (1.0)	2 (0.7)	2 (0.7)	82 (27.8)	295

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2002-2021



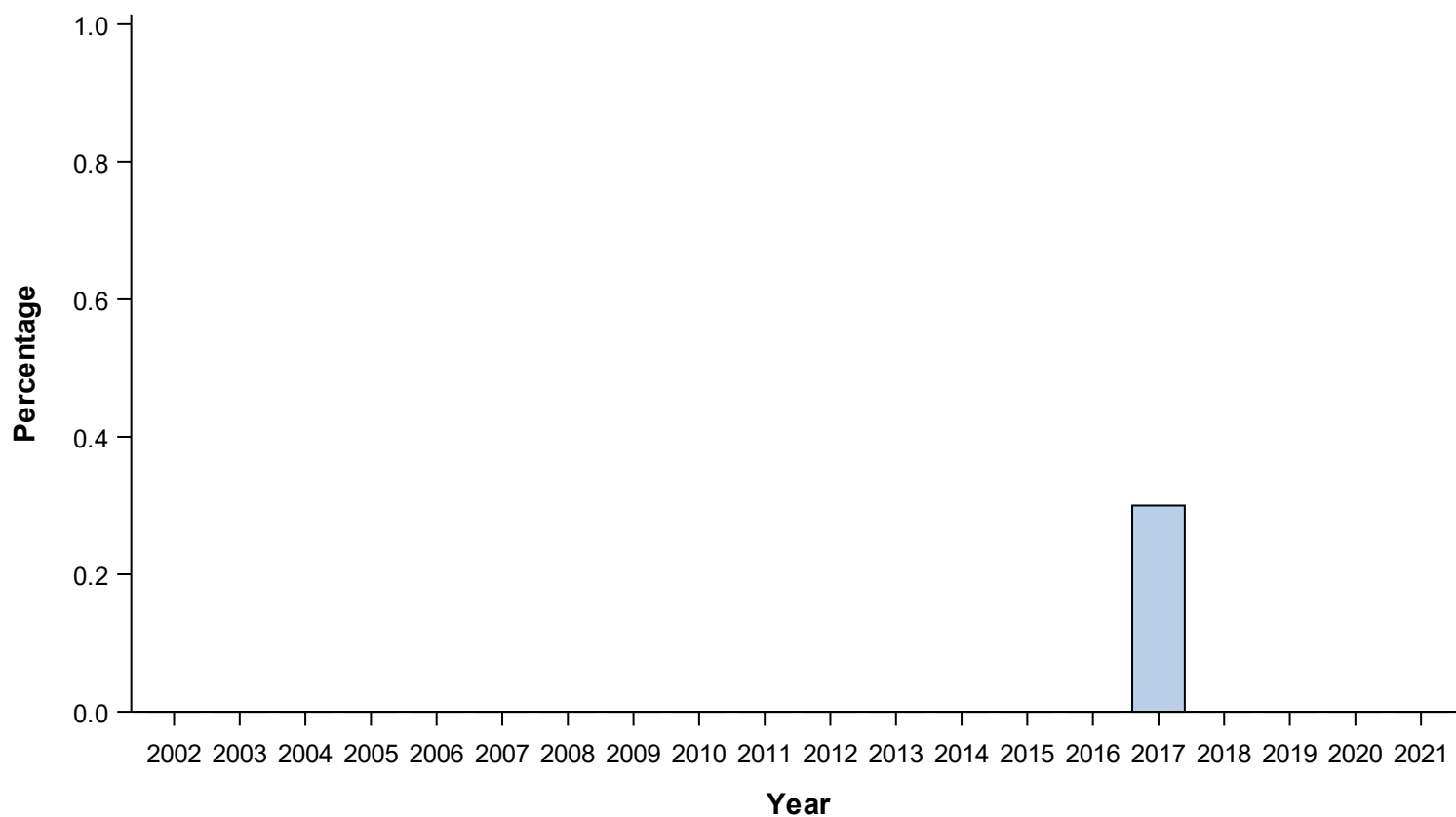
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.3)	1 (0.3)	0 (0.0)	3 (1.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2013-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2002-2021



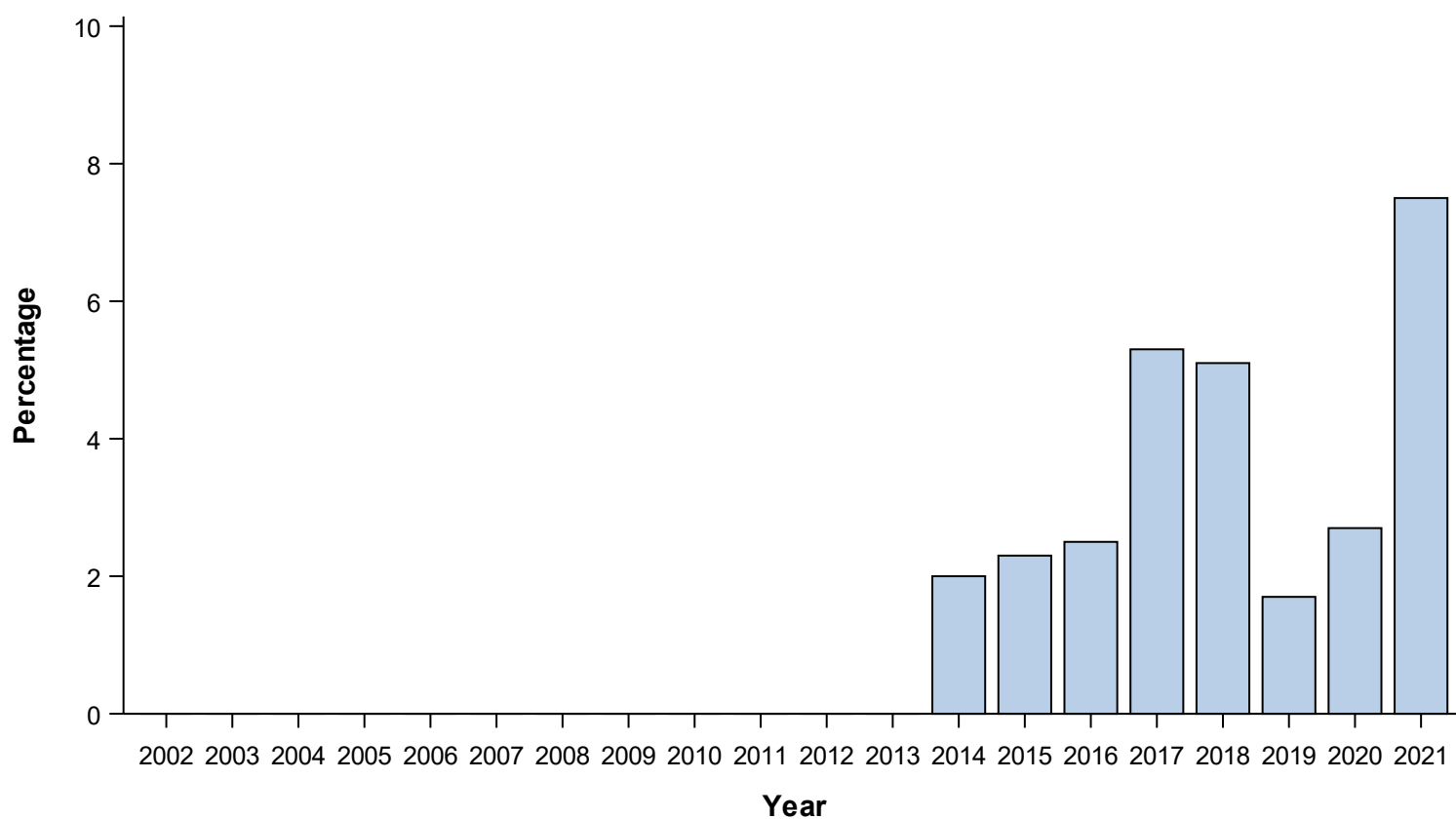
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2013-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Indianapolis, Indiana, 2002-2021



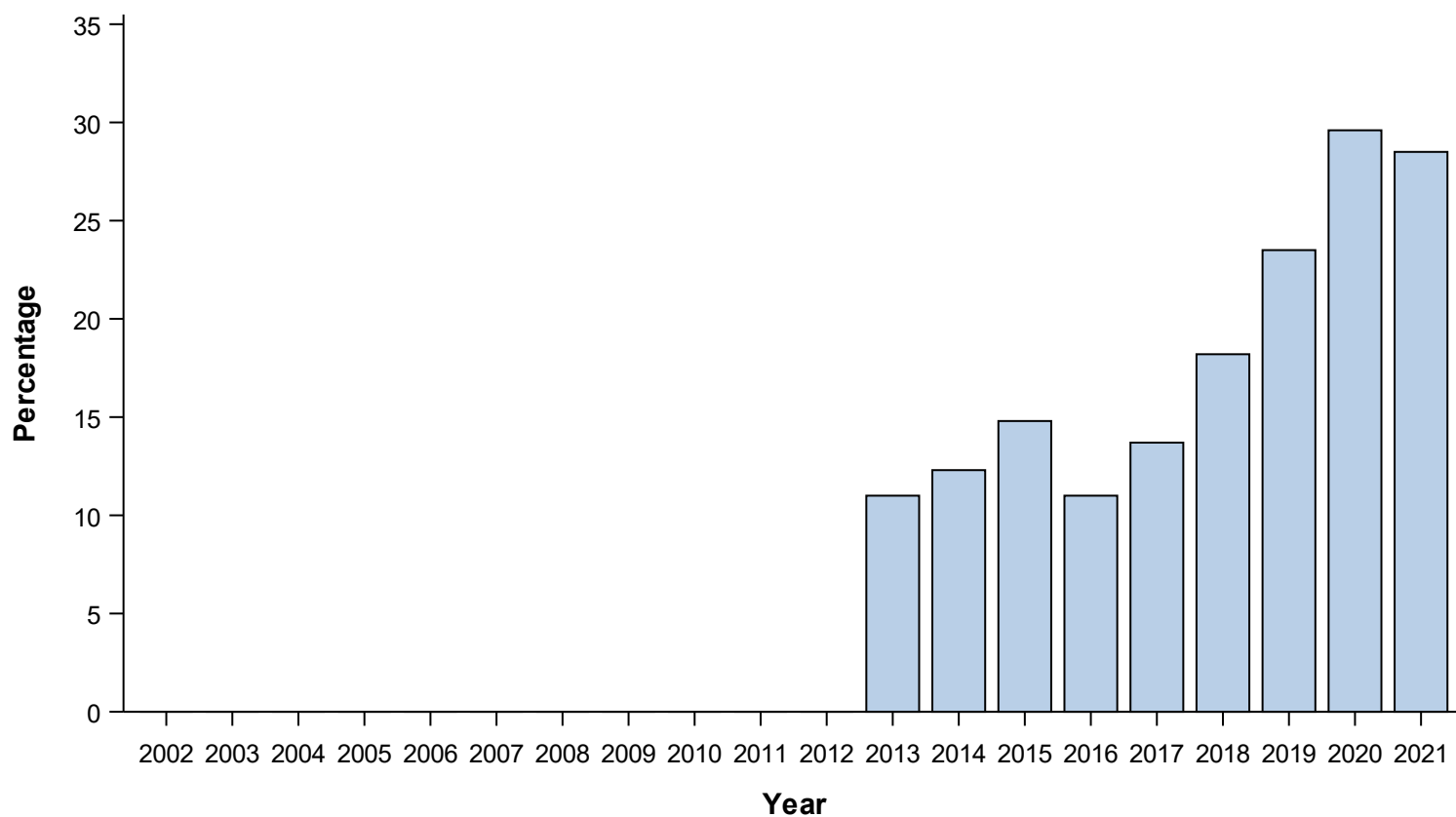
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	6 (2.0)	7 (2.3)	7 (2.5)	16 (5.3)	15 (5.1)	5 (1.7)	8 (2.7)	22 (7.5)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2013-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Indianapolis, Indiana, 2002-2021



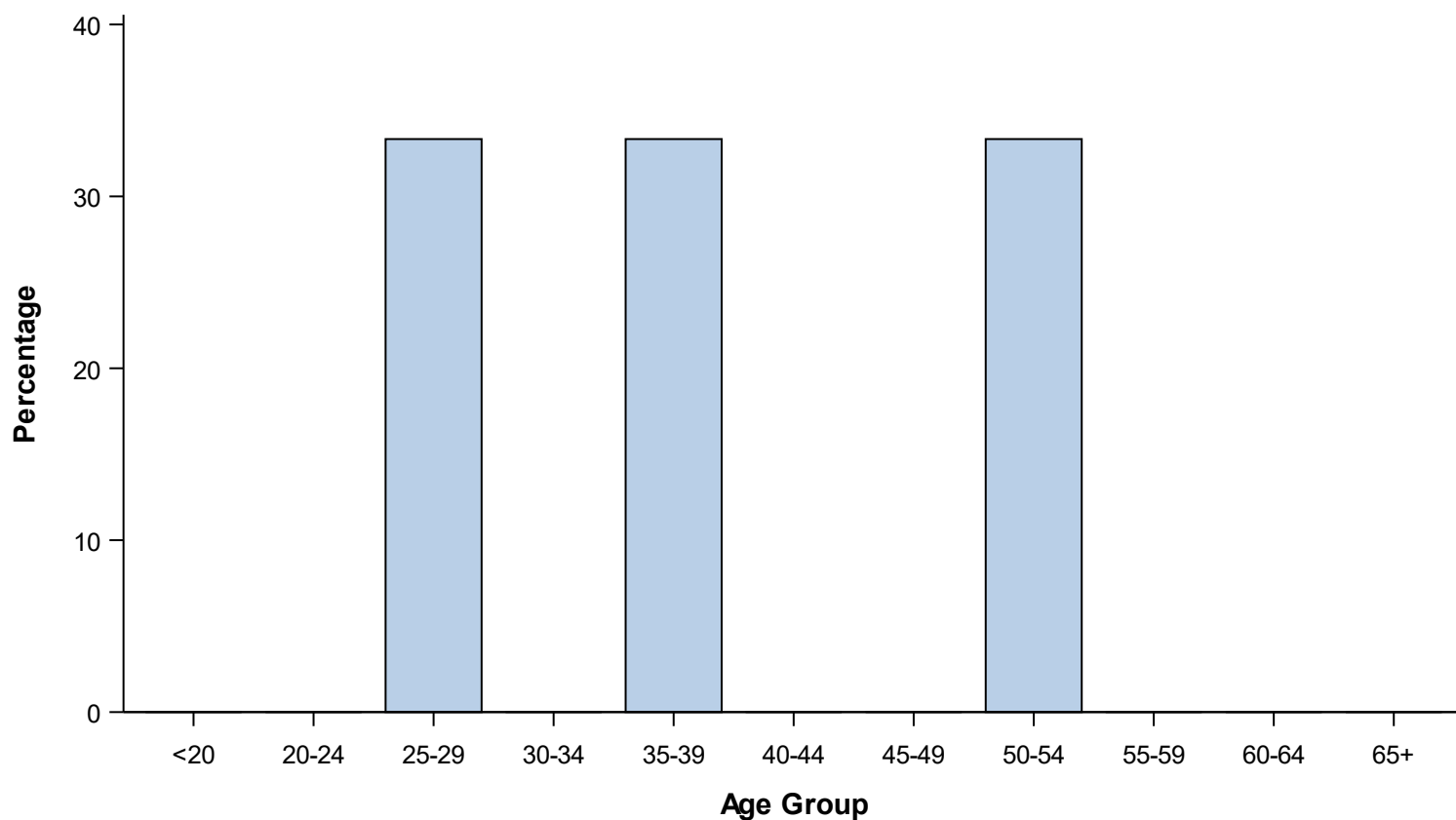
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	33 (11.0)	37 (12.3)	44 (14.8)	31 (11.0)	41 (13.7)	54 (18.2)	69 (23.5)	88 (29.6)	84 (28.5)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2013-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

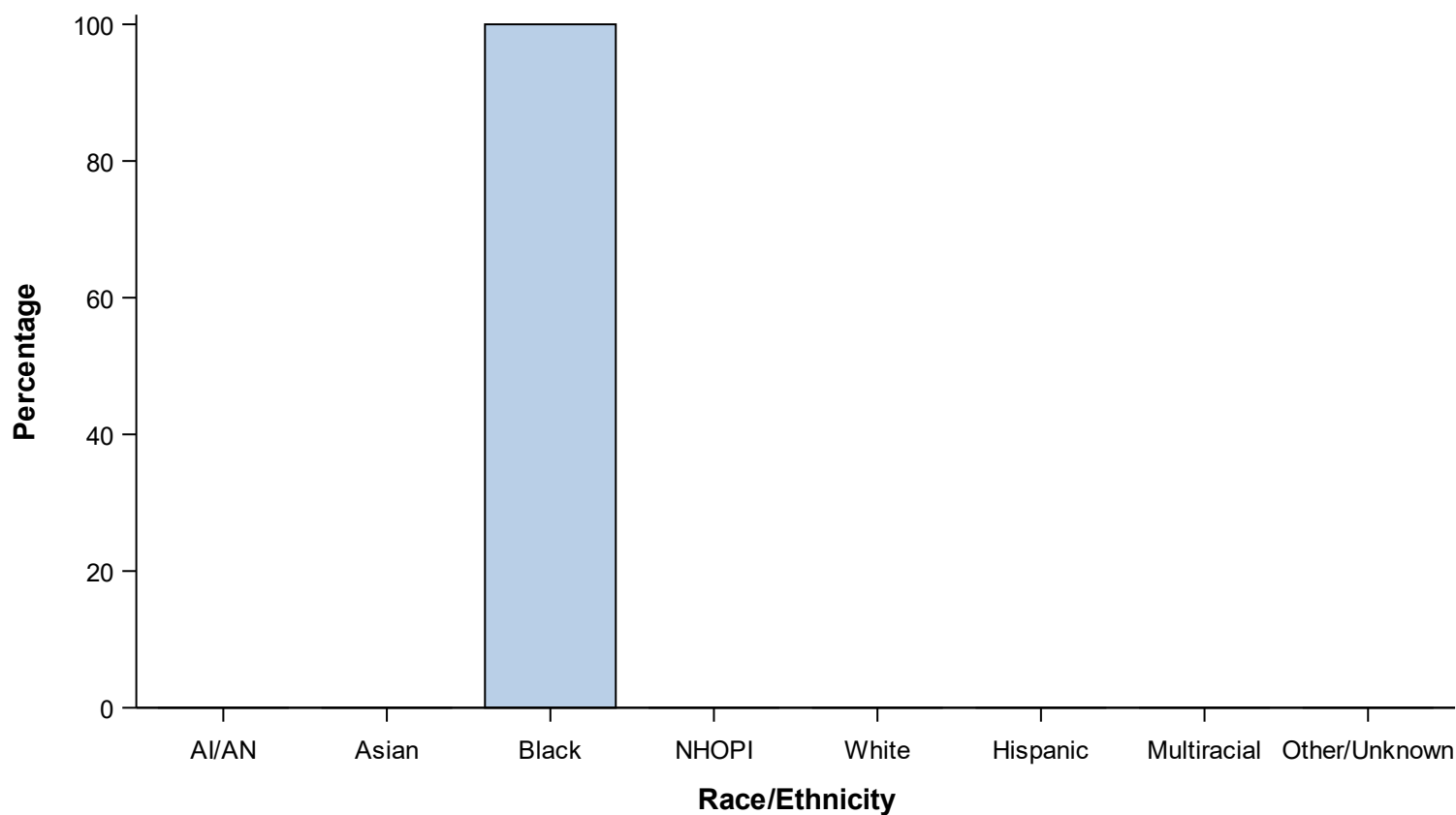
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Jackson, Mississippi, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
0 (0.0)	0 (0.0)	1 (33.3)	0 (0.0)	1 (33.3)	0 (0.0)	0 (0.0)	1 (33.3)	0 (0.0)	0 (0.0)	0 (0.0)	3

Note: Cases with unknown age were excluded.

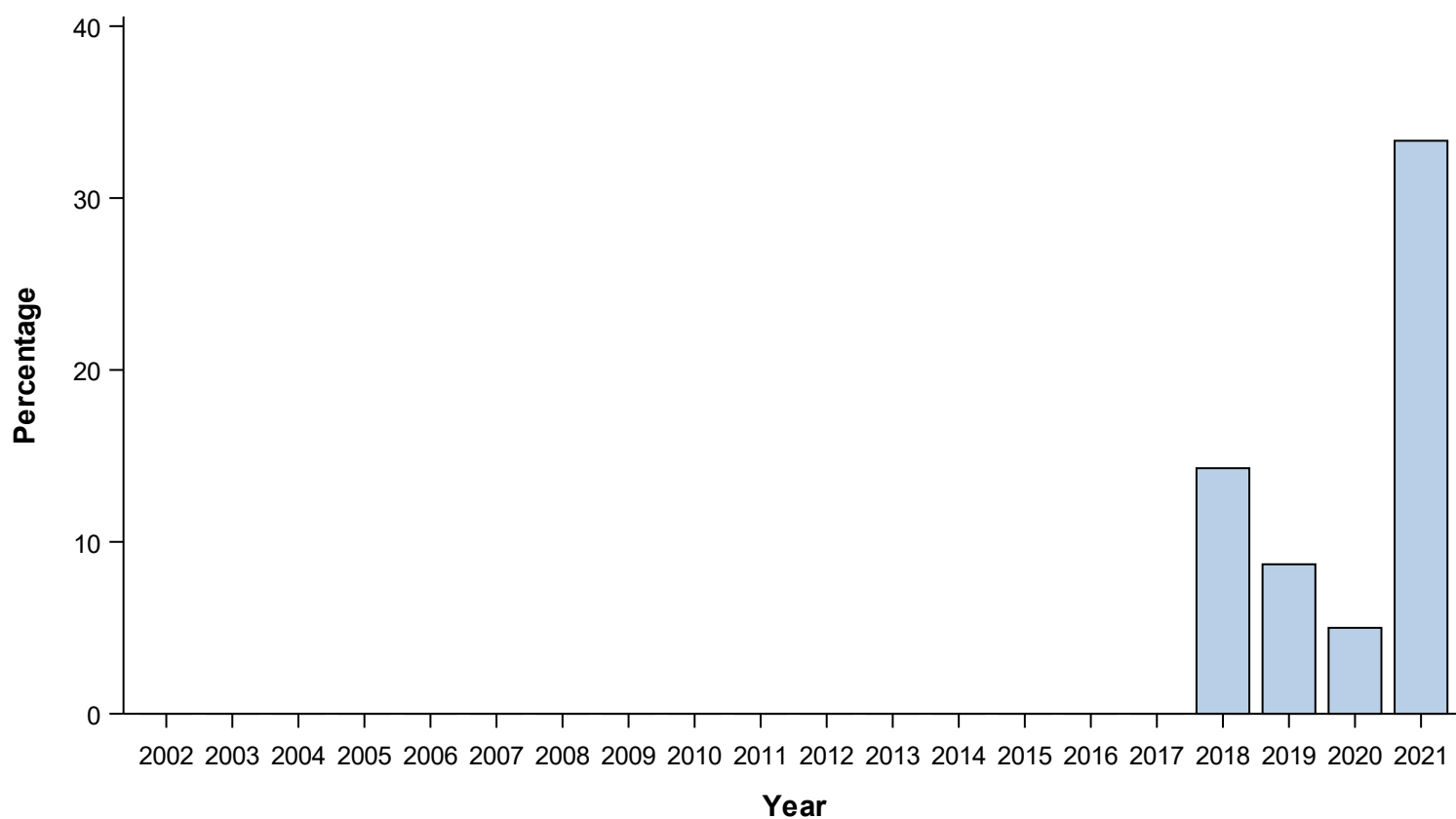
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Jackson, Mississippi, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	3 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Jackson, Mississippi, 2002-2021

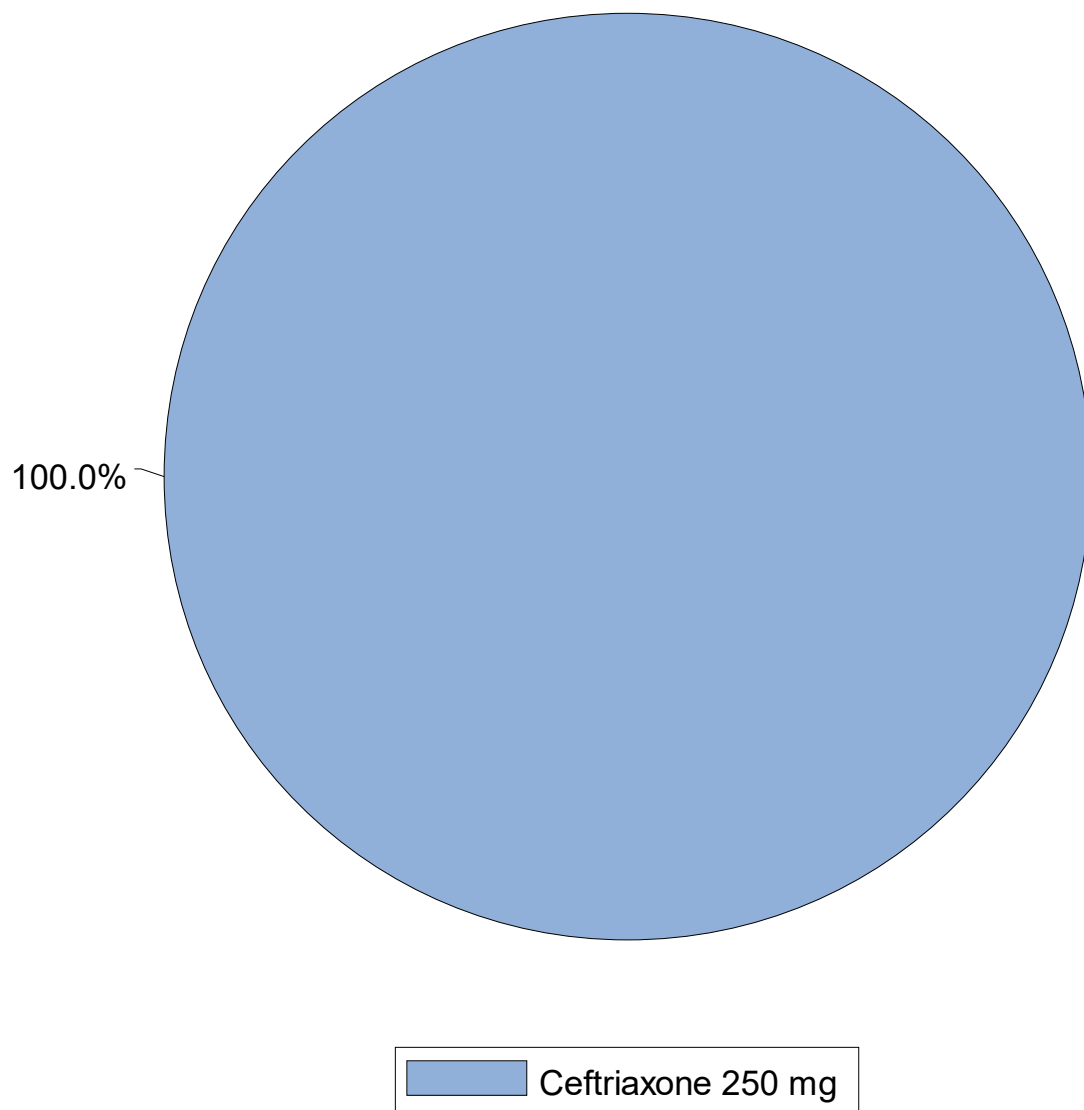


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (14.3)	8 (8.7)	1 (5.0)	1 (33.3)

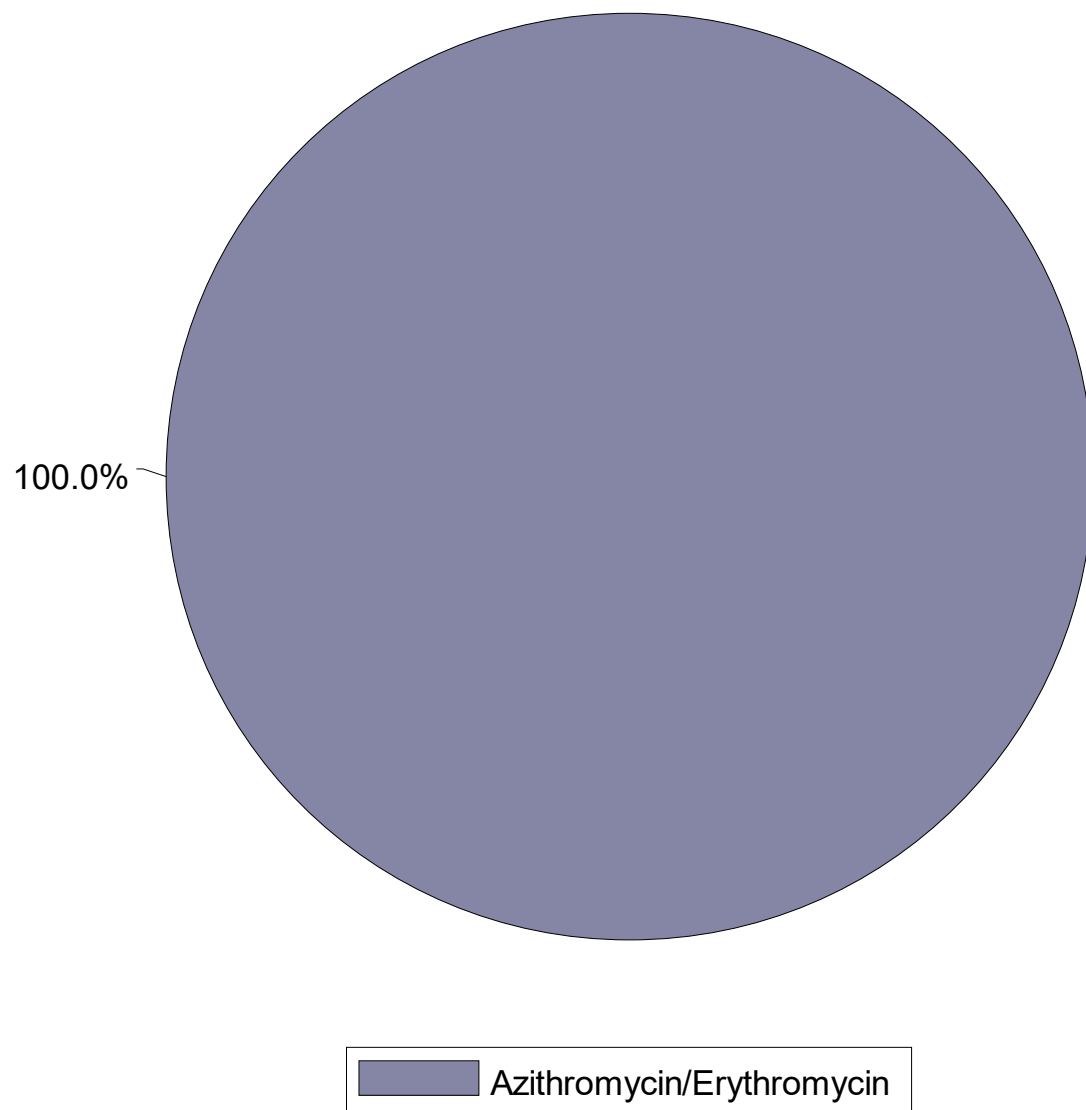
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.
Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Jackson, Mississippi, 2021



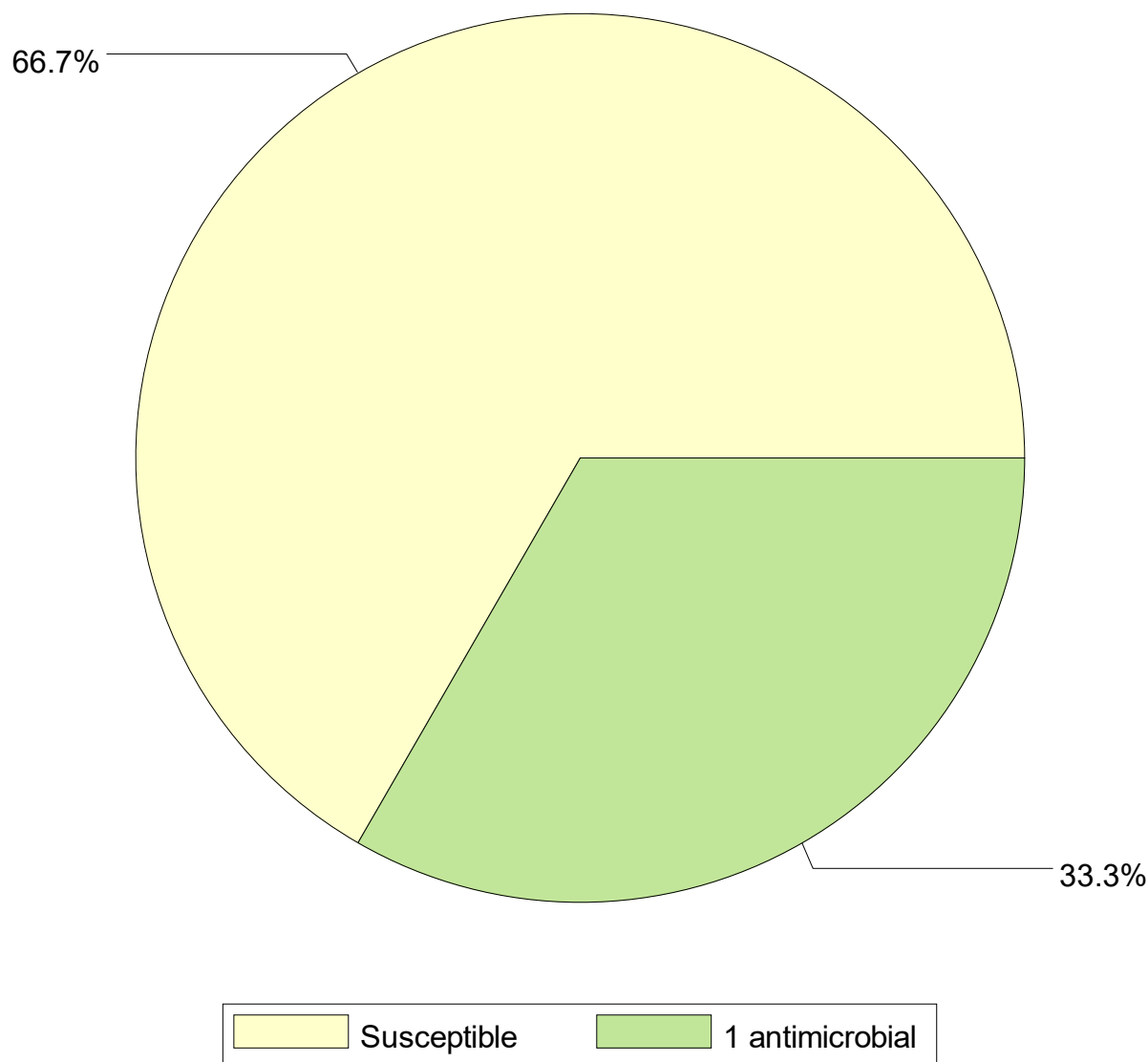
Primary Treatment	Count	Percentage
Ceftriaxone 250 mg	3	100.0

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Jackson, Mississippi, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	3	100.0

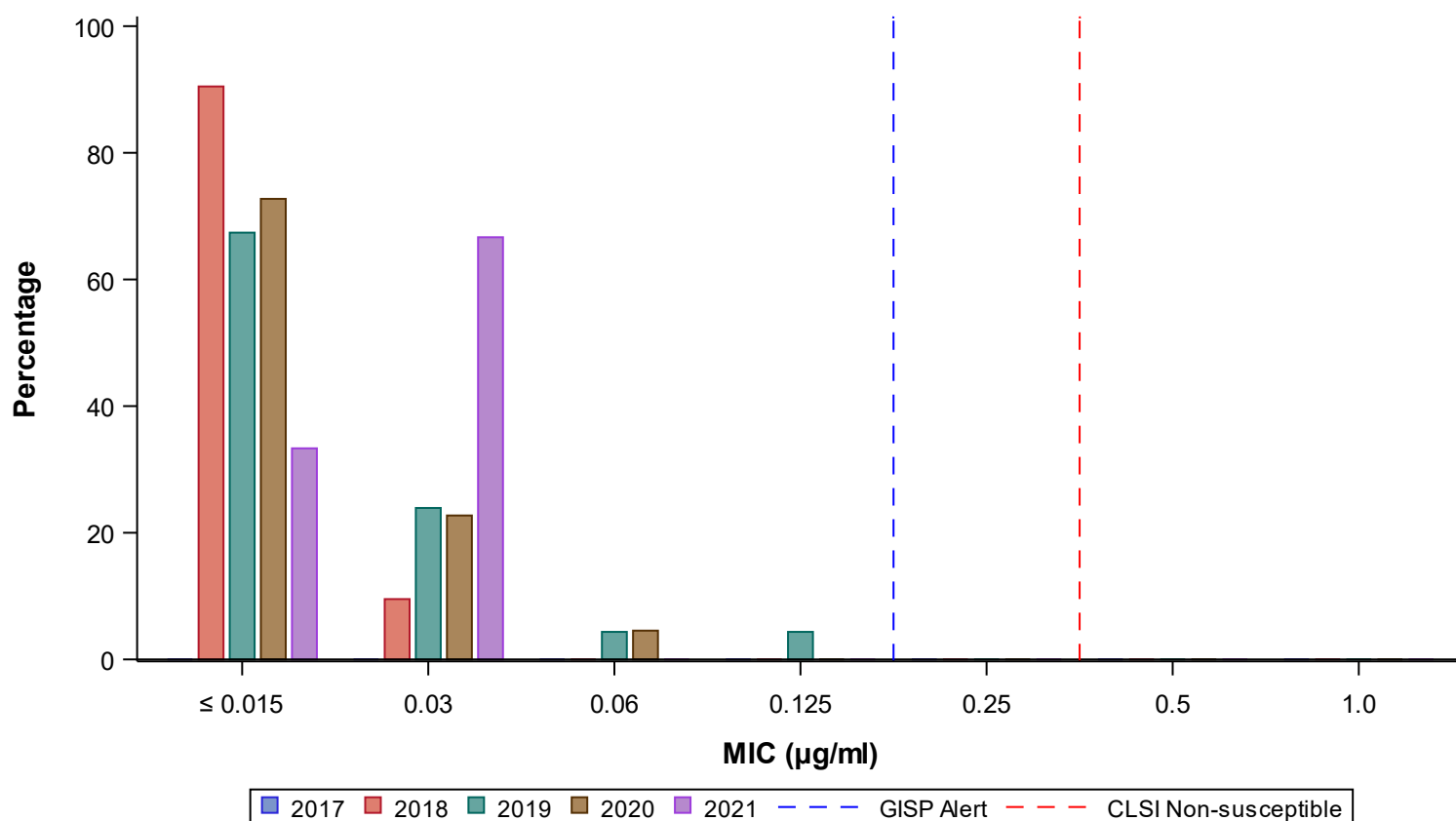
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Jackson, Mississippi, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	2	66.7
1 antimicrobial	1	33.3
2 antimicrobials	0	0.0
3 antimicrobials	0	0.0
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Jackson, Mississippi, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	19 (90.5)	2 (9.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	21
2019	62 (67.4)	22 (23.9)	4 (4.3)	4 (4.3)	0 (0.0)	0 (0.0)	0 (0.0)	92
2020	16 (72.7)	5 (22.7)	1 (4.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	22
2021	1 (33.3)	2 (66.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

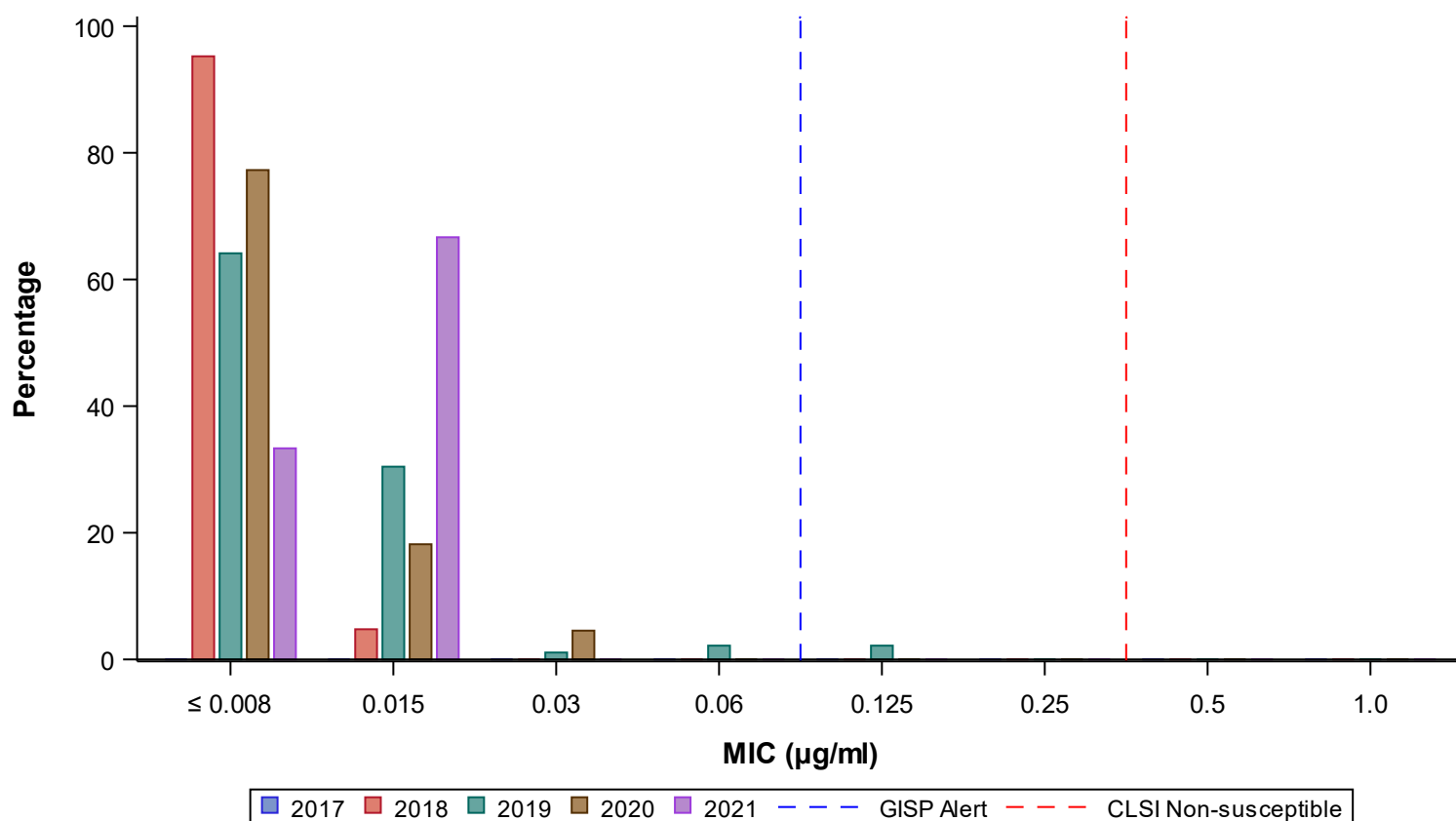
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Jackson, Mississippi, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	20 (95.2)	1 (4.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	21
2019	59 (64.1)	28 (30.4)	1 (1.1)	2 (2.2)	2 (2.2)	0 (0.0)	0 (0.0)	0 (0.0)	92
2020	17 (77.3)	4 (18.2)	1 (4.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	22
2021	1 (33.3)	2 (66.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

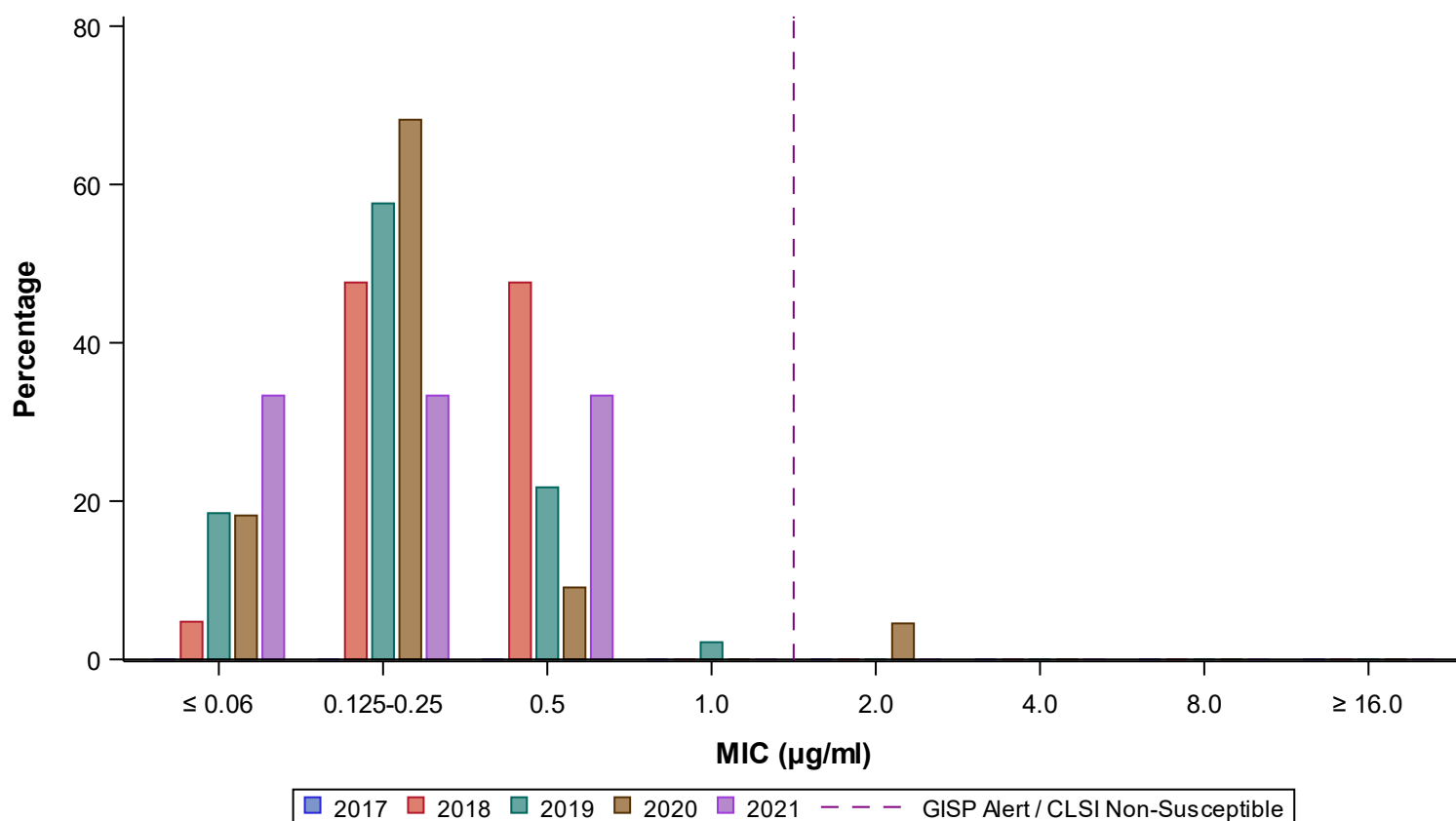
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Jackson, Mississippi, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	1 (4.8)	10 (47.6)	10 (47.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	21
2019	17 (18.5)	53 (57.6)	20 (21.7)	2 (2.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	92
2020	4 (18.2)	15 (68.2)	2 (9.1)	0 (0.0)	1 (4.5)	0 (0.0)	0 (0.0)	0 (0.0)	22
2021	1 (33.3)	1 (33.3)	1 (33.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3

GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

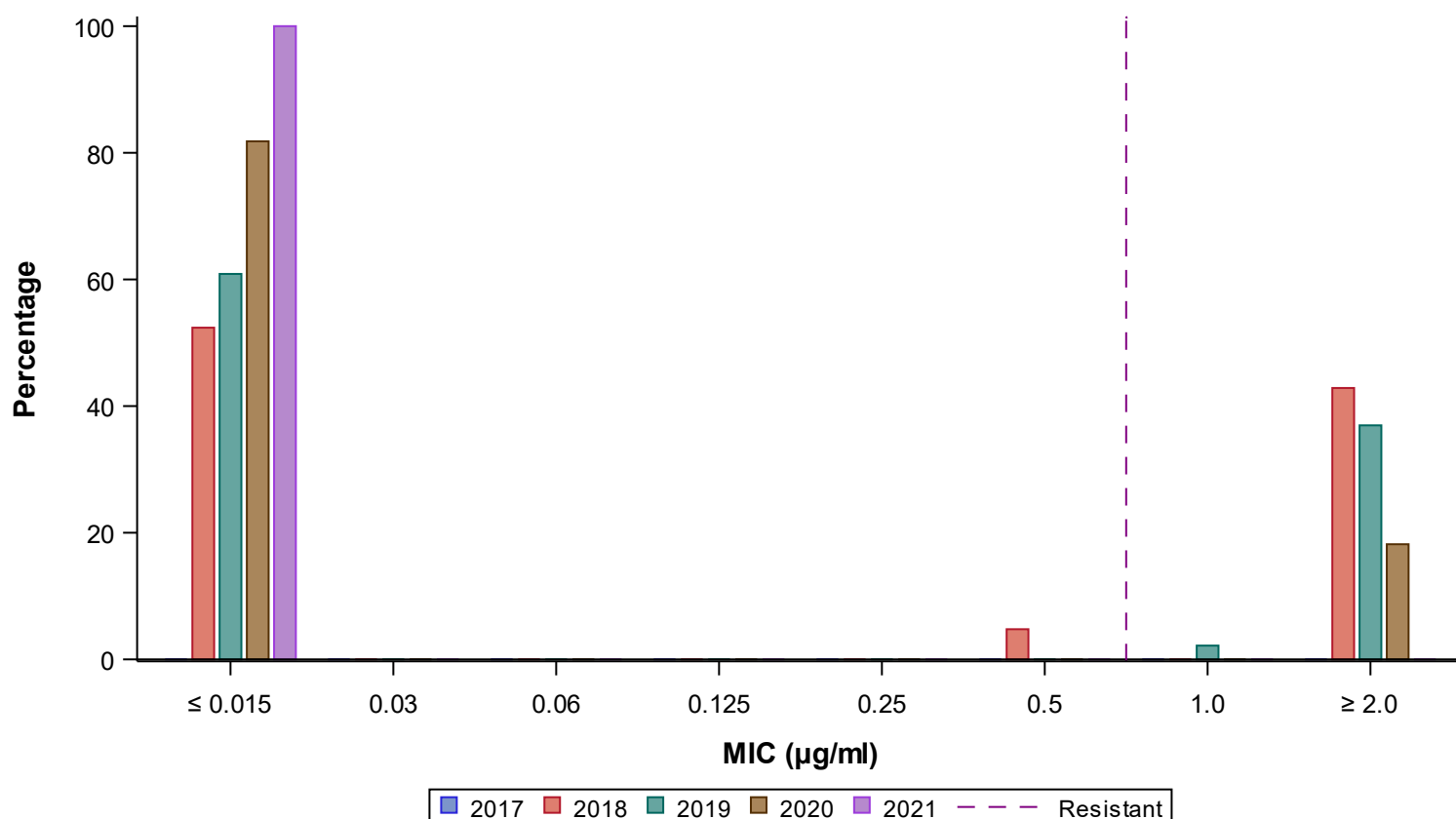
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Jackson, Mississippi, 2017-2021

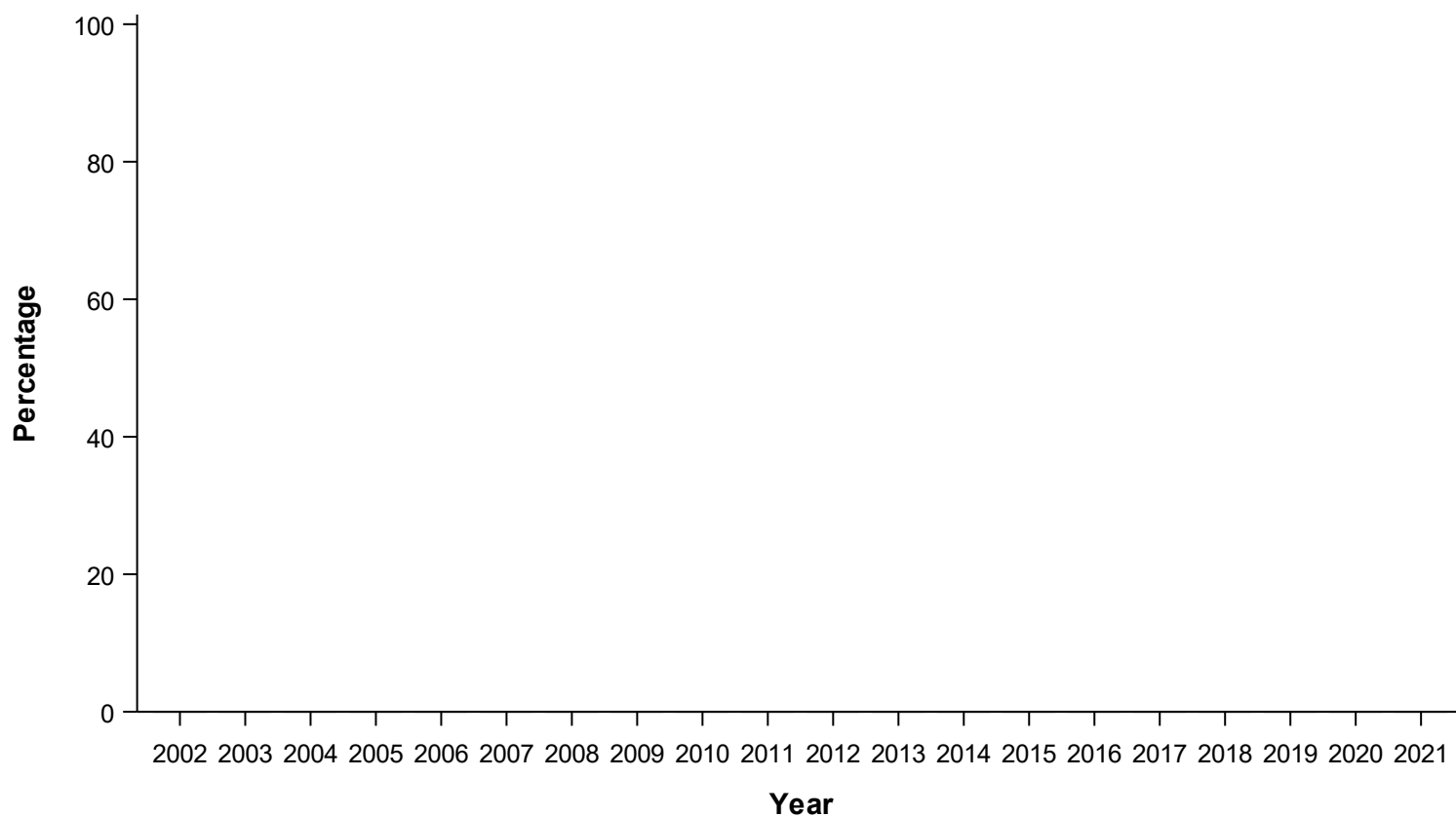


Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	11 (52.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (4.8)	0 (0.0)	9 (42.9)	21
2019	56 (60.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (2.2)	34 (37.0)	92
2020	18 (81.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (18.2)	22
2021	3 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Jackson, Mississippi, 2002-2021



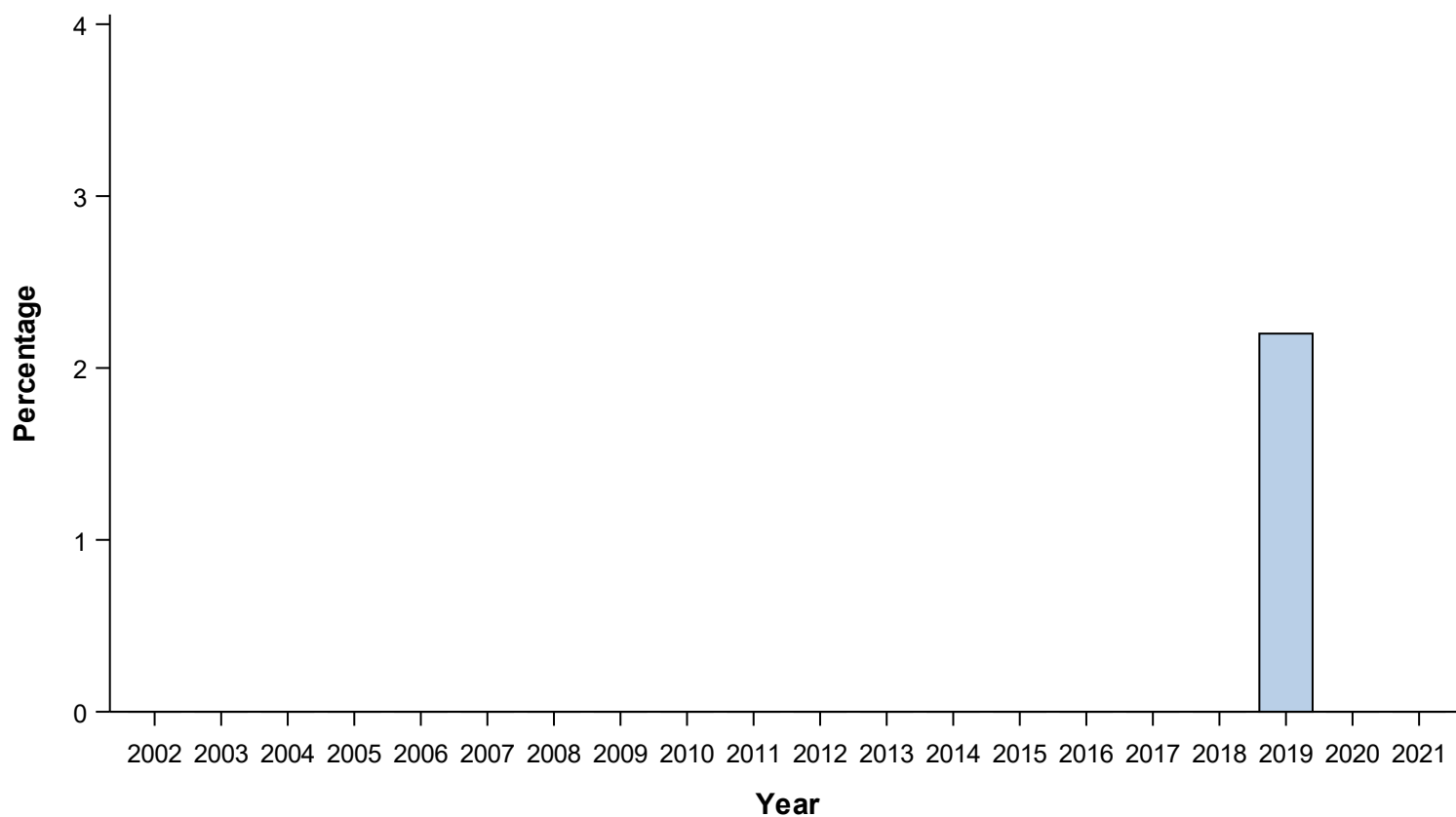
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Jackson, Mississippi, 2002-2021



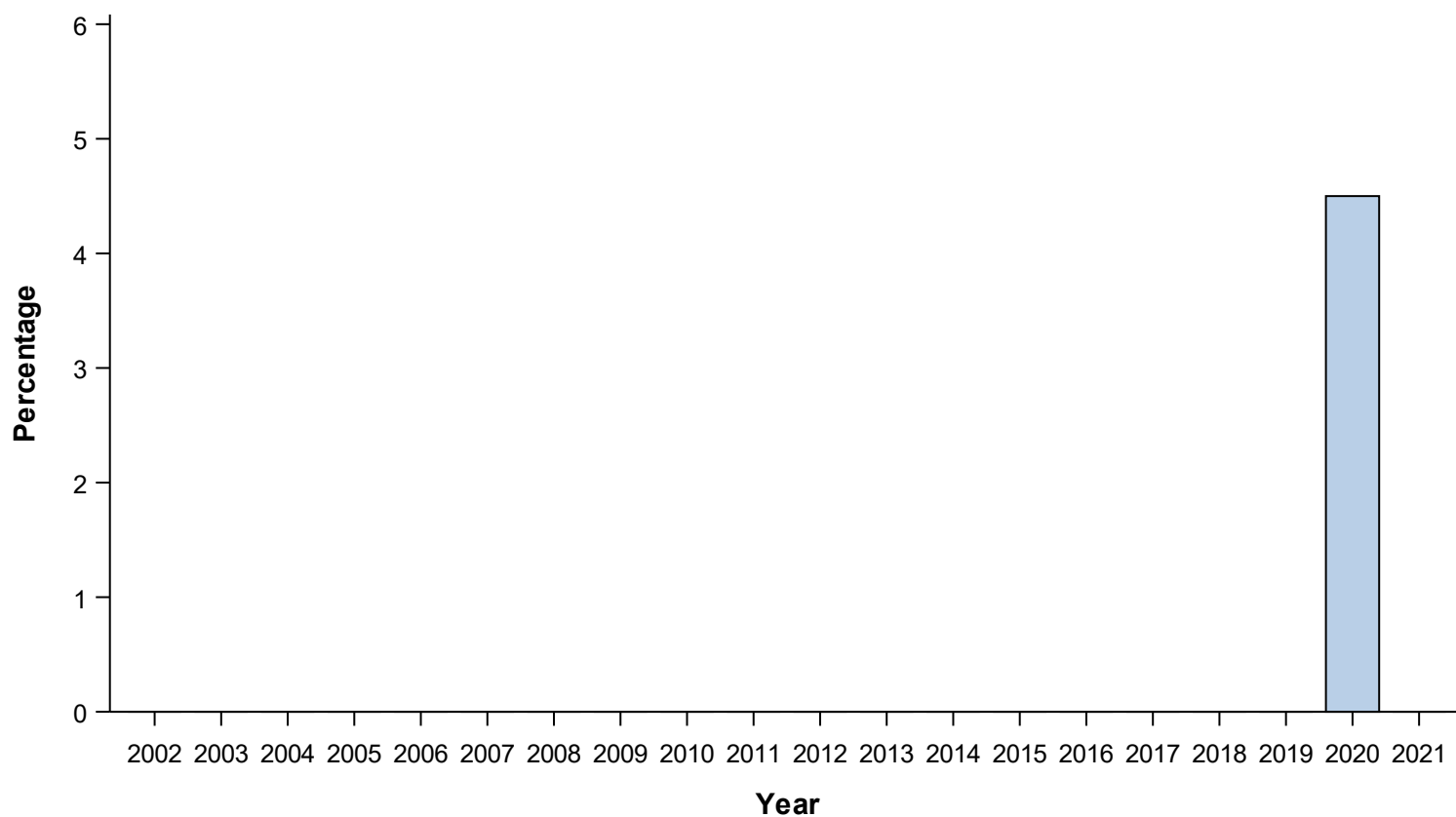
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (2.2)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Jackson, Mississippi, 2002-2021



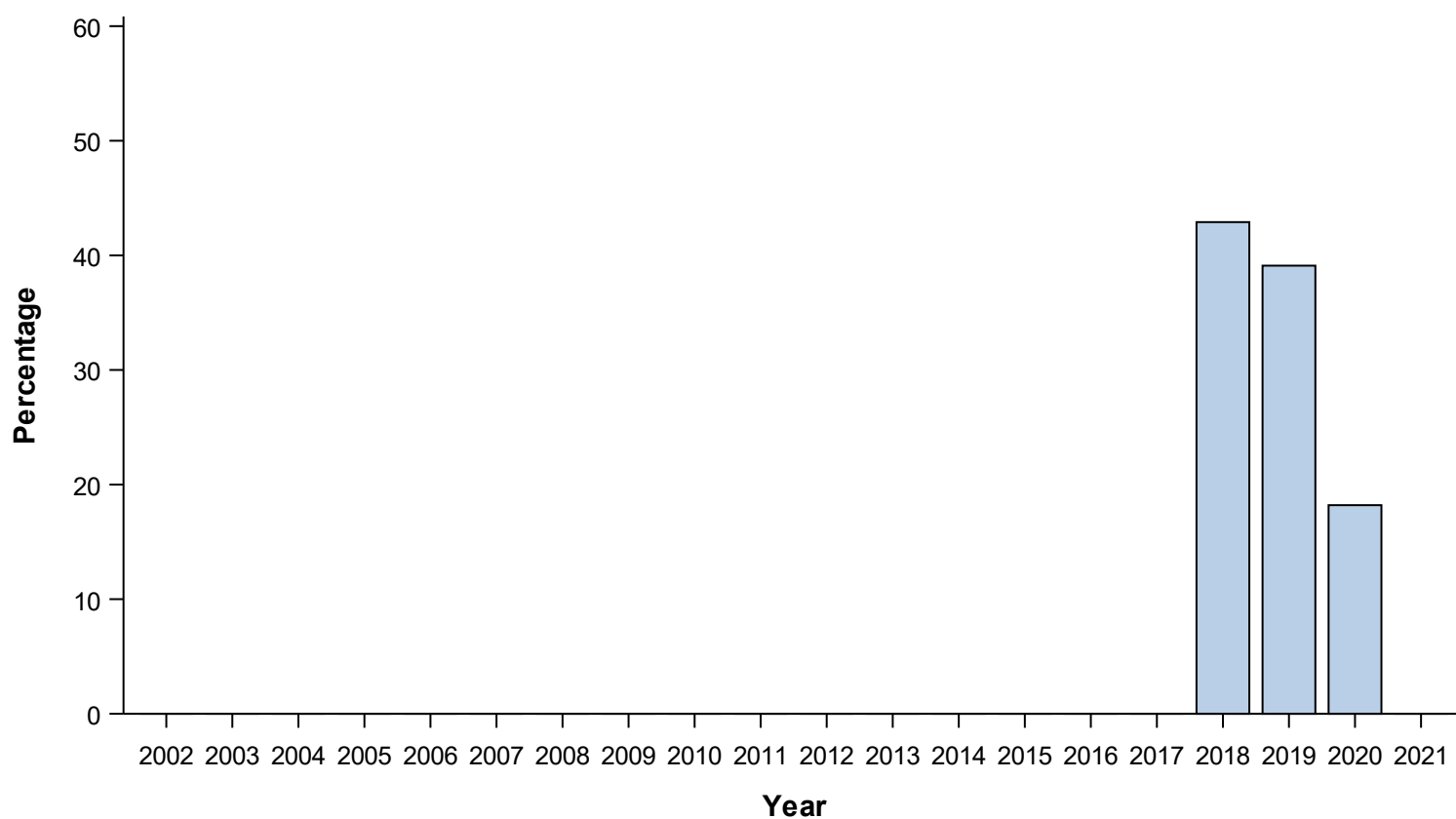
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (4.5)	0 (0.0)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Jackson, Mississippi, 2002-2021



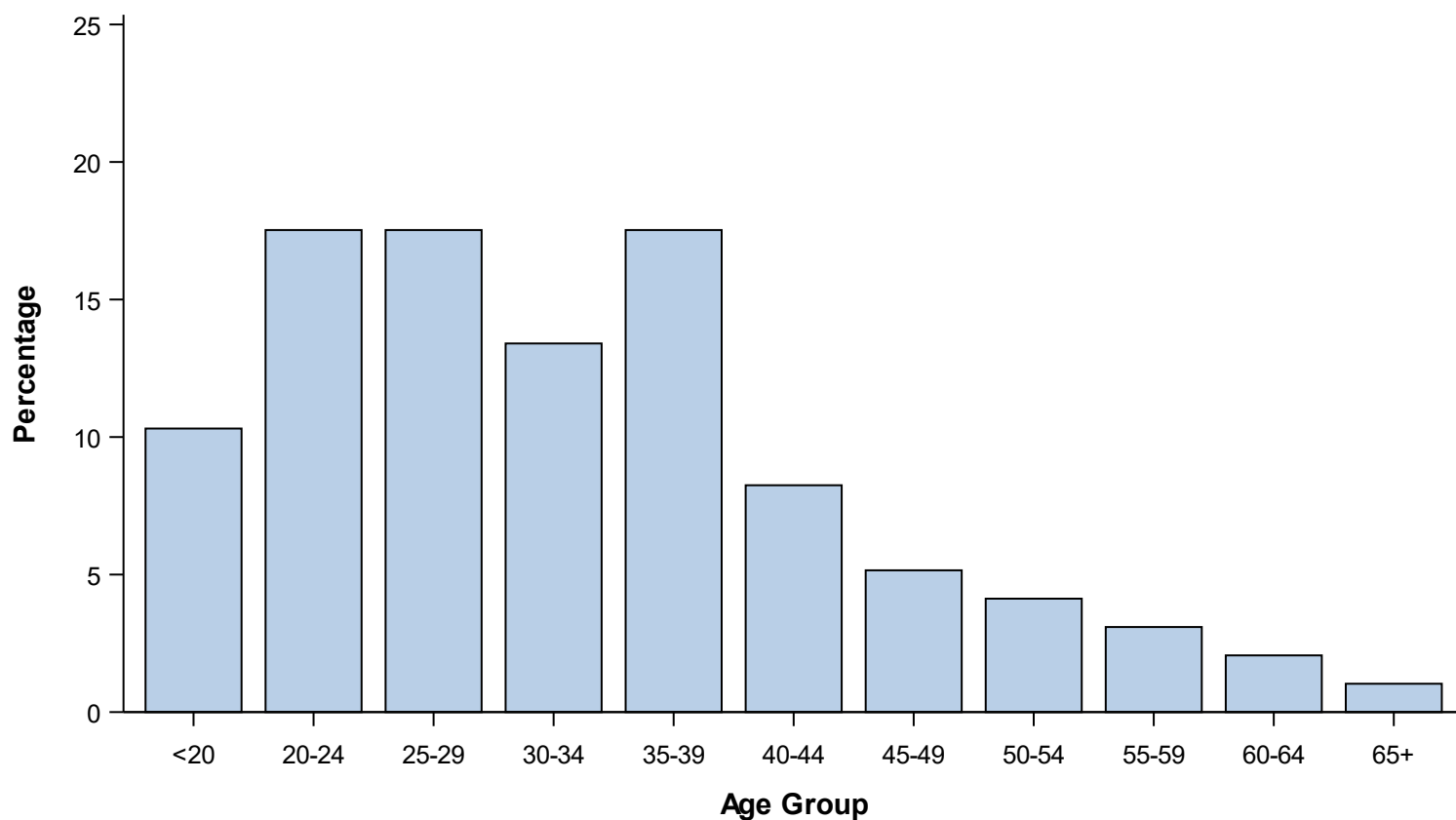
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	9 (42.9)	36 (39.1)	4 (18.2)	0 (0.0)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

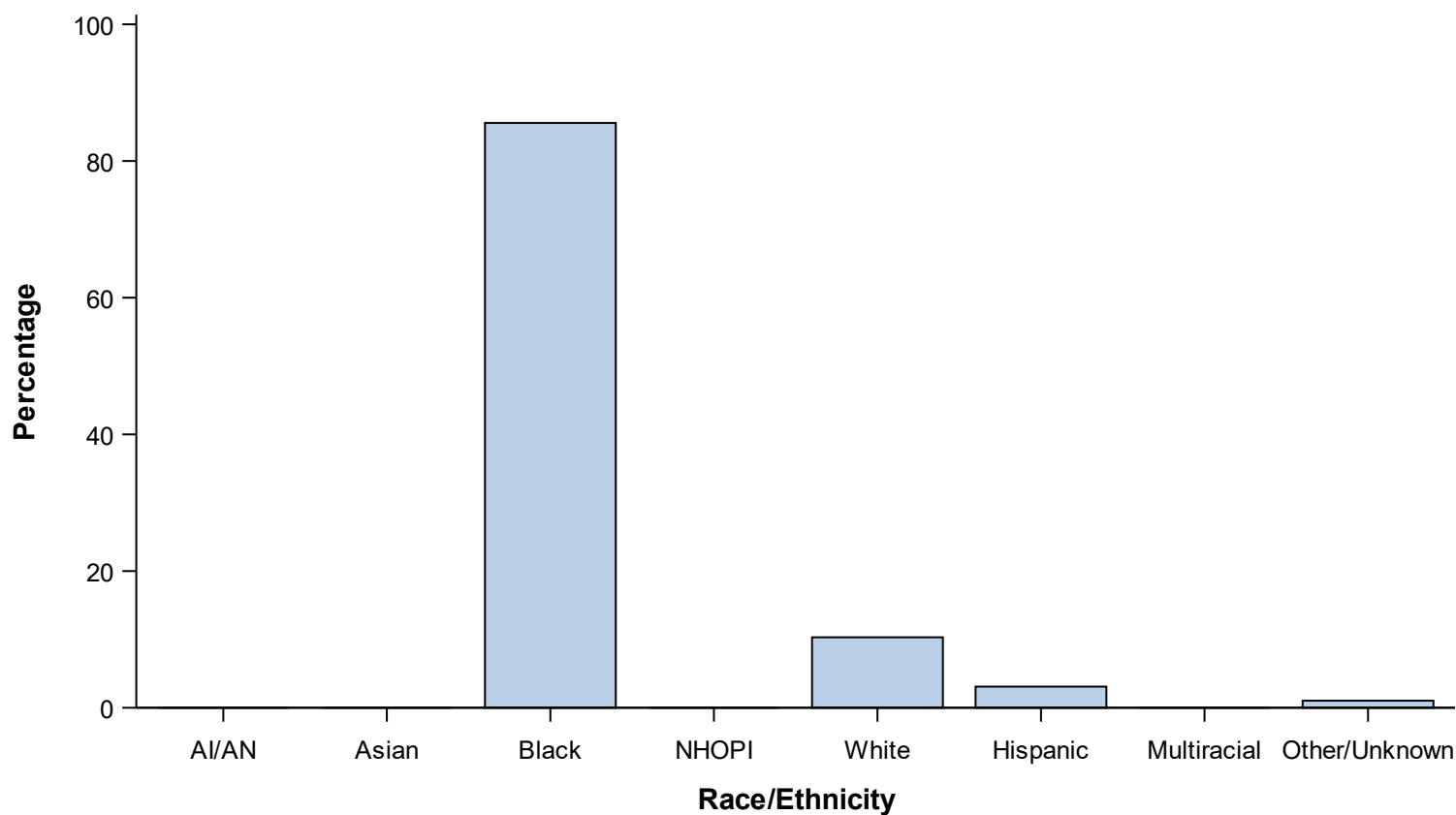
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
10 (10.3)	17 (17.5)	17 (17.5)	13 (13.4)	17 (17.5)	8 (8.2)	5 (5.2)	4 (4.1)	3 (3.1)	2 (2.1)	1 (1.0)	97

Note: Cases with unknown age were excluded.

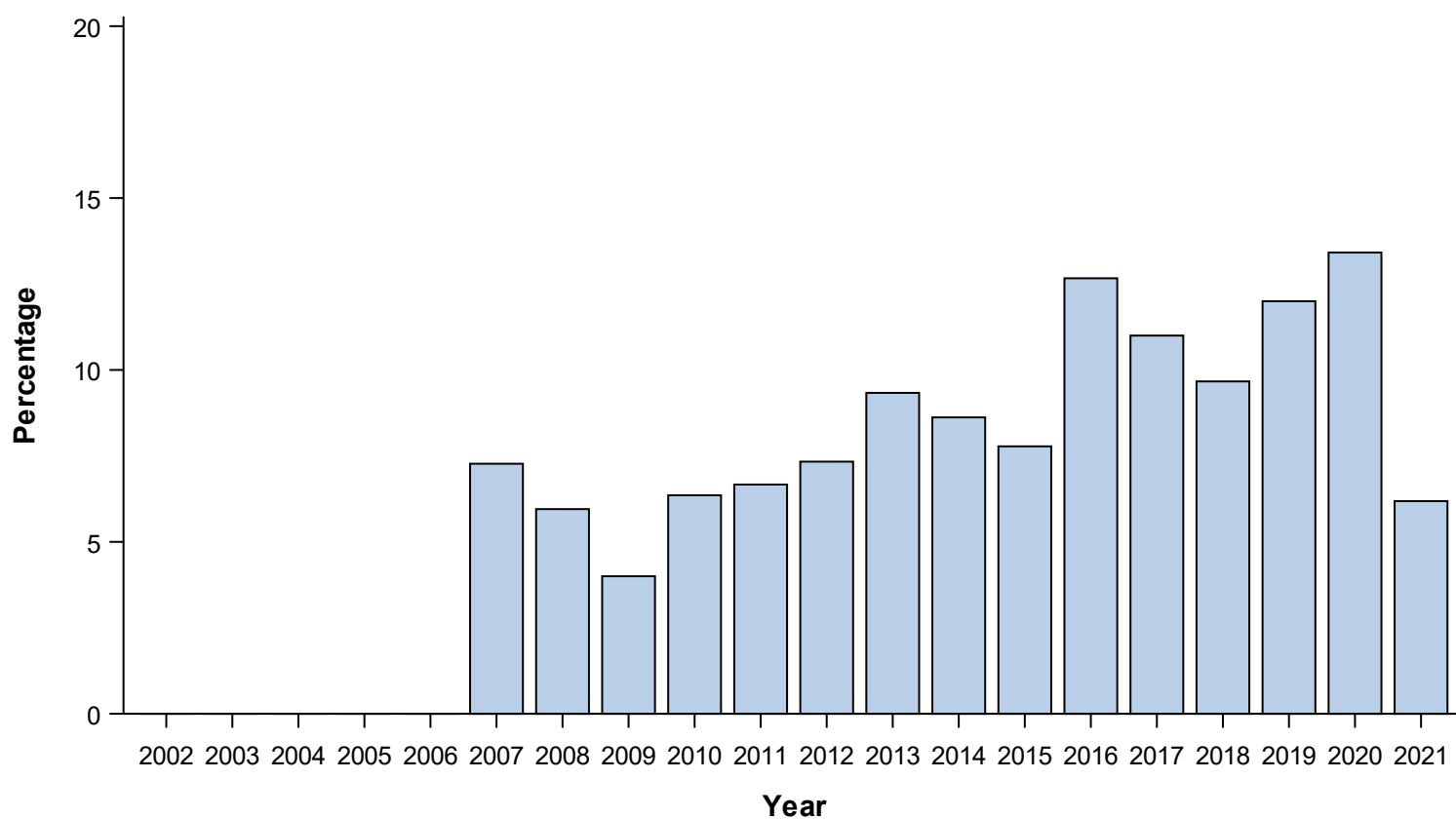
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	83 (85.6)	0 (0.0)	10 (10.3)	3 (3.1)	0 (0.0)	1 (1.0)	97

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Kansas City, Missouri, 2002-2021

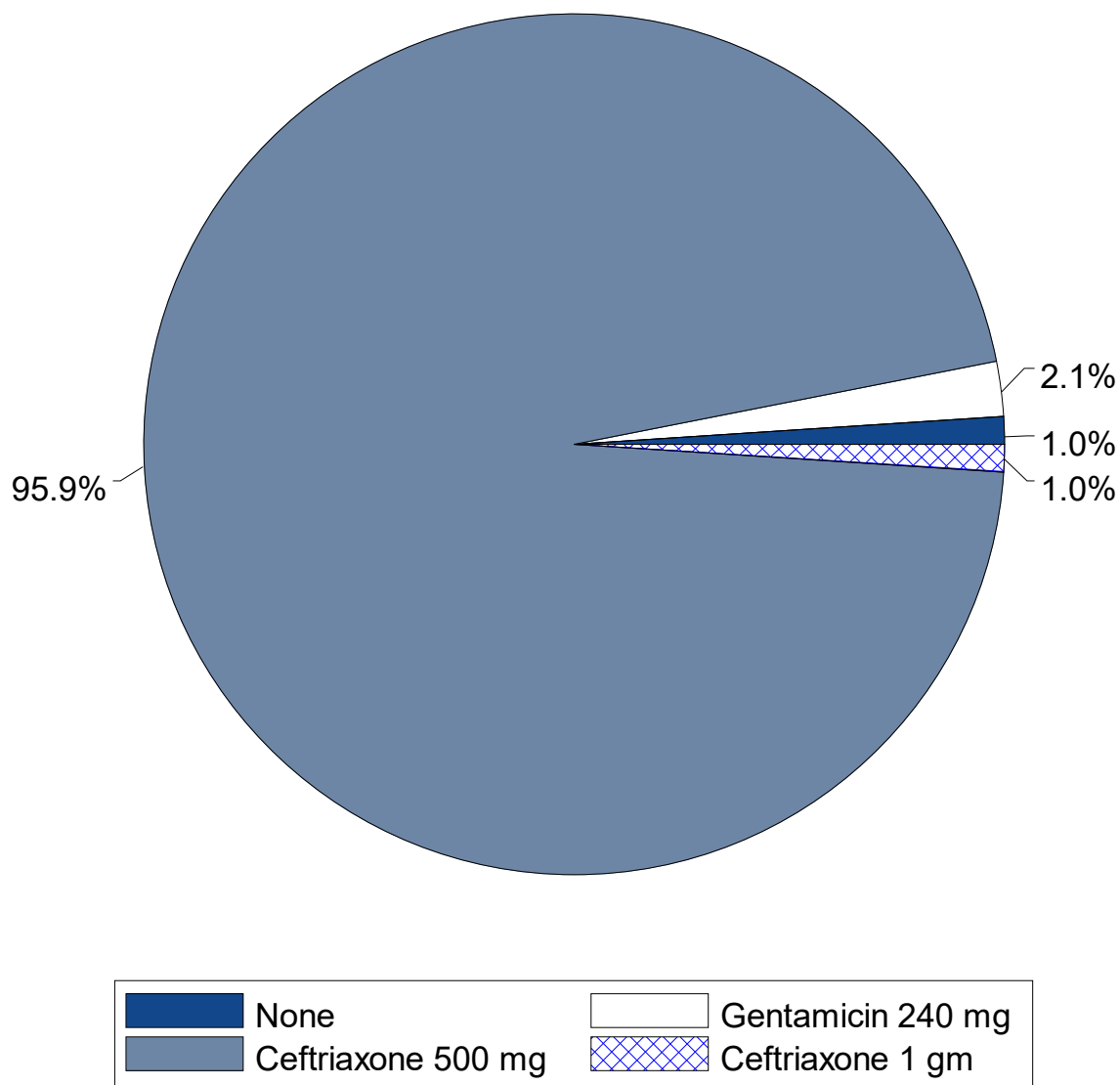


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (7.3)	15 (6.0)	12 (4.0)	19 (6.4)	20 (6.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
22 (7.3)	28 (9.3)	20 (8.6)	21 (7.8)	38 (12.7)	33 (11.0)	29 (9.7)	36 (12.0)	11 (13.4)	6 (6.2)

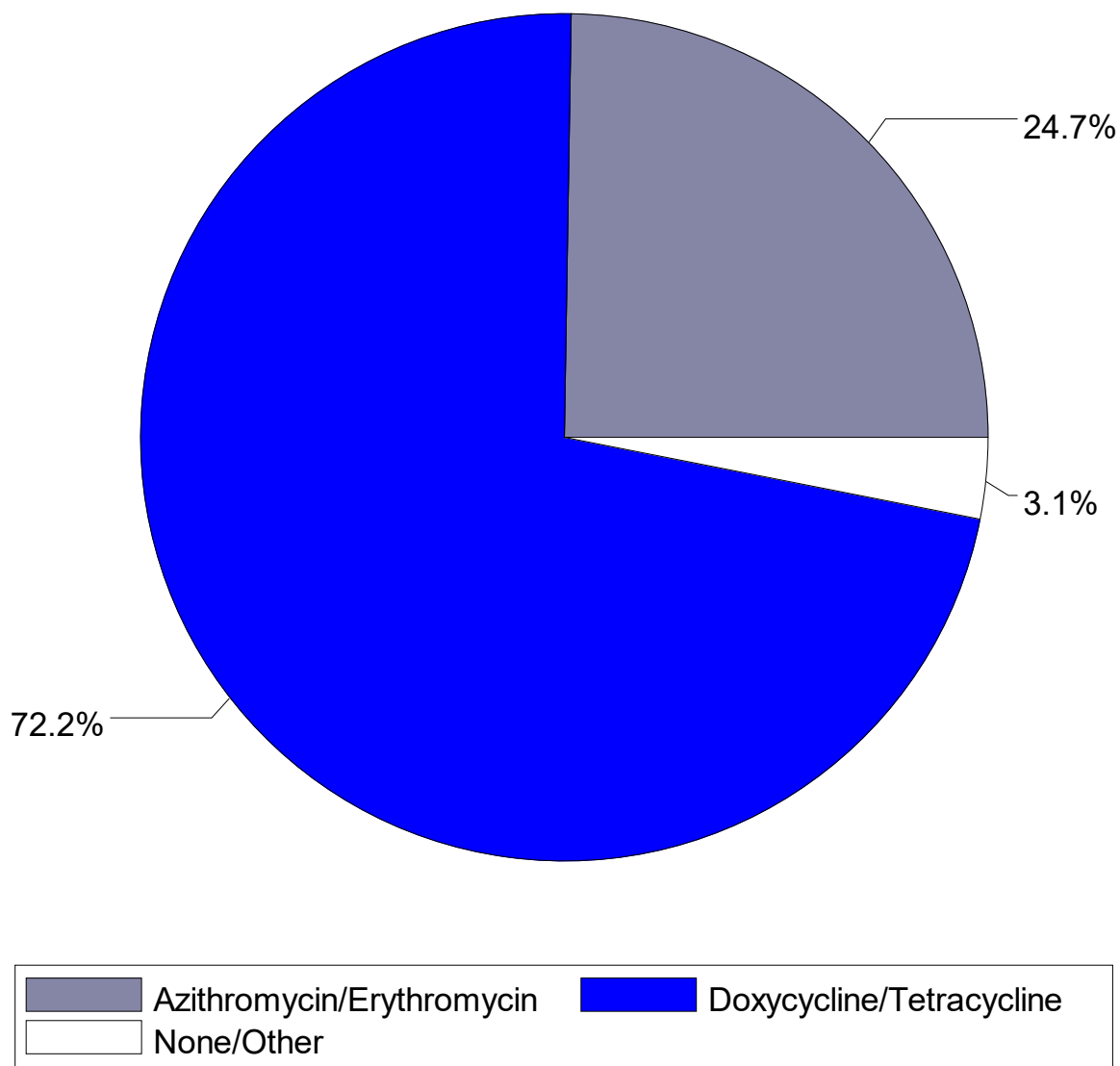
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.
Site participated in GISP during 2007-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2021



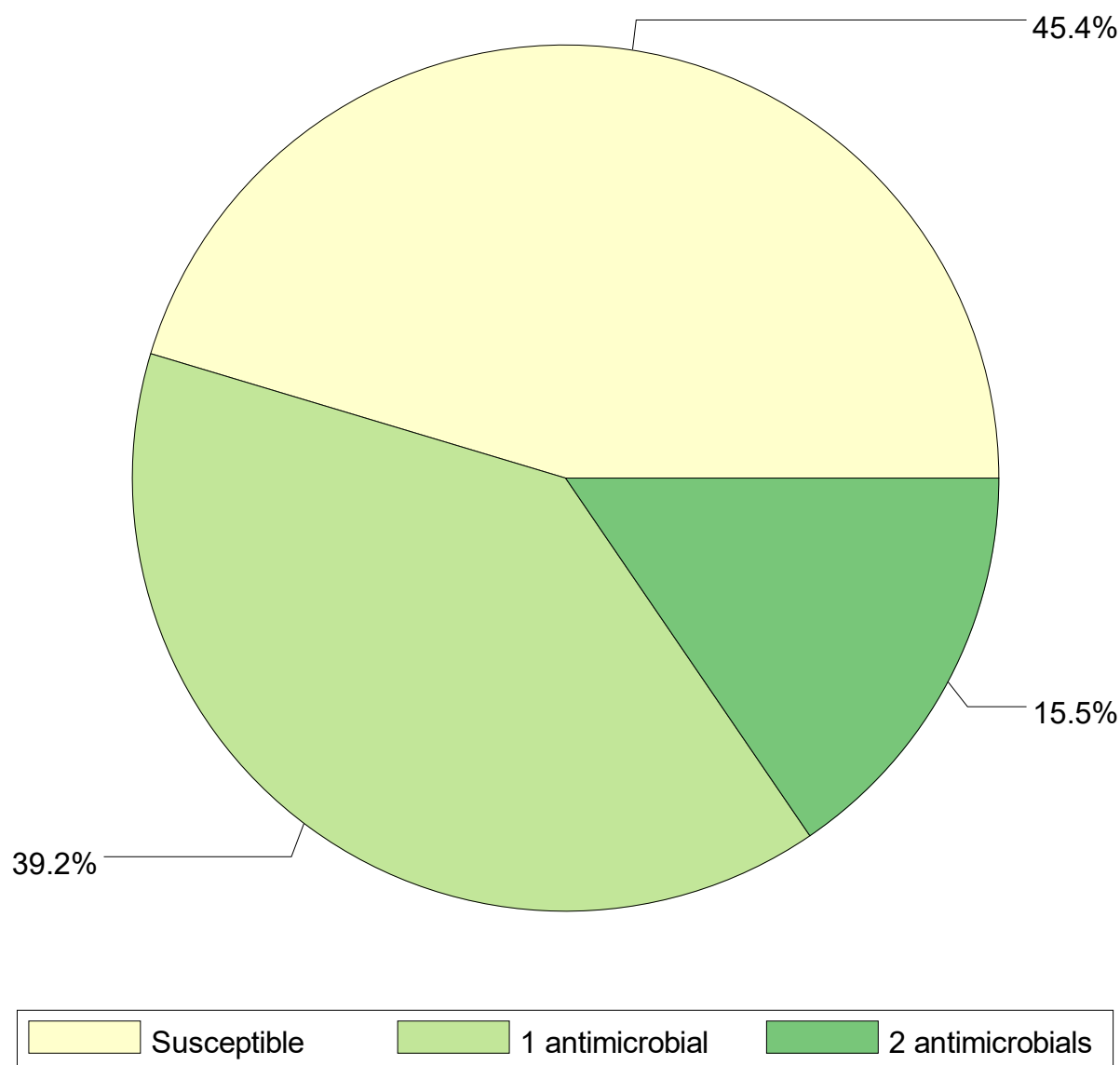
Primary Treatment	Count	Percentage
None	1	1.0
Gentamicin 240 mg	2	2.1
Ceftriaxone 500 mg	93	95.9
Ceftriaxone 1 gm	1	1.0

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	24	24.7
Doxycycline/Tetracycline	70	72.2
None/Other	3	3.1

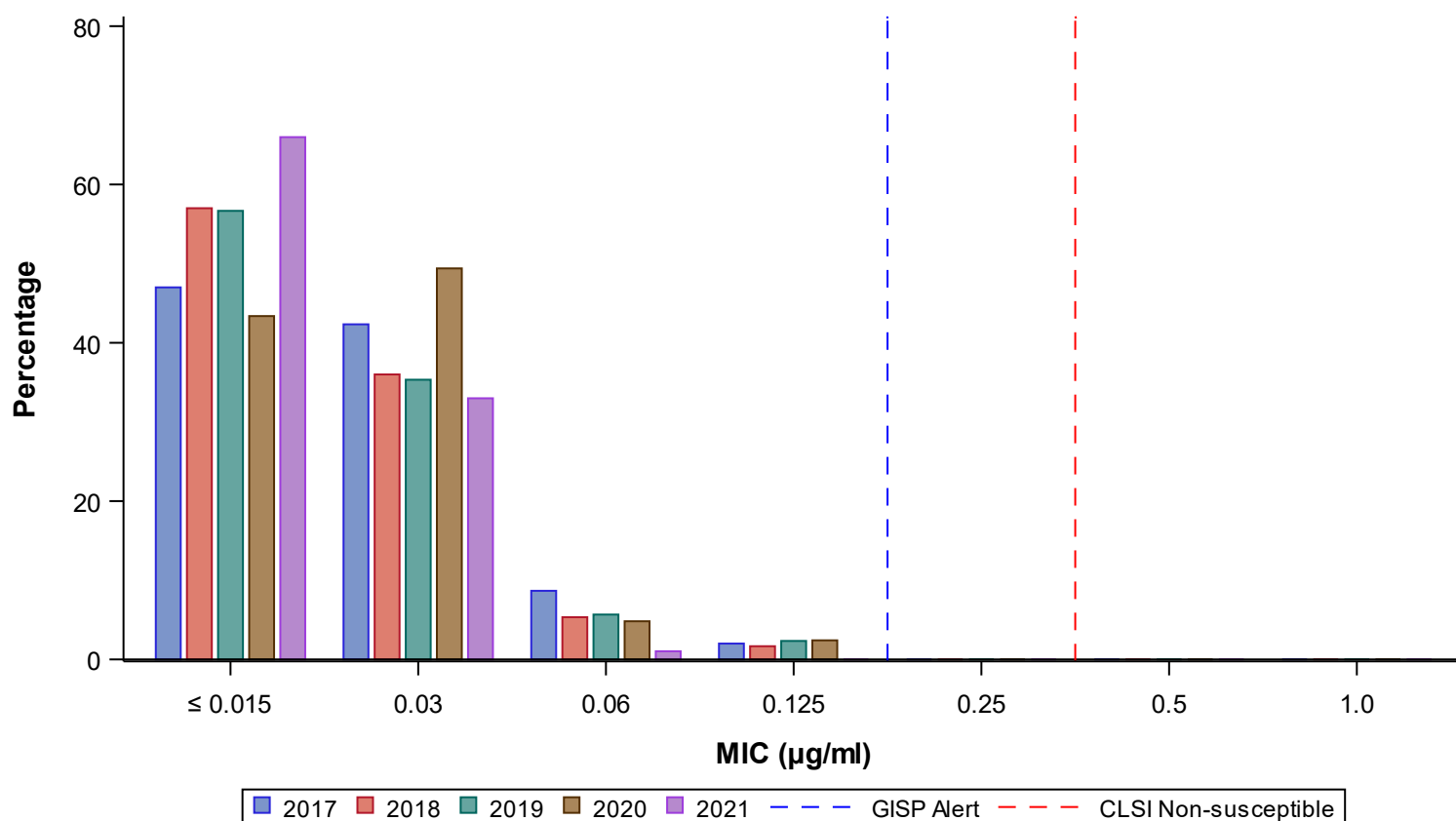
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	44	45.4
1 antimicrobial	38	39.2
2 antimicrobials	15	15.5
3 antimicrobials	0	0.0
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2017-2021



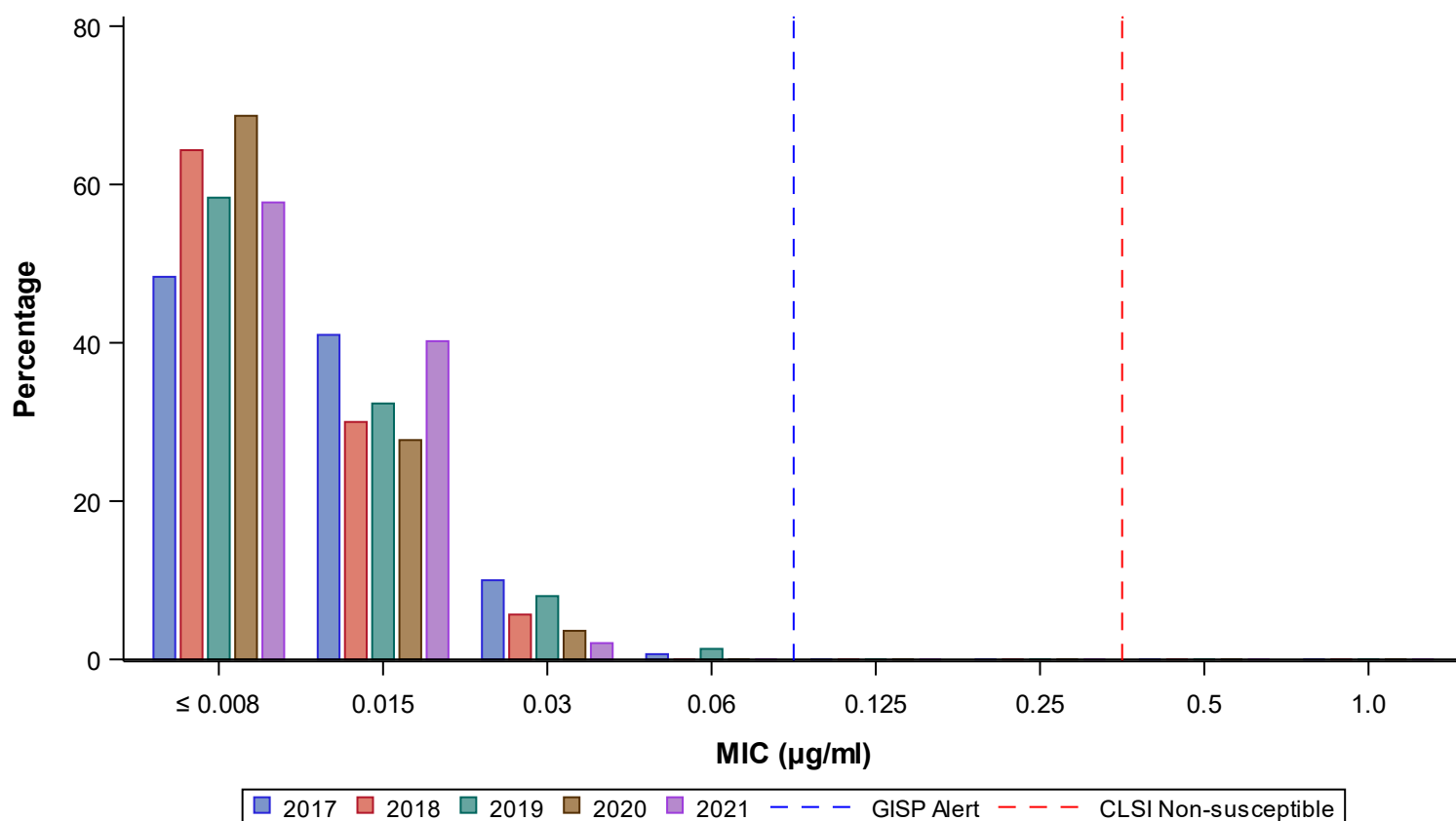
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	141 (47.0)	127 (42.3)	26 (8.7)	6 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2018	171 (57.0)	108 (36.0)	16 (5.3)	5 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	300
2019	170 (56.7)	106 (35.3)	17 (5.7)	7 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)	300
2020	36 (43.4)	41 (49.4)	4 (4.8)	2 (2.4)	0 (0.0)	0 (0.0)	0 (0.0)	83
2021	64 (66.0)	32 (33.0)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	97

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2017-2021



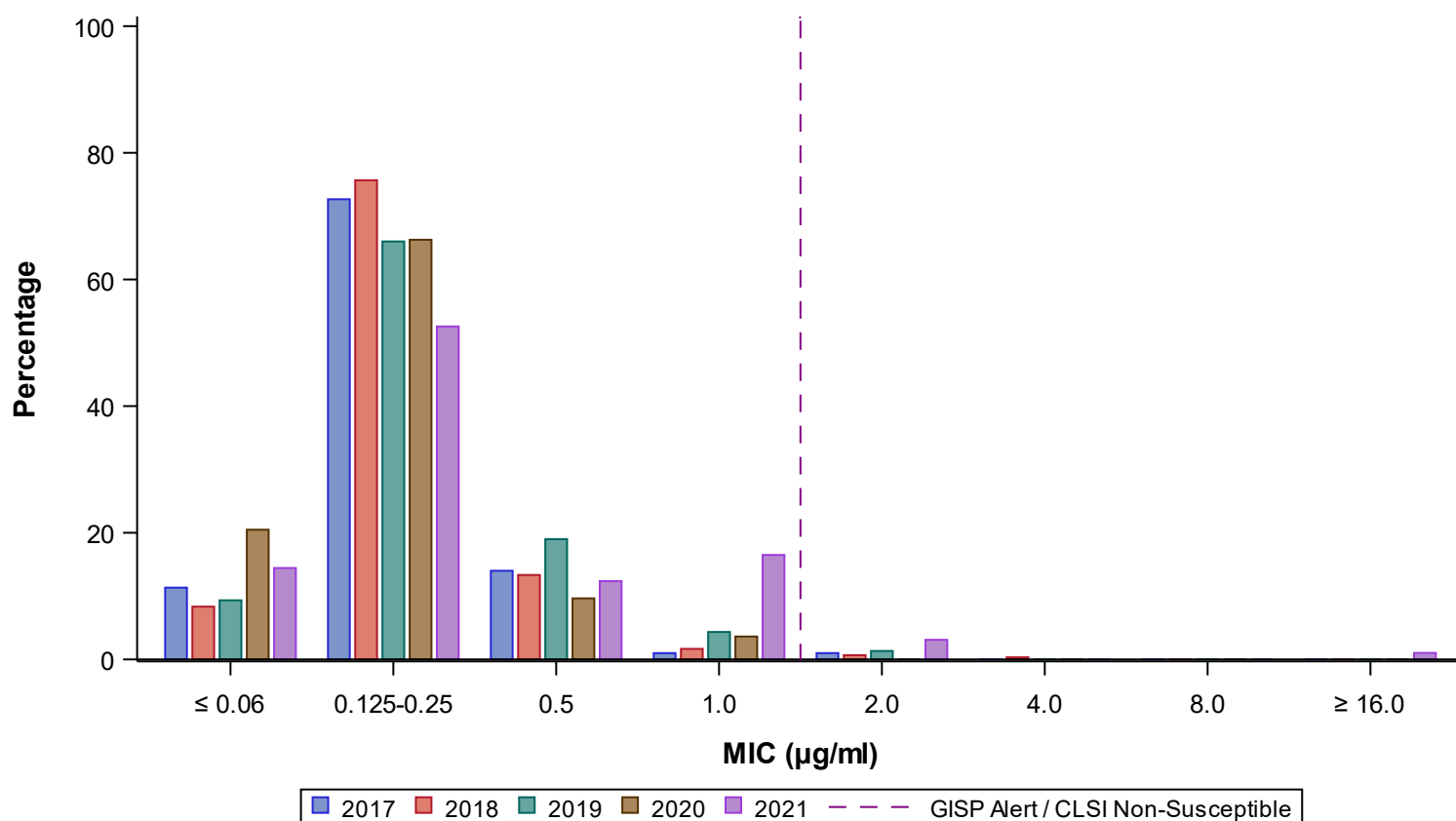
Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	145 (48.3)	123 (41.0)	30 (10.0)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2018	193 (64.3)	90 (30.0)	17 (5.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2019	175 (58.3)	97 (32.3)	24 (8.0)	4 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2020	57 (68.7)	23 (27.7)	3 (3.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	83
2021	56 (57.7)	39 (40.2)	2 (2.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	97

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	34 (11.3)	218 (72.7)	42 (14.0)	3 (1.0)	3 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2018	25 (8.3)	227 (75.7)	40 (13.3)	5 (1.7)	2 (0.7)	1 (0.3)	0 (0.0)	0 (0.0)	300
2019	28 (9.3)	198 (66.0)	57 (19.0)	13 (4.3)	4 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	300
2020	17 (20.5)	55 (66.3)	8 (9.6)	3 (3.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	83
2021	14 (14.4)	51 (52.6)	12 (12.4)	16 (16.5)	3 (3.1)	0 (0.0)	0 (0.0)	1 (1.0)	97

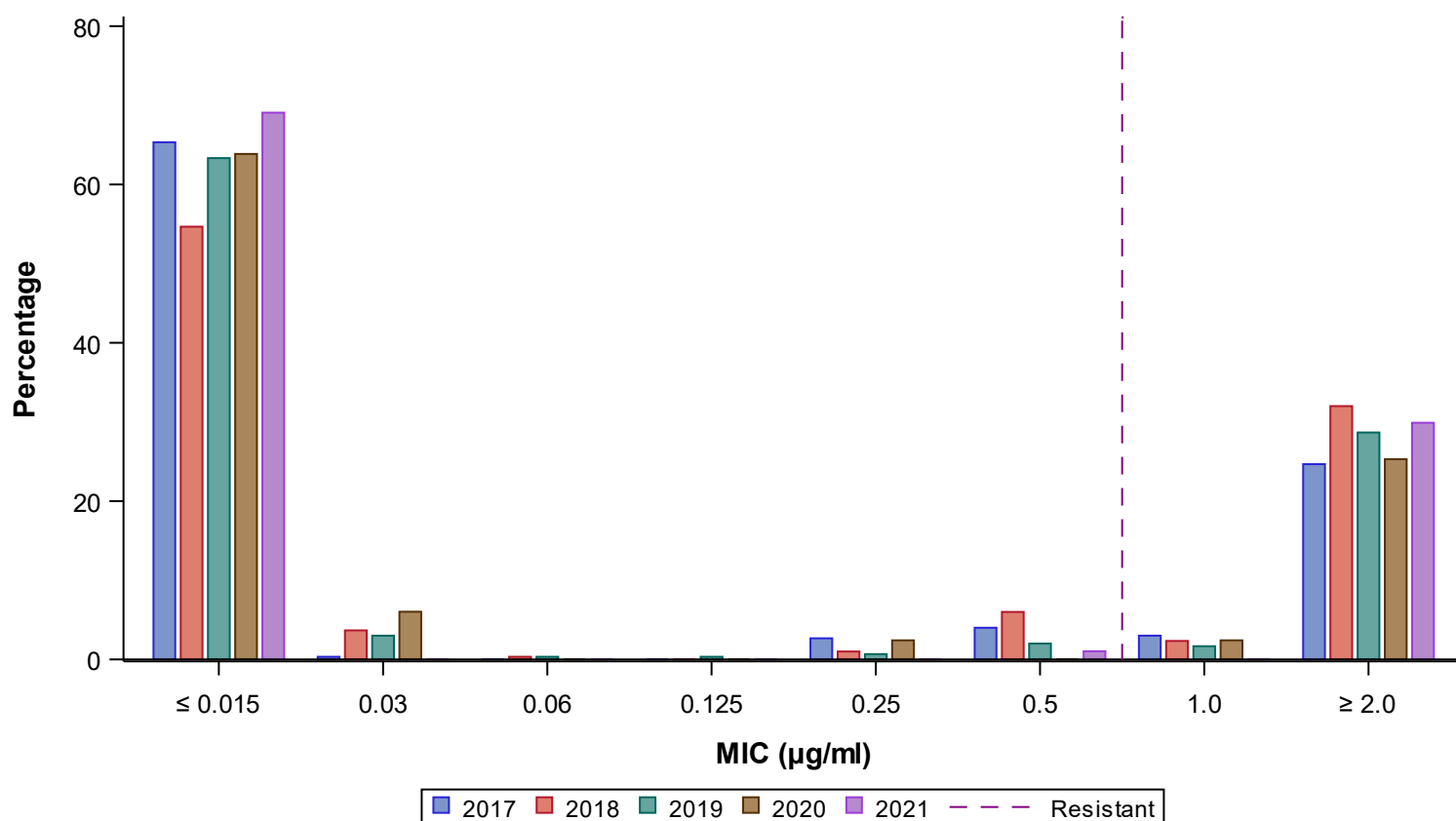
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

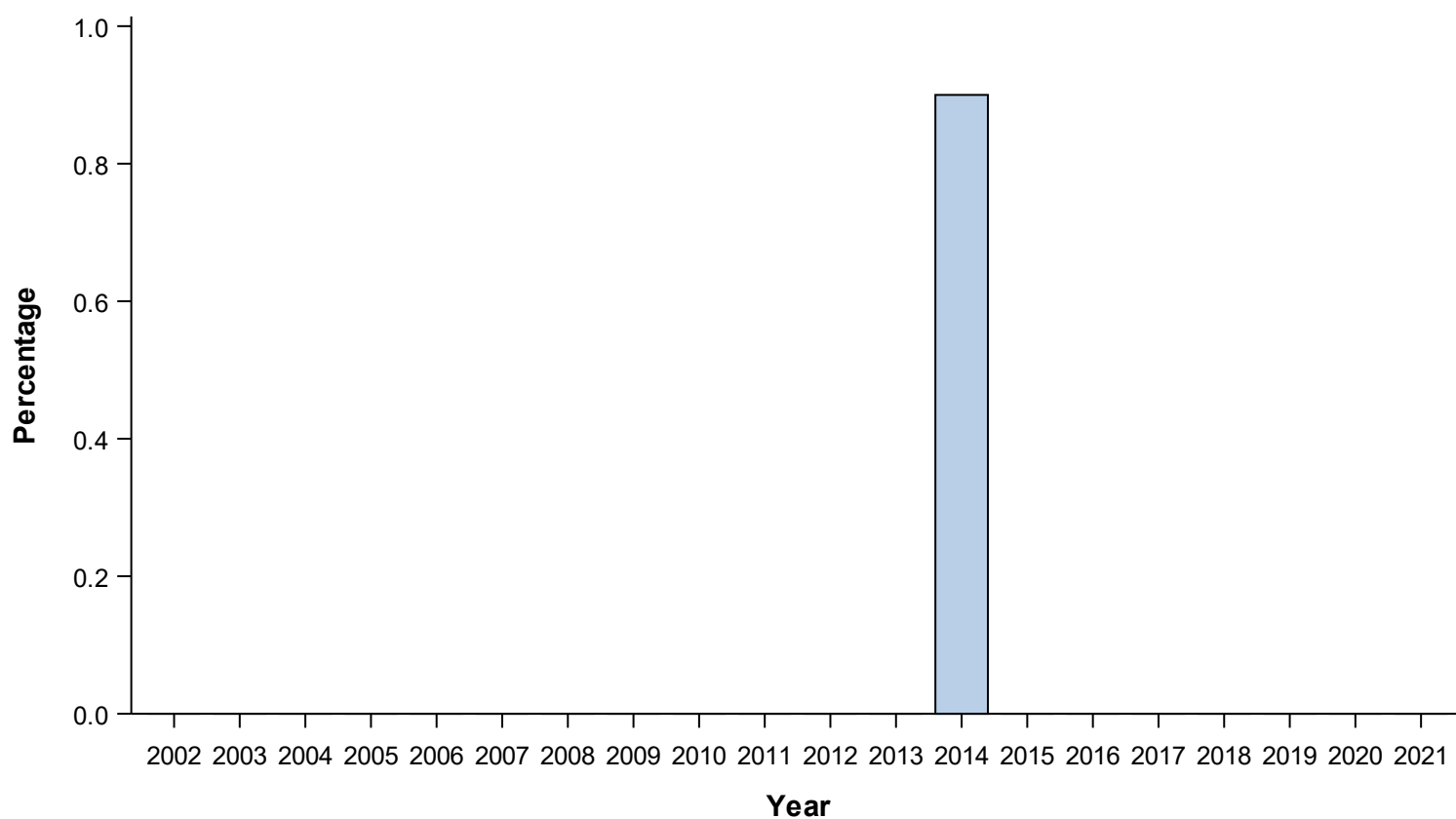
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	196 (65.3)	1 (0.3)	0 (0.0)	0 (0.0)	8 (2.7)	12 (4.0)	9 (3.0)	74 (24.7)	300
2018	164 (54.7)	11 (3.7)	1 (0.3)	0 (0.0)	3 (1.0)	18 (6.0)	7 (2.3)	96 (32.0)	300
2019	190 (63.3)	9 (3.0)	1 (0.3)	1 (0.3)	2 (0.7)	6 (2.0)	5 (1.7)	86 (28.7)	300
2020	53 (63.9)	5 (6.0)	0 (0.0)	0 (0.0)	2 (2.4)	0 (0.0)	2 (2.4)	21 (25.3)	83
2021	67 (69.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)	0 (0.0)	29 (29.9)	97

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2002-2021



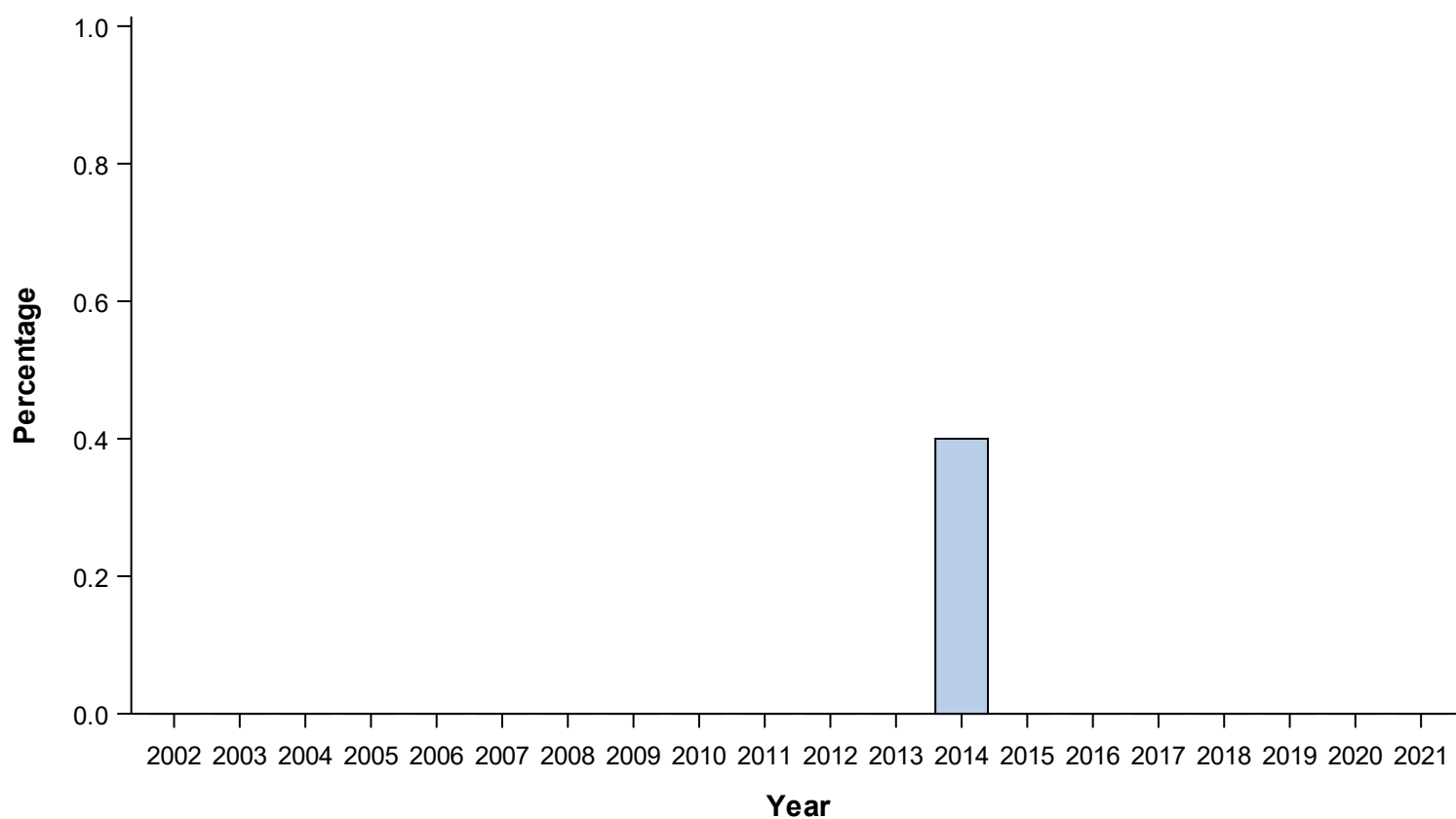
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	2 (0.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2007-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2002-2021



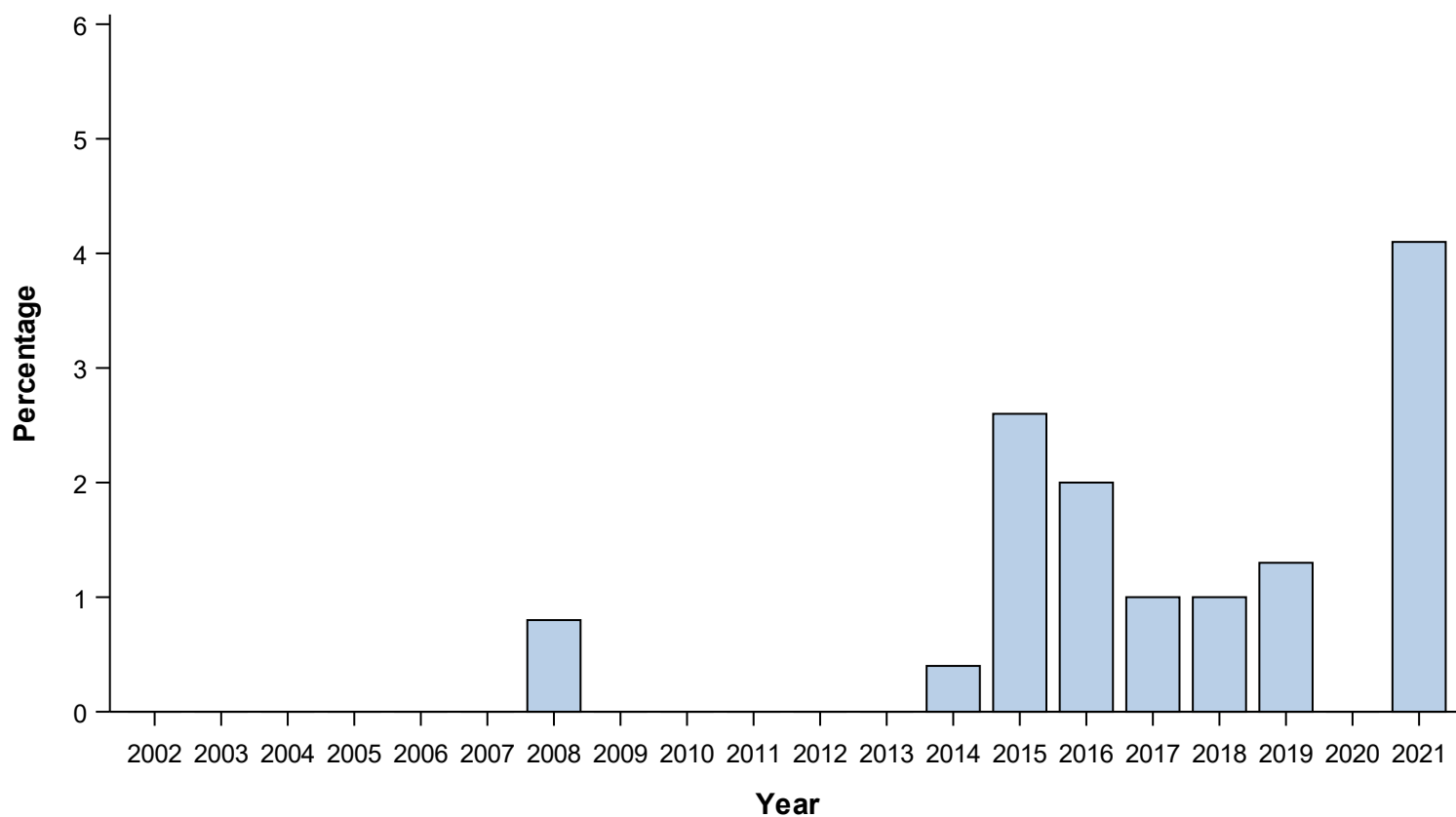
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2007-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Kansas City, Missouri, 2002-2021



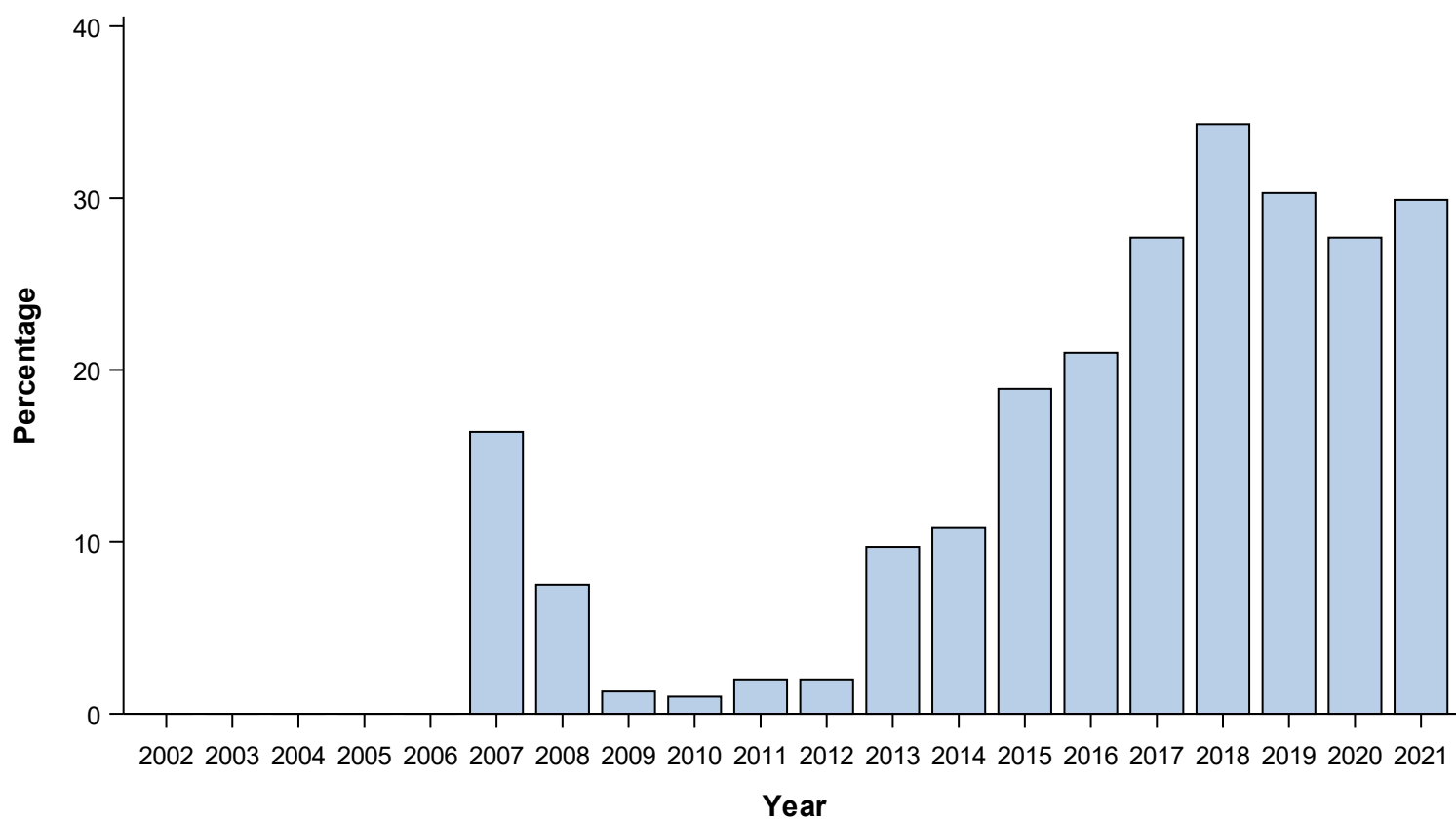
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	1 (0.4)	7 (2.6)	6 (2.0)	3 (1.0)	3 (1.0)	4 (1.3)	0 (0.0)	4 (4.1)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2007-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Kansas City, Missouri, 2002-2021



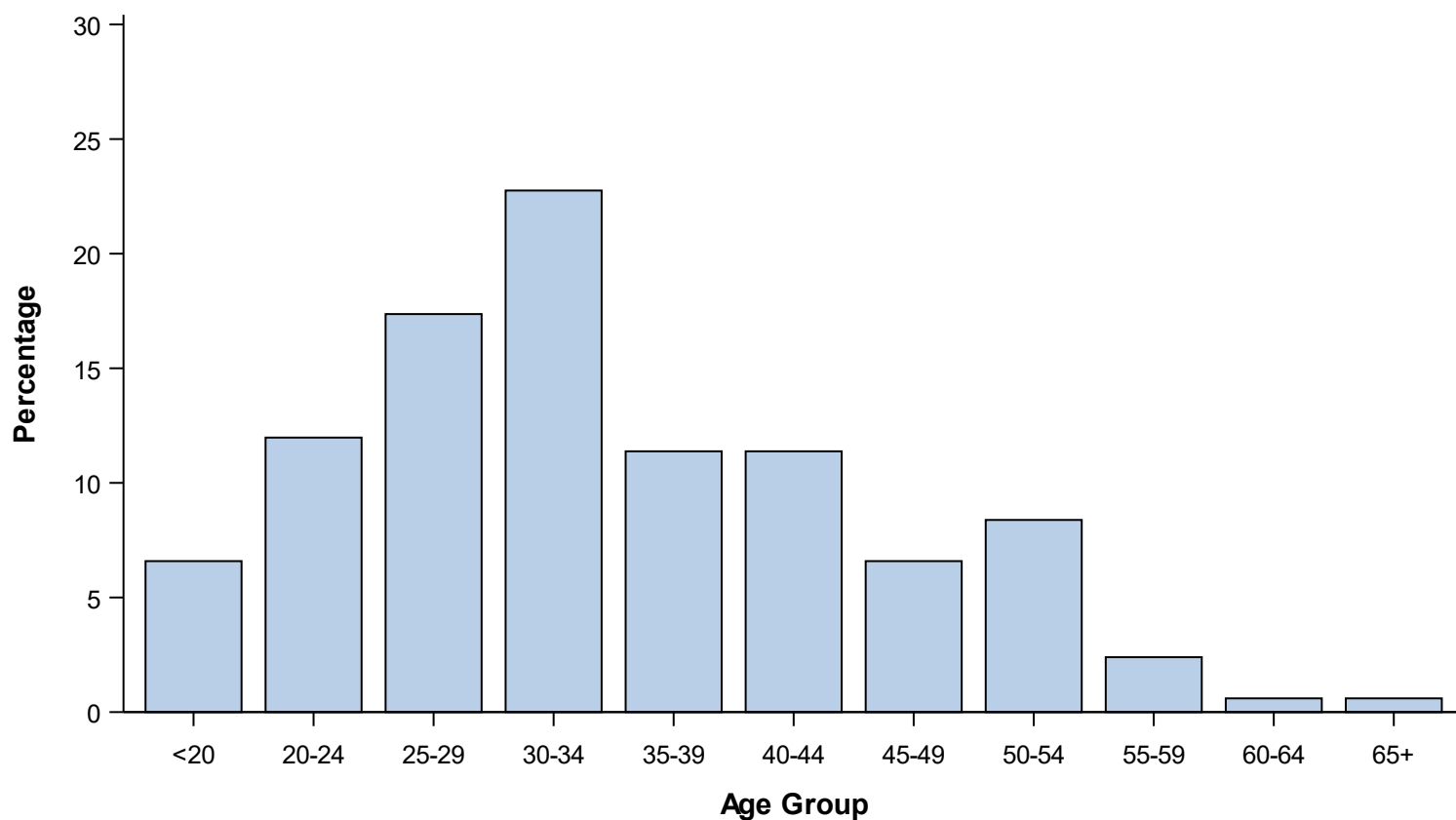
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	9 (16.4)	19 (7.5)	4 (1.3)	3 (1.0)	6 (2.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
6 (2.0)	29 (9.7)	25 (10.8)	51 (18.9)	63 (21.0)	83 (27.7)	103 (34.3)	91 (30.3)	23 (27.7)	29 (29.9)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2007-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

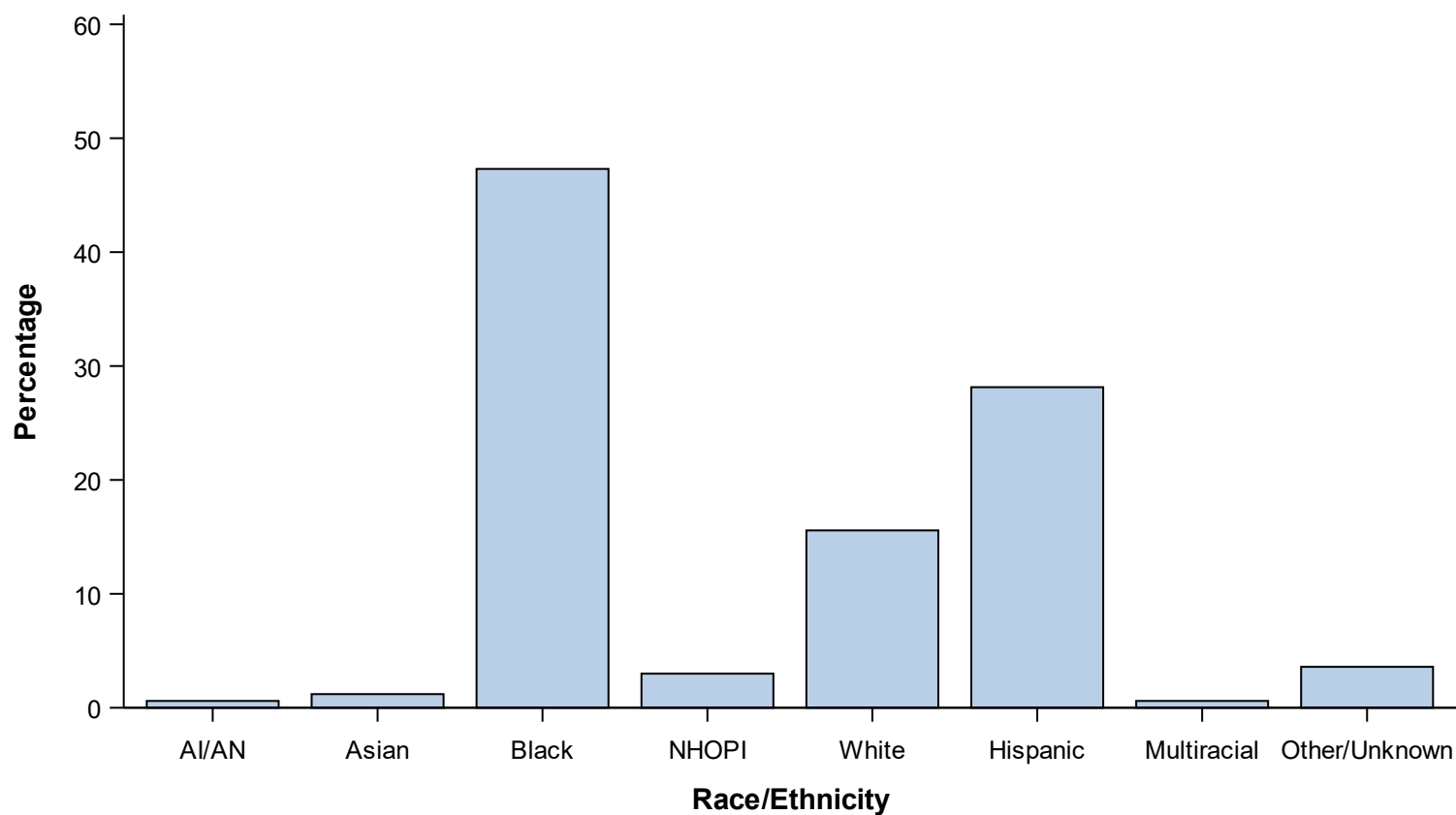
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
11 (6.6)	20 (12.0)	29 (17.4)	38 (22.8)	19 (11.4)	19 (11.4)	11 (6.6)	14 (8.4)	4 (2.4)	1 (0.6)	1 (0.6)	167

Note: Cases with unknown age were excluded.

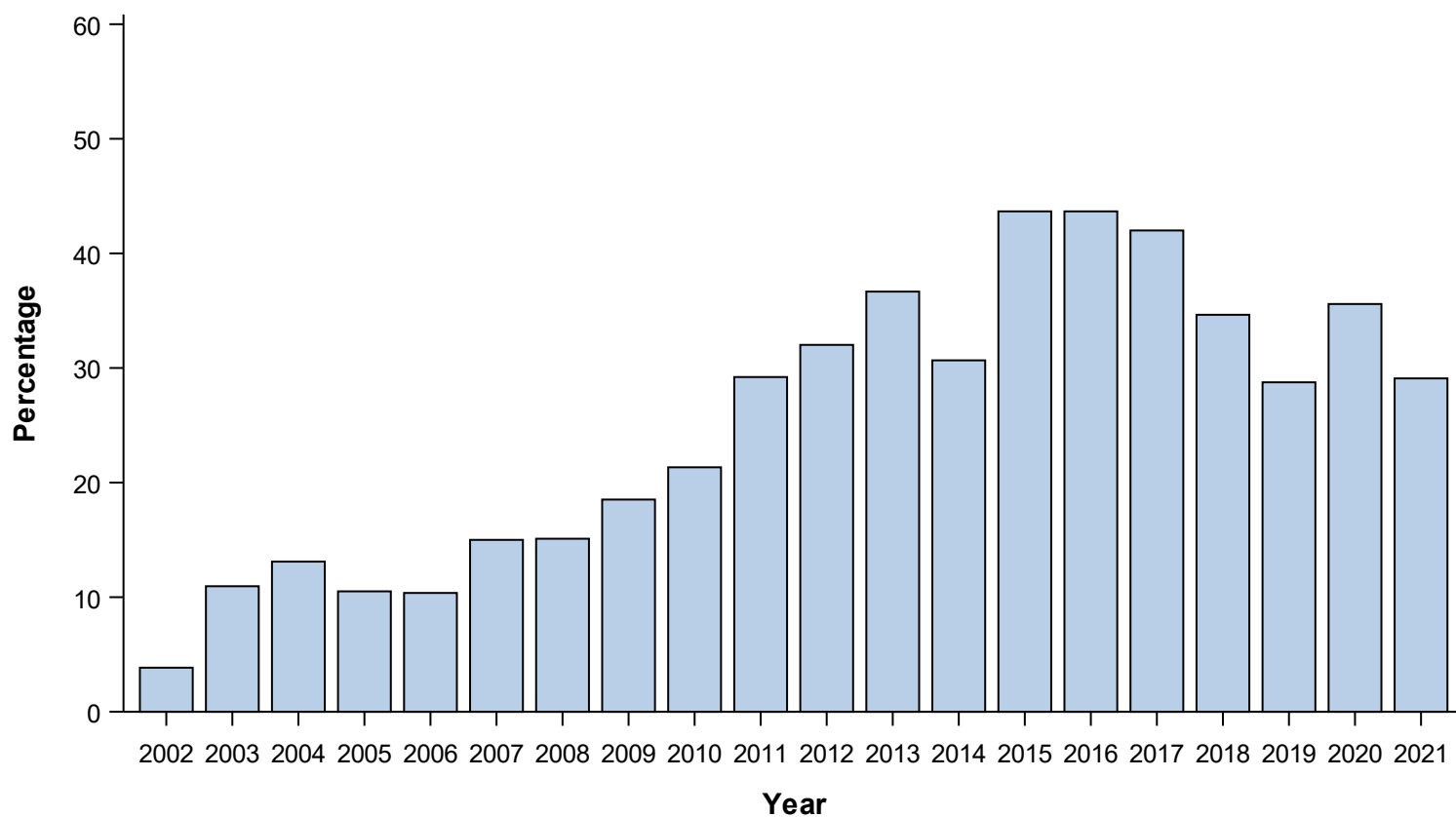
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
1 (0.6)	2 (1.2)	79 (47.3)	5 (3.0)	26 (15.6)	47 (28.1)	1 (0.6)	6 (3.6)	167

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Las Vegas, Nevada, 2002-2021

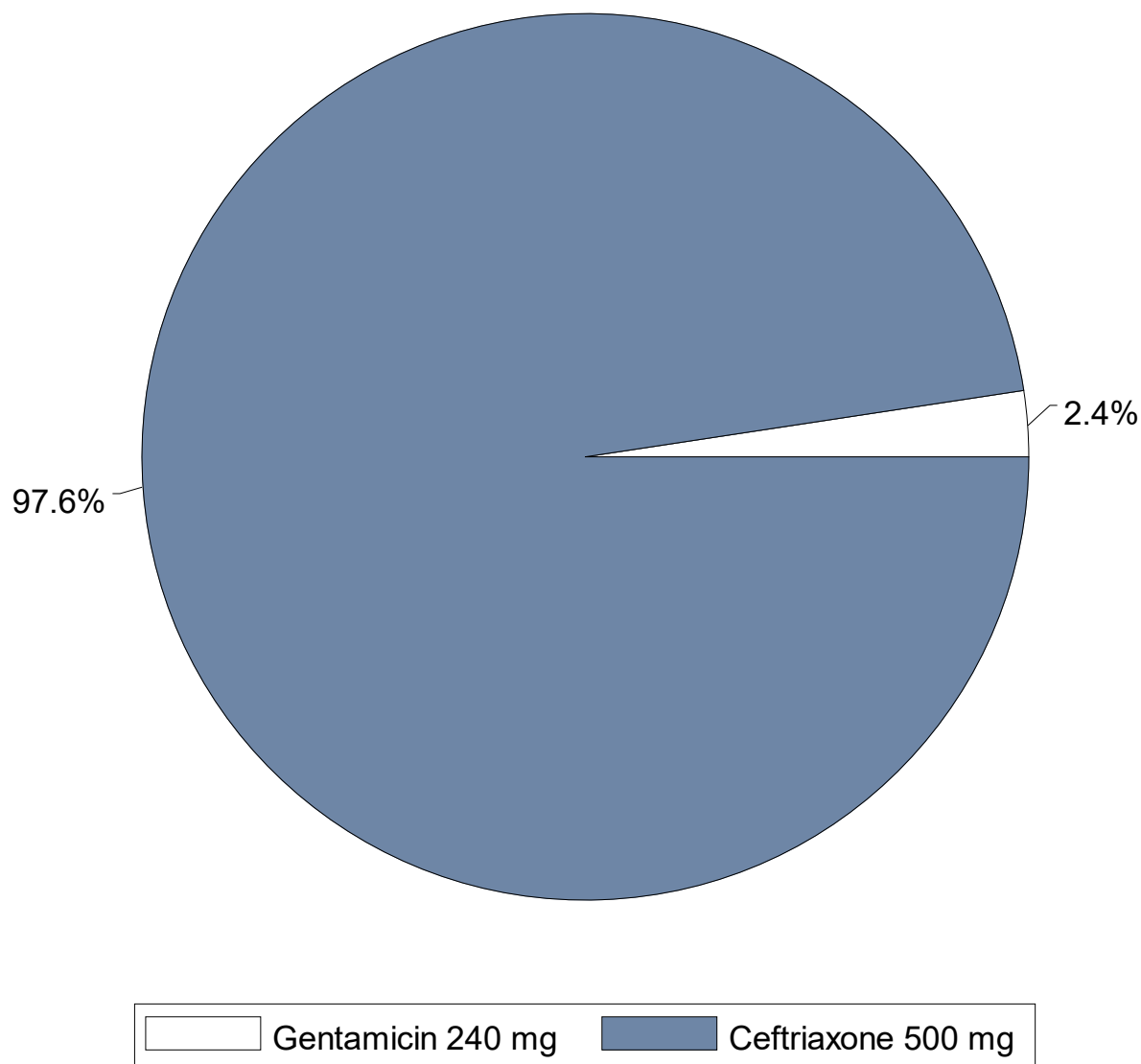


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
2 (3.8)	31 (11.0)	38 (13.1)	31 (10.5)	31 (10.4)	45 (15.0)	45 (15.1)	55 (18.5)	64 (21.3)	85 (29.2)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
81 (32.0)	110 (36.7)	92 (30.7)	131 (43.7)	131 (43.7)	126 (42.0)	97 (34.6)	69 (28.8)	58 (35.6)	48 (29.1)

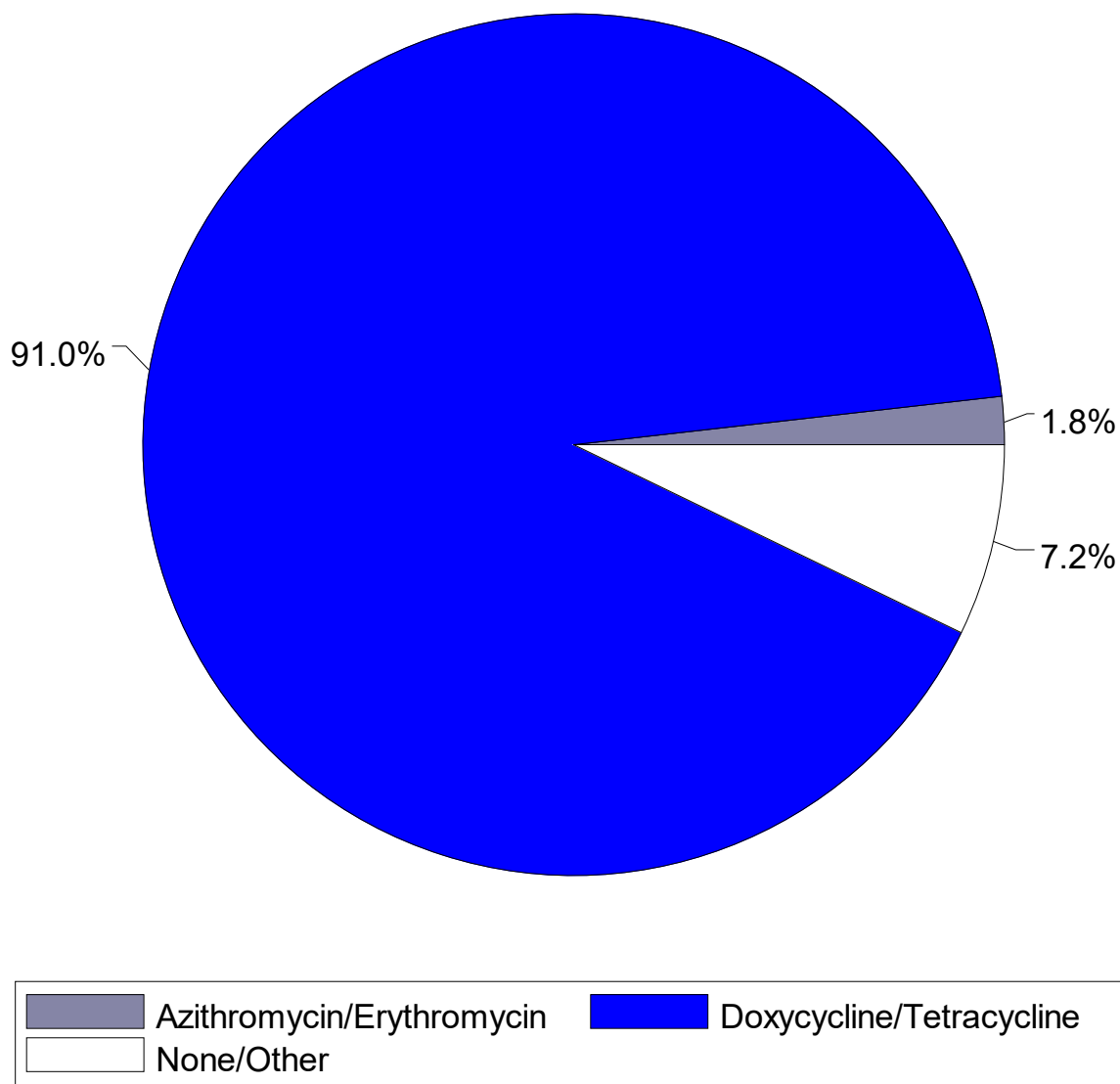
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Las Vegas, Nevada, 2021



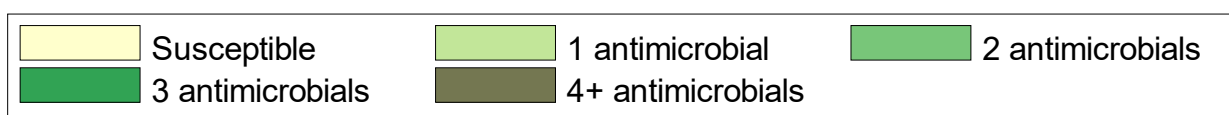
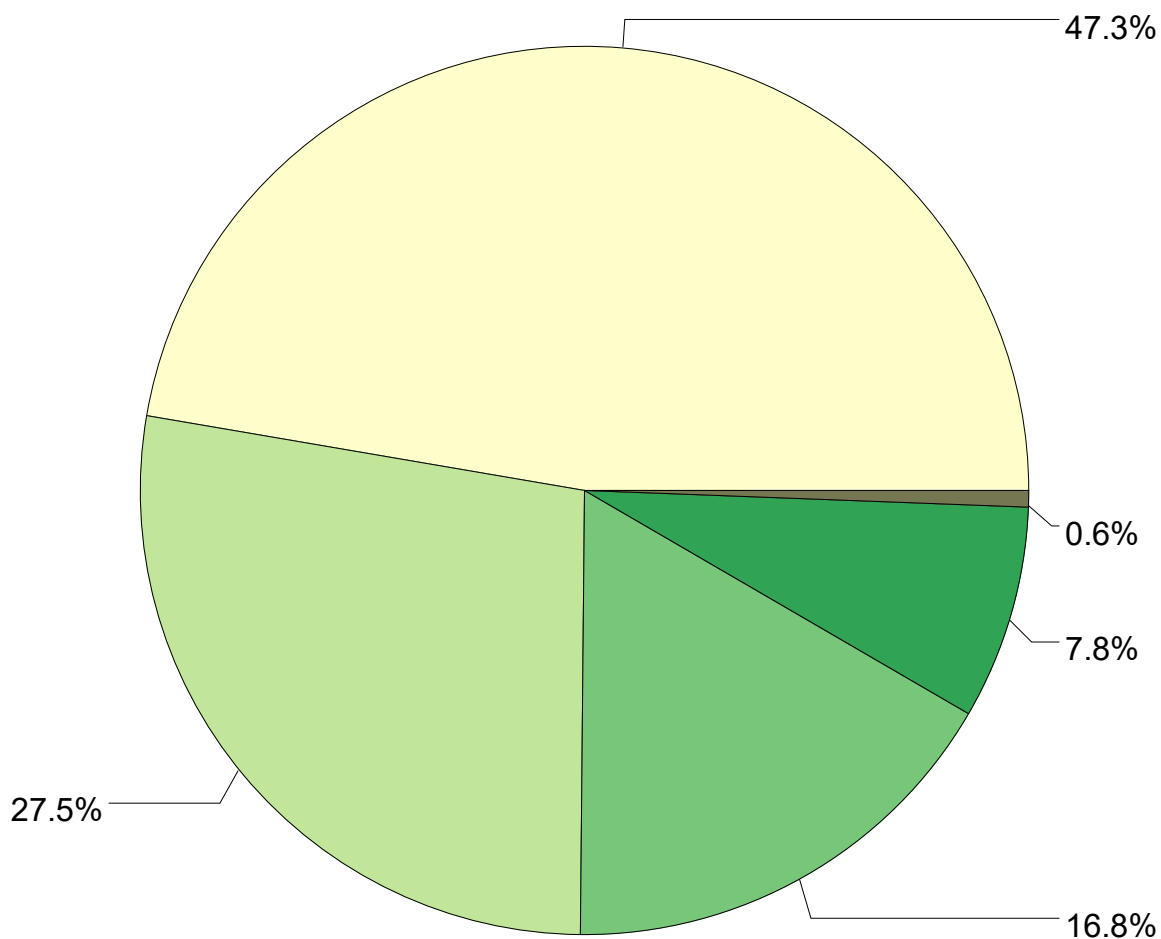
Primary Treatment	Count	Percentage
Gentamicin 240 mg	4	2.4
Ceftriaxone 500 mg	163	97.6

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	3	1.8
Doxycycline/Tetracycline	152	91.0
None/Other	12	7.2

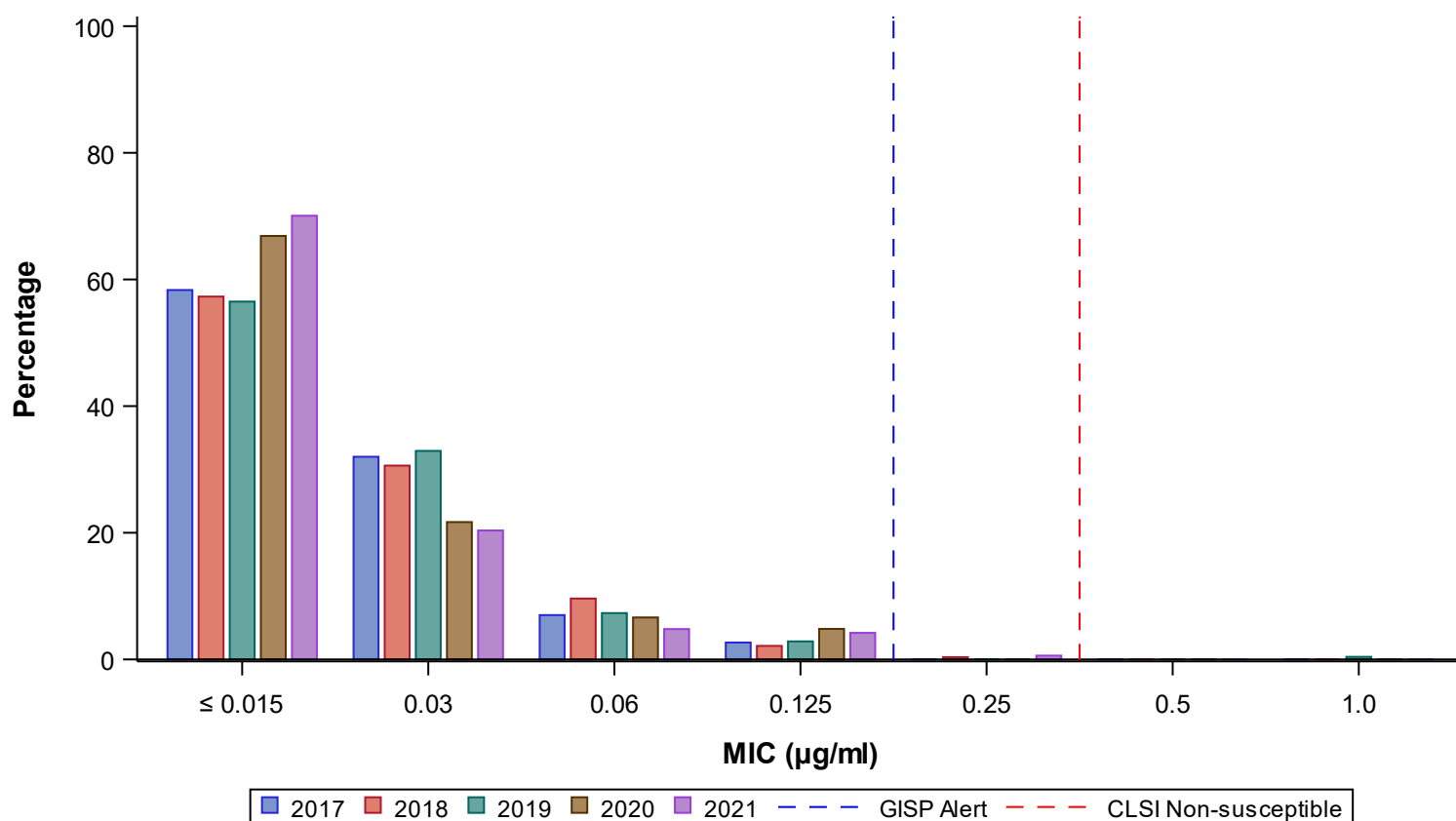
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	79	47.3
1 antimicrobial	46	27.5
2 antimicrobials	28	16.8
3 antimicrobials	13	7.8
4+ antimicrobials	1	0.6

Note: Elevated MICs = Ceftriaxone: MIC $\geq$ 0.125 μ g/mL; Cefixime: MIC $\geq$ 0.25 μ g/mL; Azithromycin: MIC $\geq$ 2.0 μ g/ml; Resistance = Tetracycline: MIC $\geq$ 2.0 μ g/mL; Ciprofloxacin: MIC $\geq$ 1.0 μ g/mL; Penicillin: MIC $\geq$ 2.0 μ g/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2017-2021



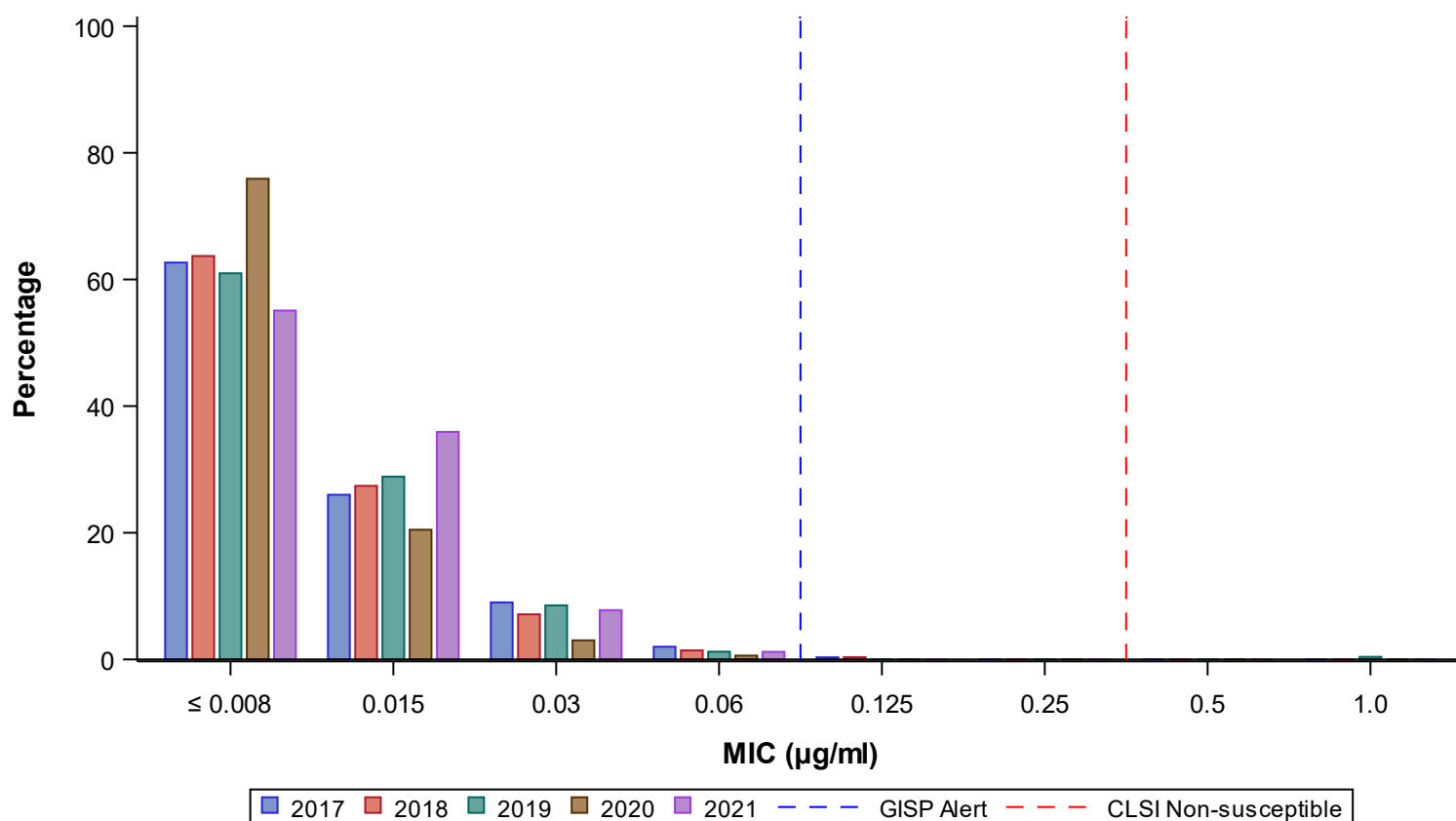
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	175 (58.3)	96 (32.0)	21 (7.0)	8 (2.7)	0 (0.0)	0 (0.0)	0 (0.0)	300
2018	161 (57.3)	86 (30.6)	27 (9.6)	6 (2.1)	1 (0.4)	0 (0.0)	0 (0.0)	281
2019	139 (56.5)	81 (32.9)	18 (7.3)	7 (2.8)	0 (0.0)	0 (0.0)	1 (0.4)	246
2020	111 (66.9)	36 (21.7)	11 (6.6)	8 (4.8)	0 (0.0)	0 (0.0)	0 (0.0)	166
2021	117 (70.1)	34 (20.4)	8 (4.8)	7 (4.2)	1 (0.6)	0 (0.0)	0 (0.0)	167

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	188 (62.7)	78 (26.0)	27 (9.0)	6 (2.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	300
2018	179 (63.7)	77 (27.4)	20 (7.1)	4 (1.4)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	281
2019	150 (61.0)	71 (28.9)	21 (8.5)	3 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	246
2020	126 (75.9)	34 (20.5)	5 (3.0)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	166
2021	92 (55.1)	60 (35.9)	13 (7.8)	2 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	167

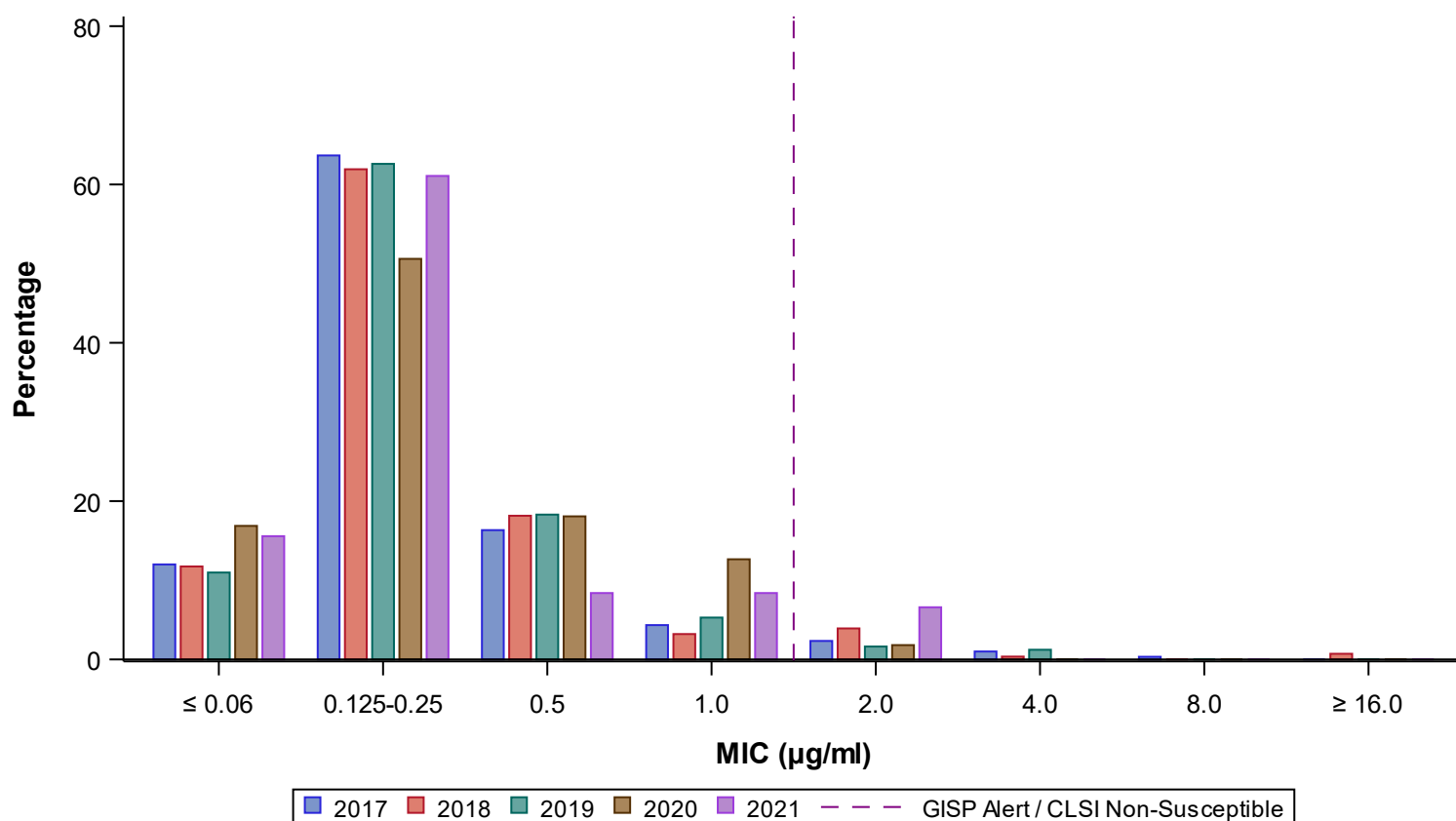
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	36 (12.0)	191 (63.7)	49 (16.3)	13 (4.3)	7 (2.3)	3 (1.0)	1 (0.3)	0 (0.0)	300
2018	33 (11.7)	174 (61.9)	51 (18.1)	9 (3.2)	11 (3.9)	1 (0.4)	0 (0.0)	2 (0.7)	281
2019	27 (11.0)	154 (62.6)	45 (18.3)	13 (5.3)	4 (1.6)	3 (1.2)	0 (0.0)	0 (0.0)	246
2020	28 (16.9)	84 (50.6)	30 (18.1)	21 (12.7)	3 (1.8)	0 (0.0)	0 (0.0)	0 (0.0)	166
2021	26 (15.6)	102 (61.1)	14 (8.4)	14 (8.4)	11 (6.6)	0 (0.0)	0 (0.0)	0 (0.0)	167

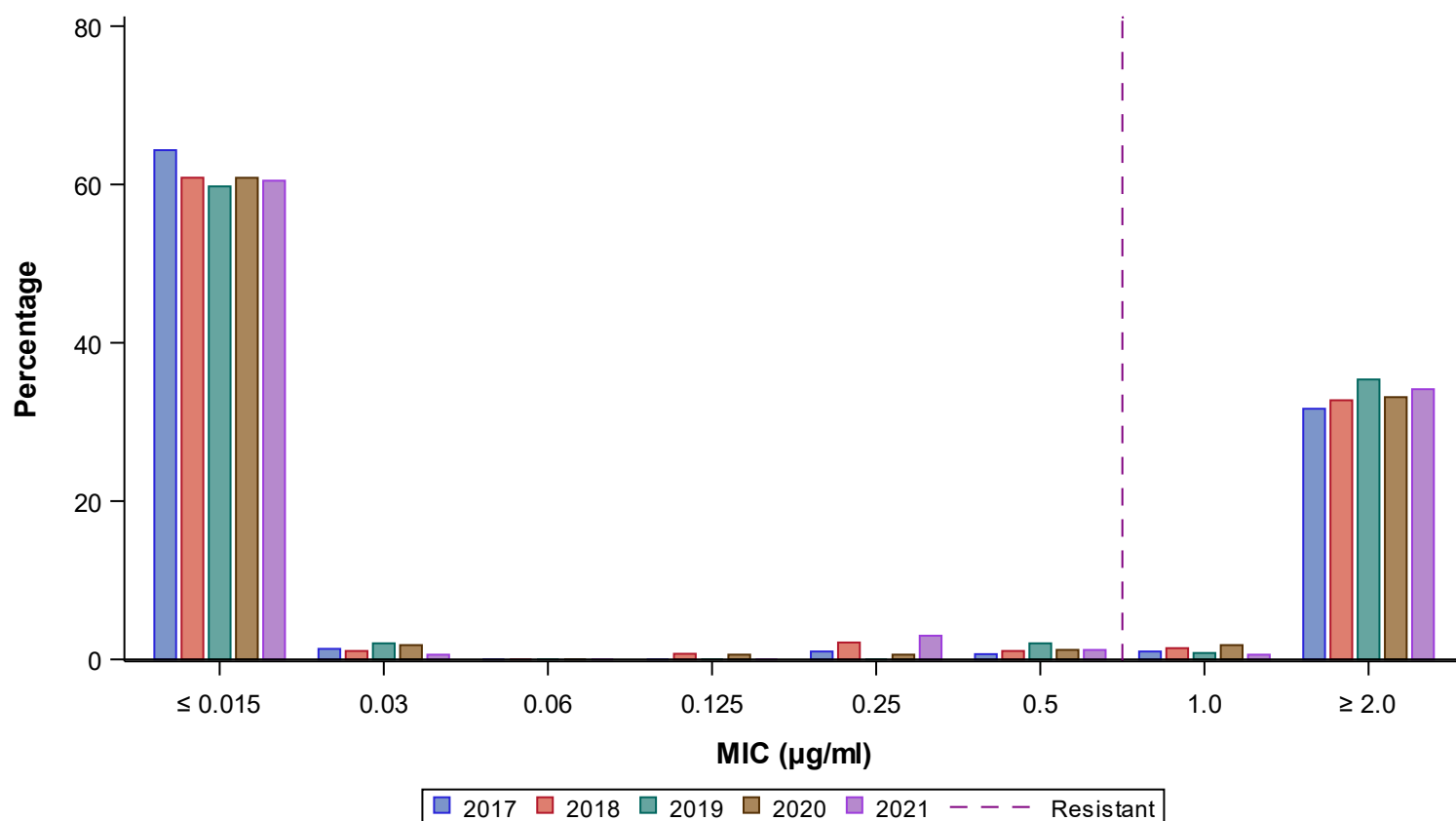
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

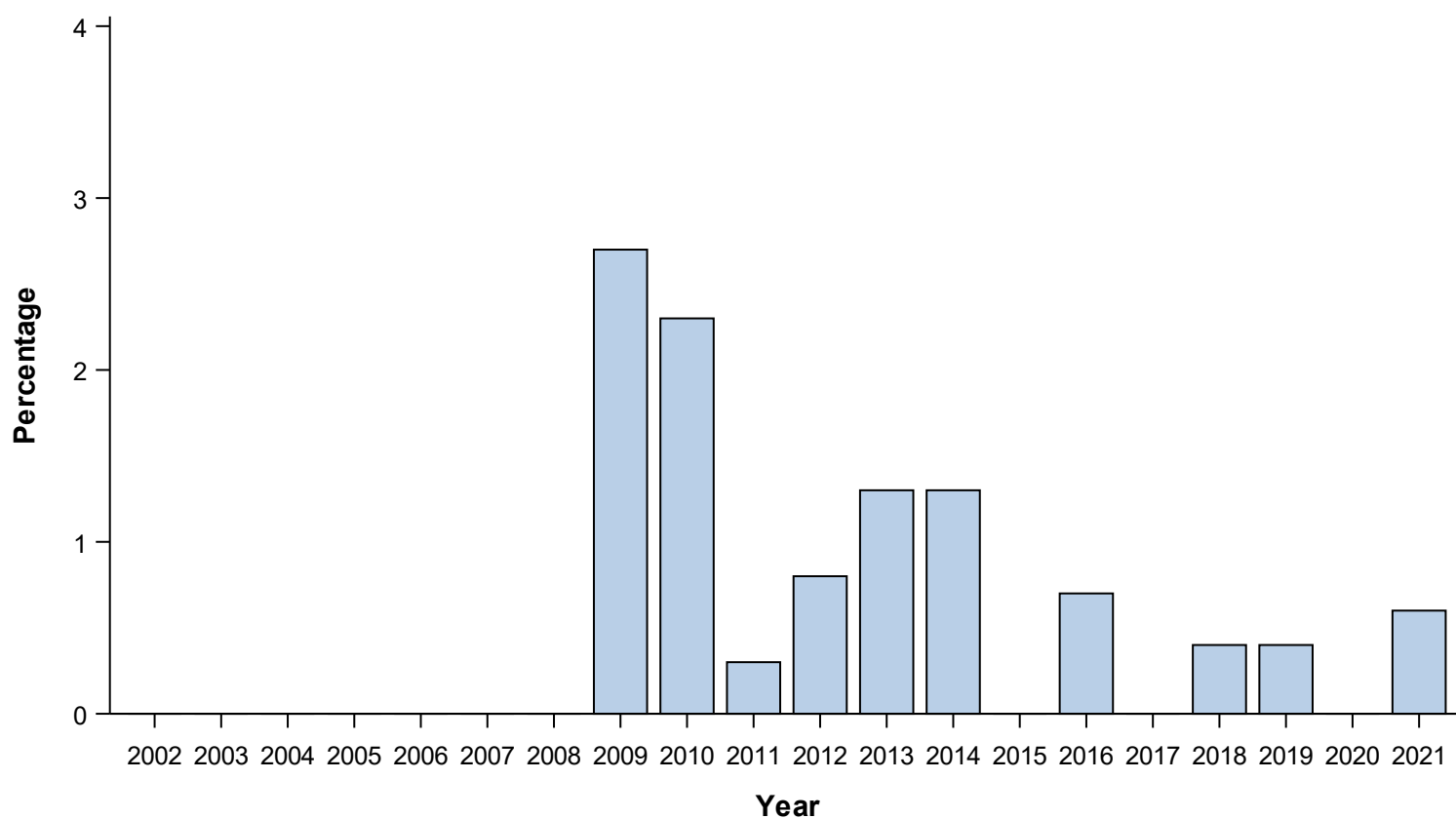
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	193 (64.3)	4 (1.3)	0 (0.0)	0 (0.0)	3 (1.0)	2 (0.7)	3 (1.0)	95 (31.7)	300
2018	171 (60.9)	3 (1.1)	0 (0.0)	2 (0.7)	6 (2.1)	3 (1.1)	4 (1.4)	92 (32.7)	281
2019	147 (59.8)	5 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (2.0)	2 (0.8)	87 (35.4)	246
2020	101 (60.8)	3 (1.8)	0 (0.0)	1 (0.6)	1 (0.6)	2 (1.2)	3 (1.8)	55 (33.1)	166
2021	101 (60.5)	1 (0.6)	0 (0.0)	0 (0.0)	5 (3.0)	2 (1.2)	1 (0.6)	57 (34.1)	167

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2002-2021

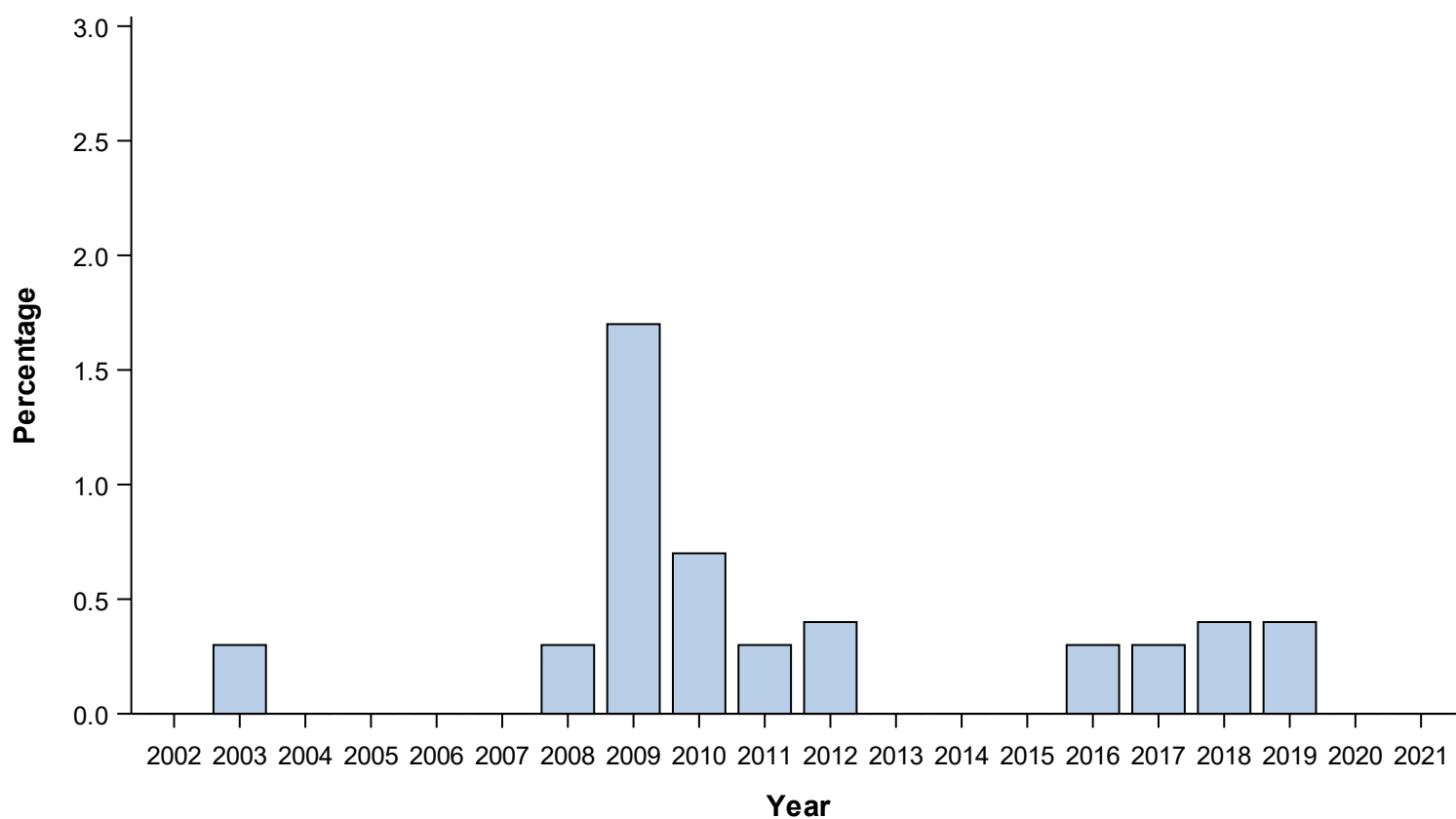


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	8 (2.7)	7 (2.3)	1 (0.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
2 (0.8)	4 (1.3)	4 (1.3)	0 (0.0)	2 (0.7)	0 (0.0)	1 (0.4)	1 (0.4)	0 (0.0)	1 (0.6)

Note: Cefixime elevated MIC $\geq$ 0.25 μ g/ml.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2002-2021

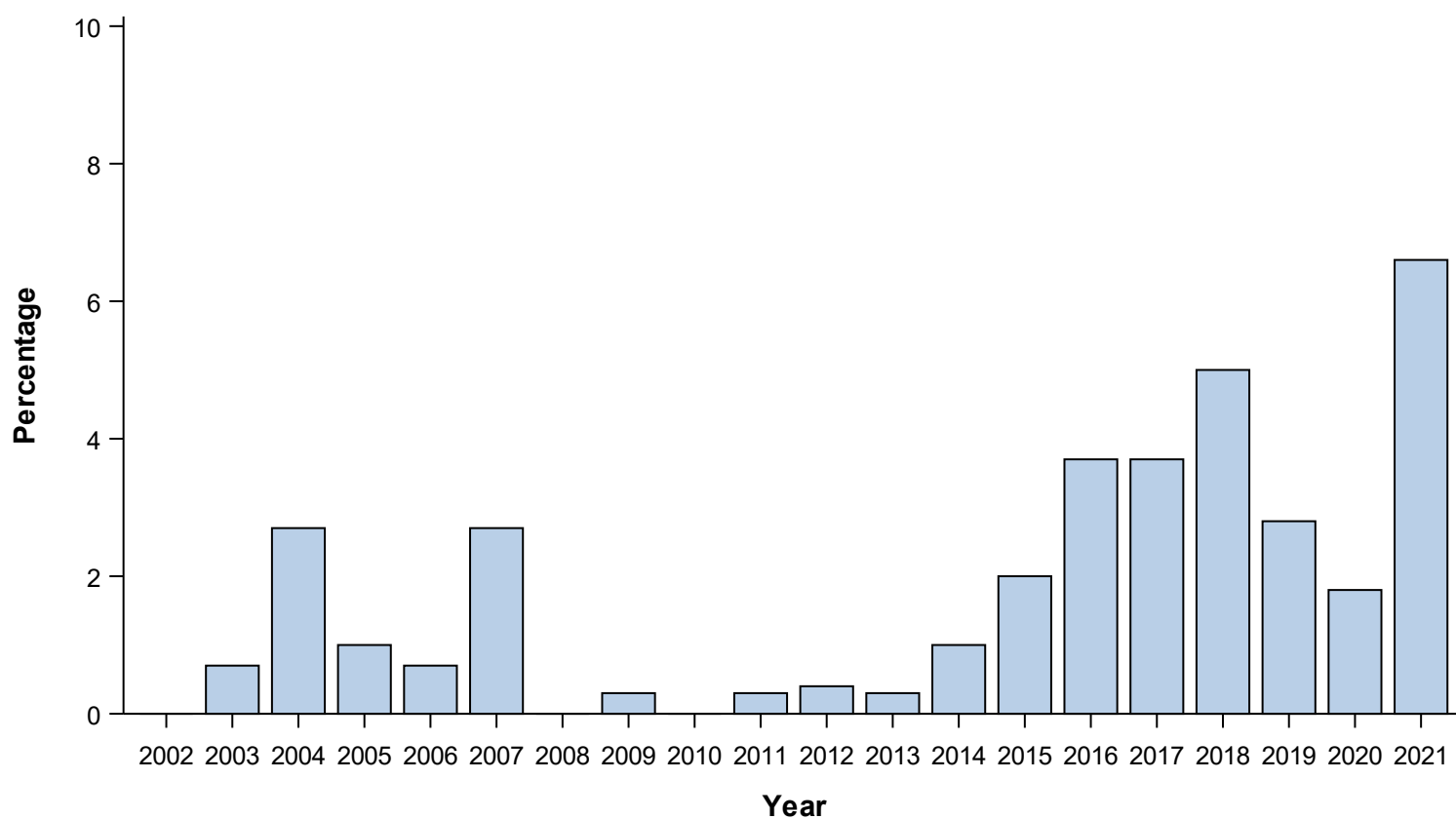


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.3)	5 (1.7)	2 (0.7)	1 (0.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.3)	1 (0.3)	1 (0.4)	1 (0.4)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Las Vegas, Nevada, 2002-2021

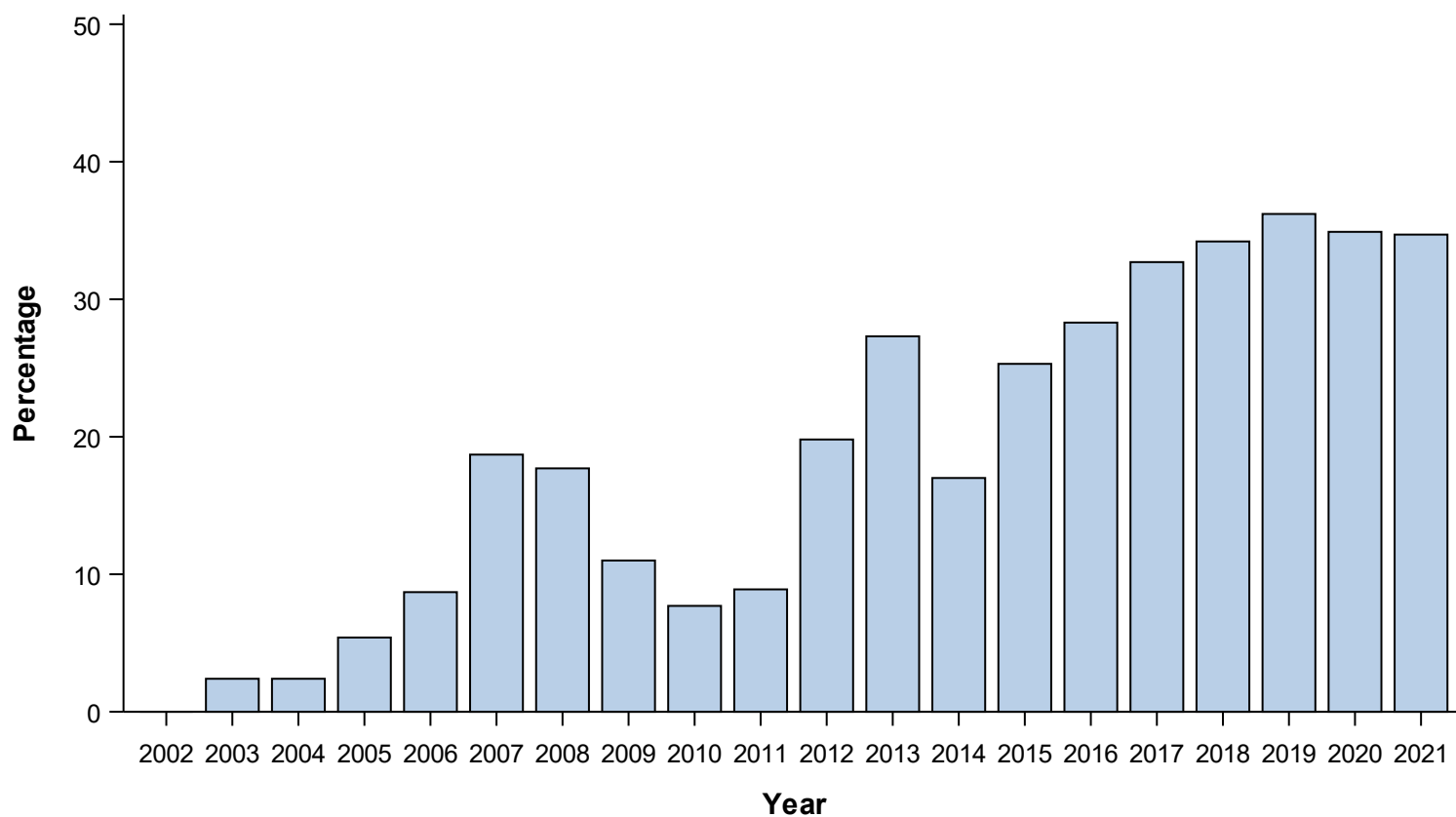


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	2 (0.7)	8 (2.7)	3 (1.0)	2 (0.7)	8 (2.7)	0 (0.0)	1 (0.3)	0 (0.0)	1 (0.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.4)	1 (0.3)	3 (1.0)	6 (2.0)	11 (3.7)	11 (3.7)	14 (5.0)	7 (2.8)	3 (1.8)	11 (6.6)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Las Vegas, Nevada, 2002-2021

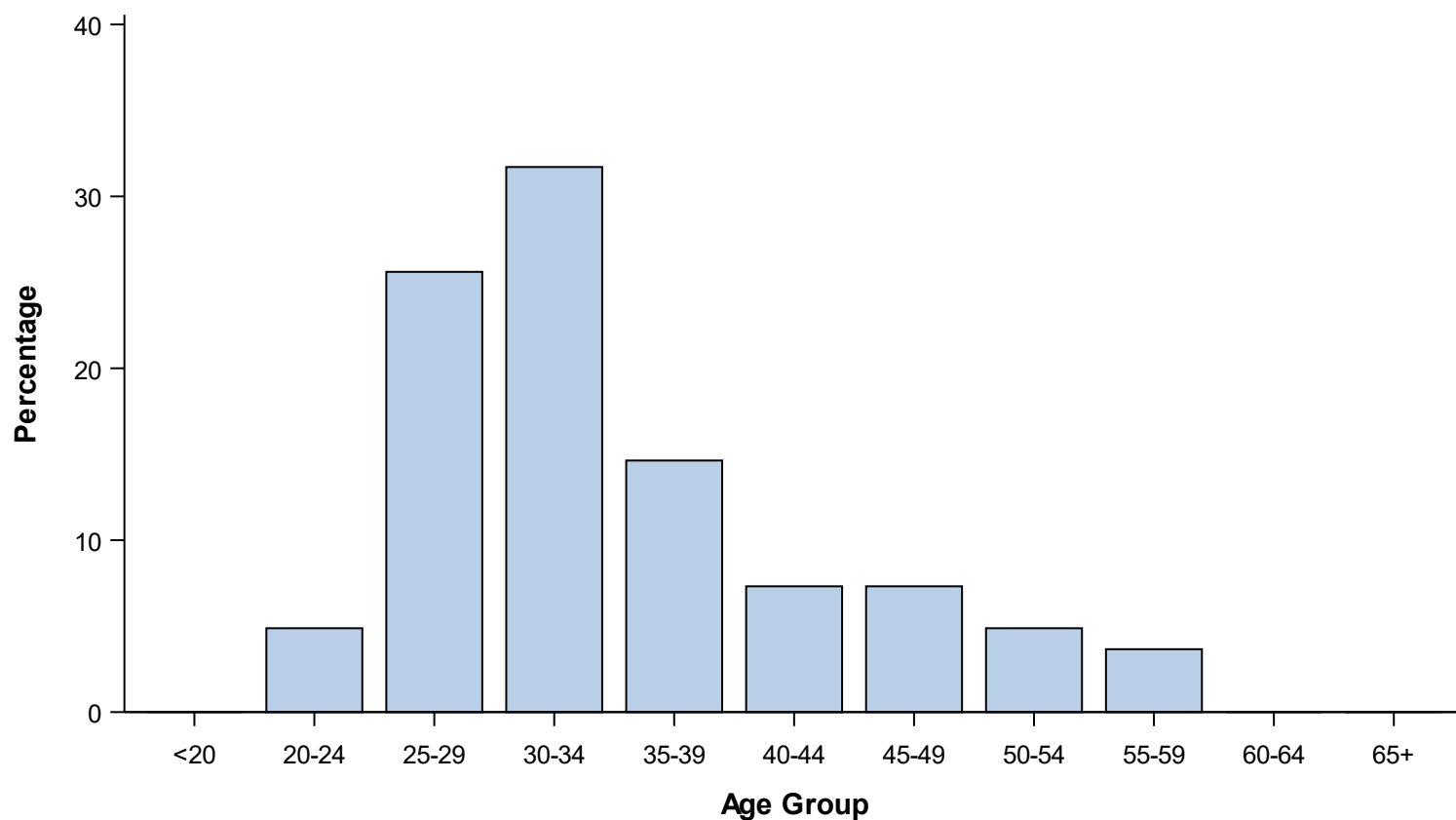


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	7 (2.4)	7 (2.4)	16 (5.4)	26 (8.7)	56 (18.7)	53 (17.7)	33 (11.0)	23 (7.7)	26 (8.9)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
50 (19.8)	82 (27.3)	51 (17.0)	76 (25.3)	85 (28.3)	98 (32.7)	96 (34.2)	89 (36.2)	58 (34.9)	58 (34.7)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

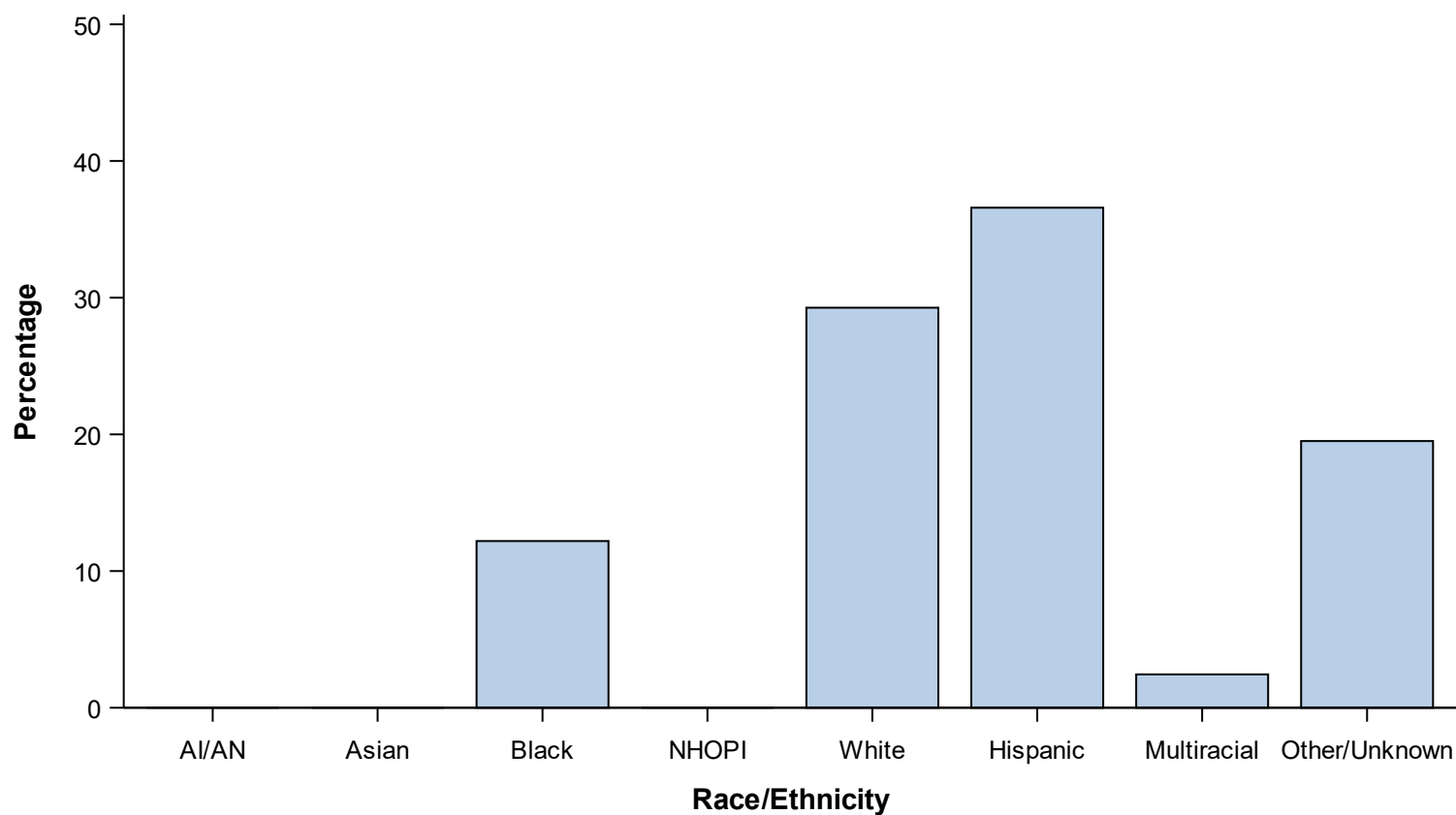
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
0 (0.0)	4 (4.9)	21 (25.6)	26 (31.7)	12 (14.6)	6 (7.3)	6 (7.3)	4 (4.9)	3 (3.7)	0 (0.0)	0 (0.0)	82

Note: Cases with unknown age were excluded.

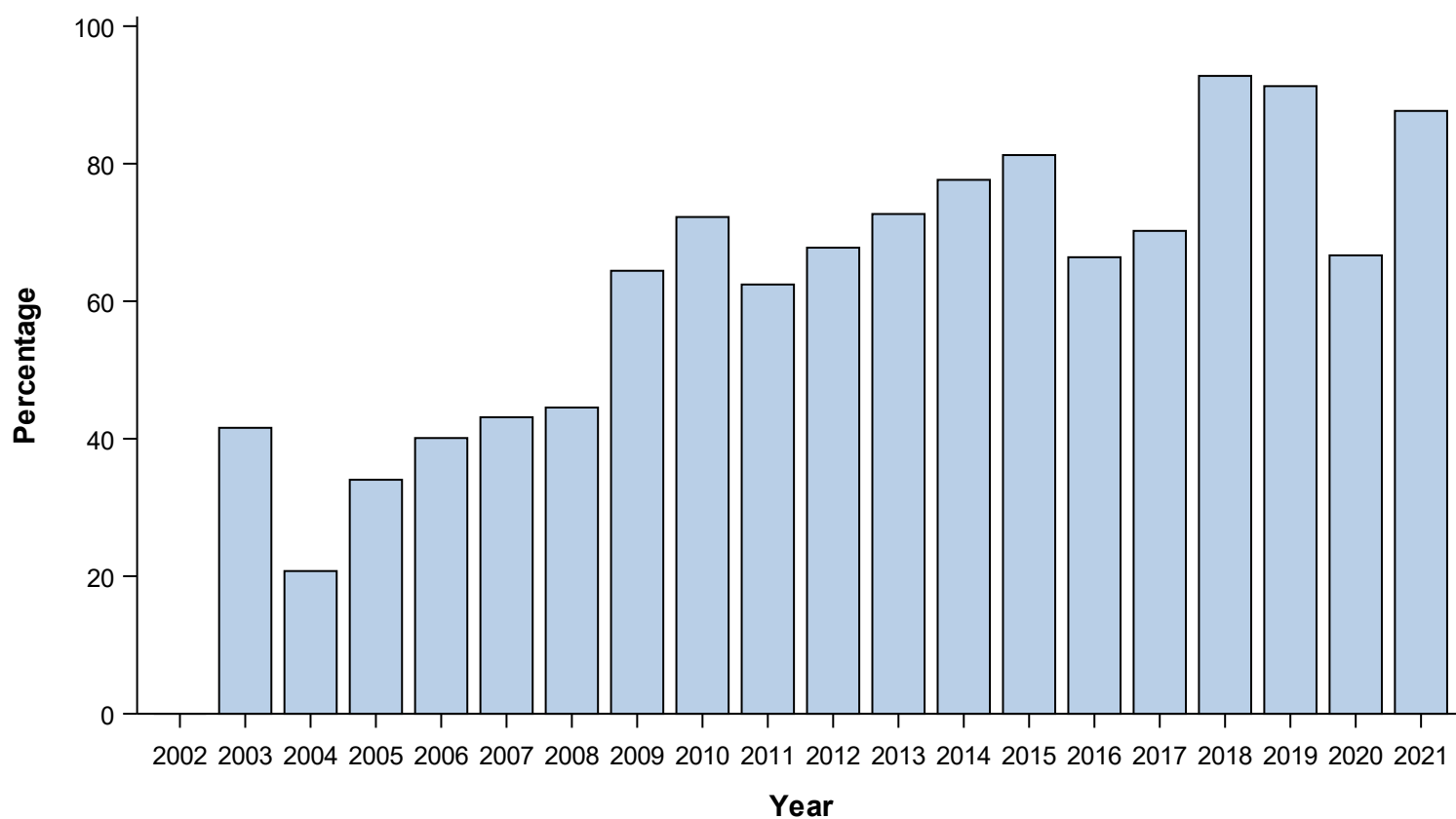
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	10 (12.2)	0 (0.0)	24 (29.3)	30 (36.6)	2 (2.4)	16 (19.5)	82

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Los Angeles, California, 2002-2021

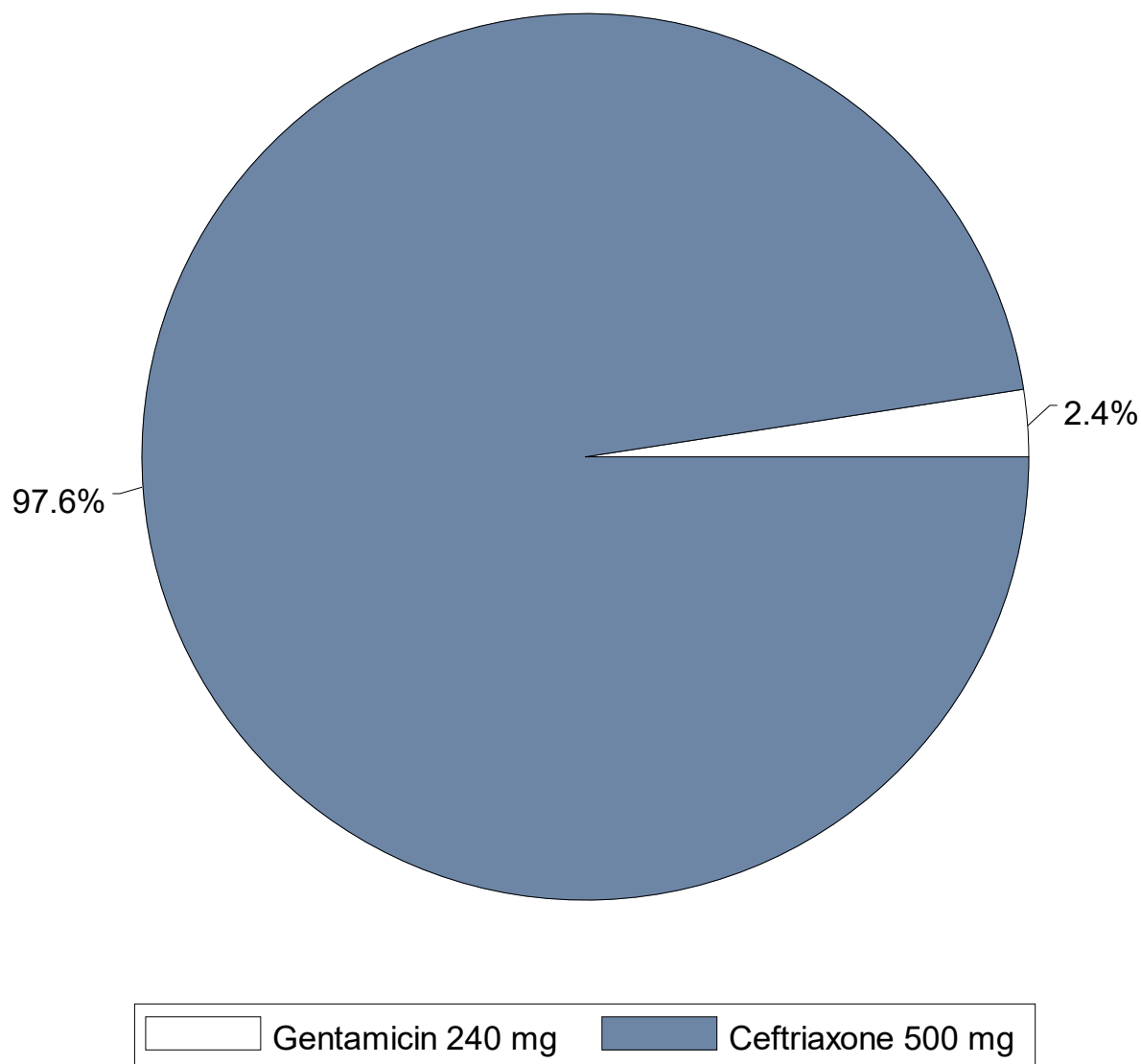


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	84 (41.6)	55 (20.8)	65 (34.0)	81 (40.1)	69 (43.1)	53 (44.5)	134 (64.4)	190 (72.2)	108 (62.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
101 (67.8)	141 (72.7)	132 (77.6)	65 (81.3)	81 (66.4)	125 (70.2)	141 (92.8)	136 (91.3)	28 (66.7)	64 (87.7)

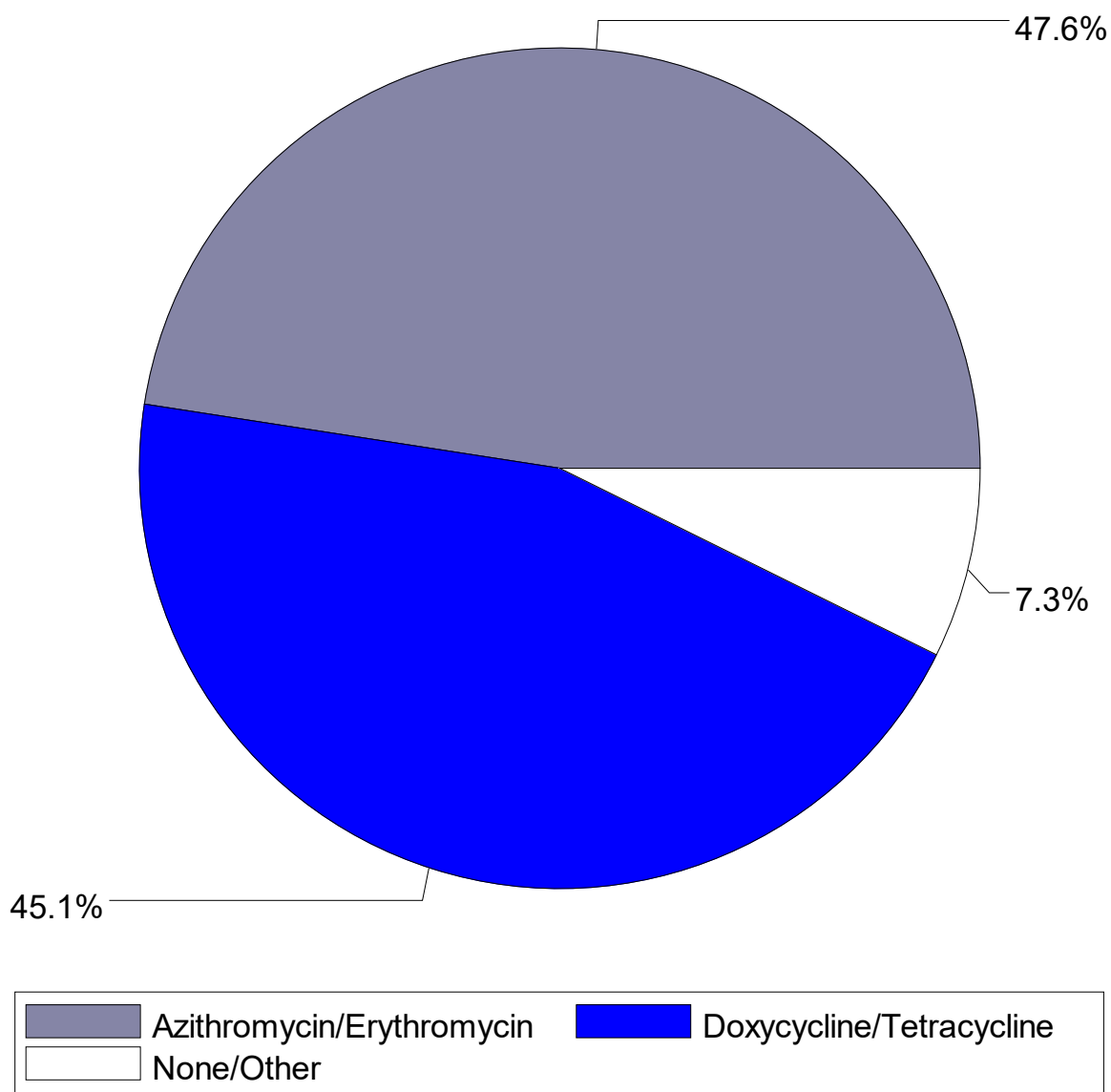
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.
Site participated in GISP during 2003-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2021



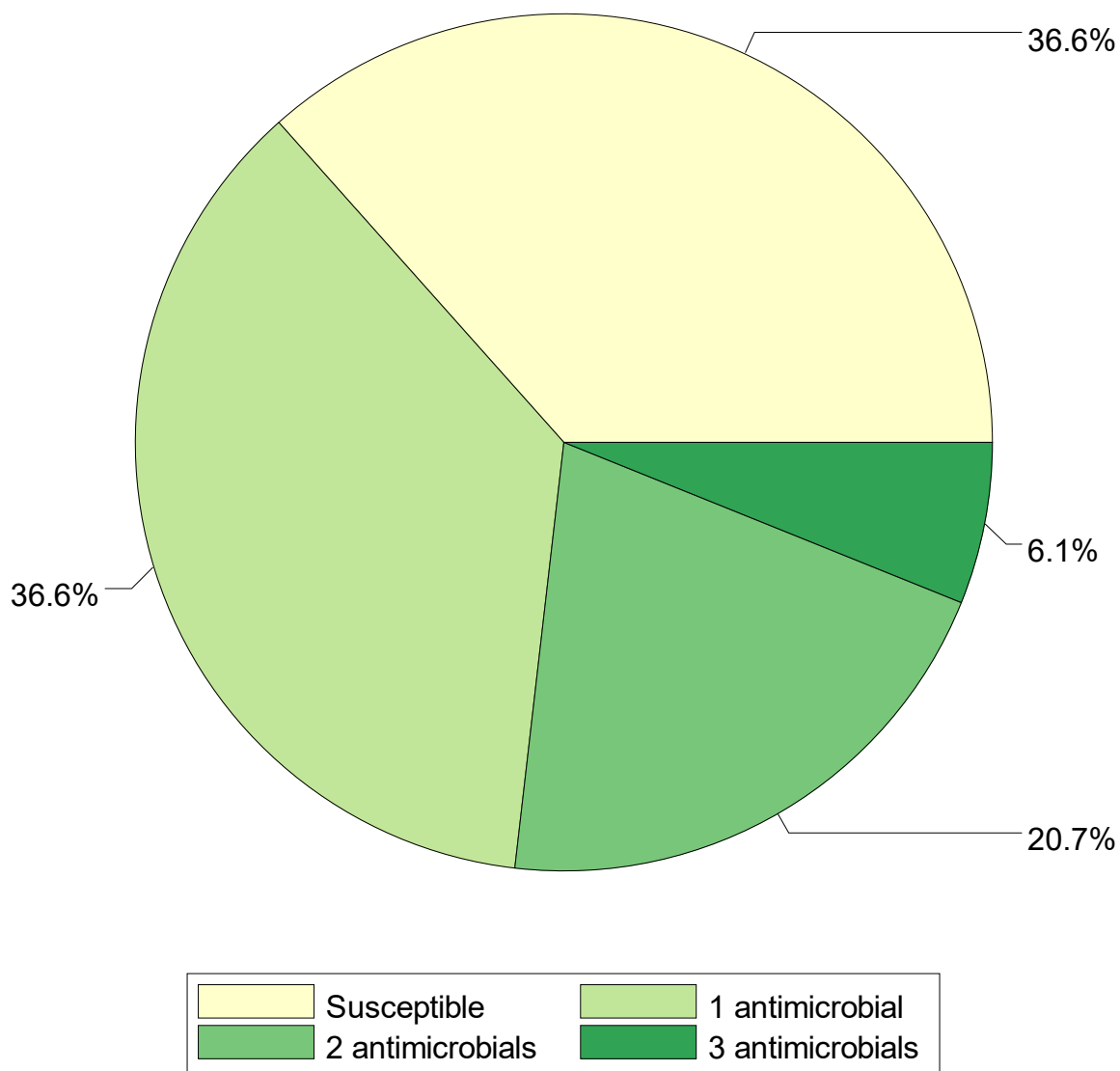
Primary Treatment	Count	Percentage
Gentamicin 240 mg	2	2.4
Ceftriaxone 500 mg	80	97.6

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	39	47.6
Doxycycline/Tetracycline	37	45.1
None/Other	6	7.3

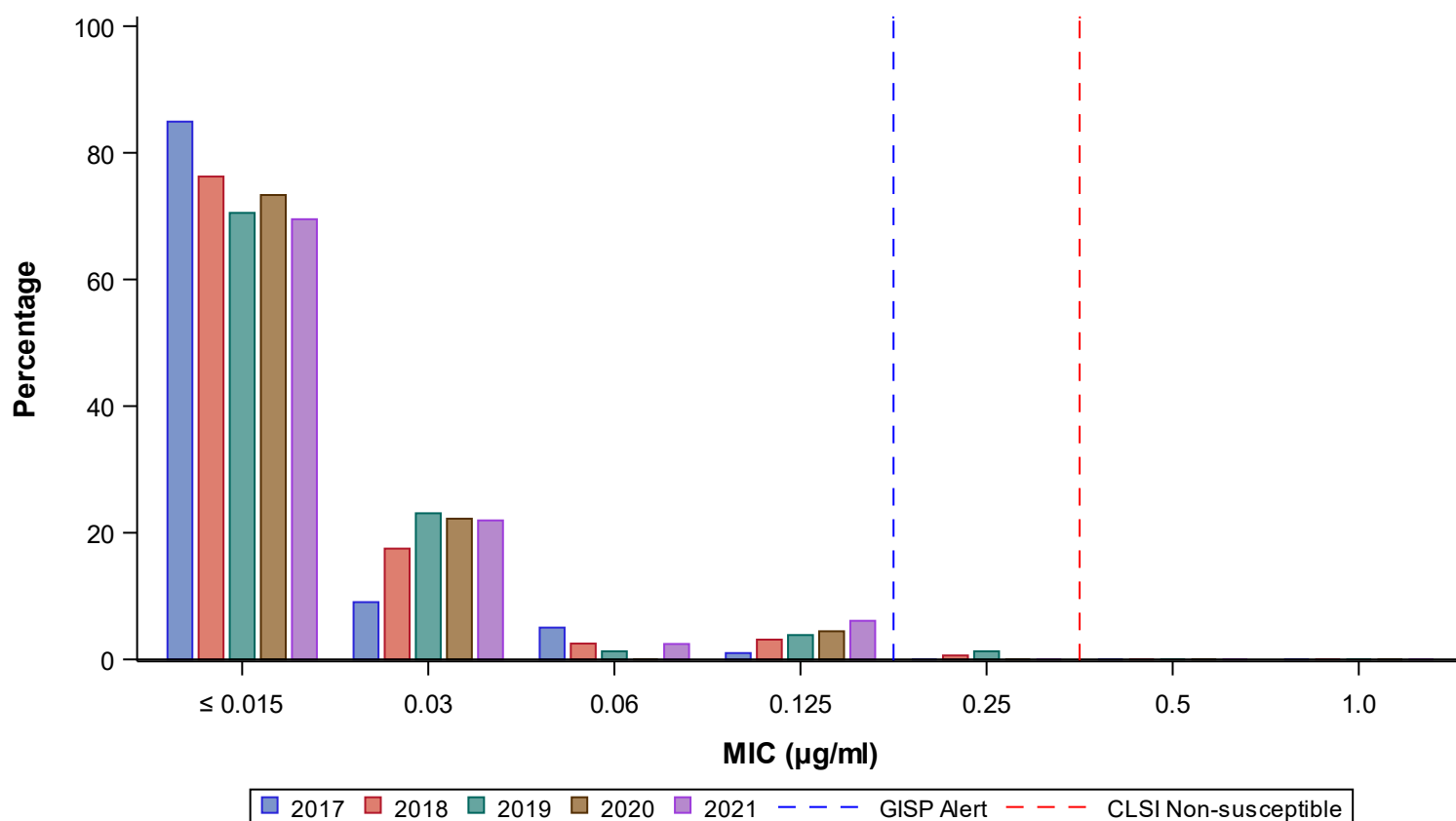
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	30	36.6
1 antimicrobial	30	36.6
2 antimicrobials	17	20.7
3 antimicrobials	5	6.1
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC $\geq$ 0.125 μ g/mL; Cefixime: MIC $\geq$ 0.25 μ g/mL; Azithromycin: MIC $\geq$ 2.0 μ g/ml; Resistance = Tetracycline: MIC $\geq$ 2.0 μ g/mL; Ciprofloxacin: MIC $\geq$ 1.0 μ g/mL; Penicillin: MIC $\geq$ 2.0 μ g/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2017-2021



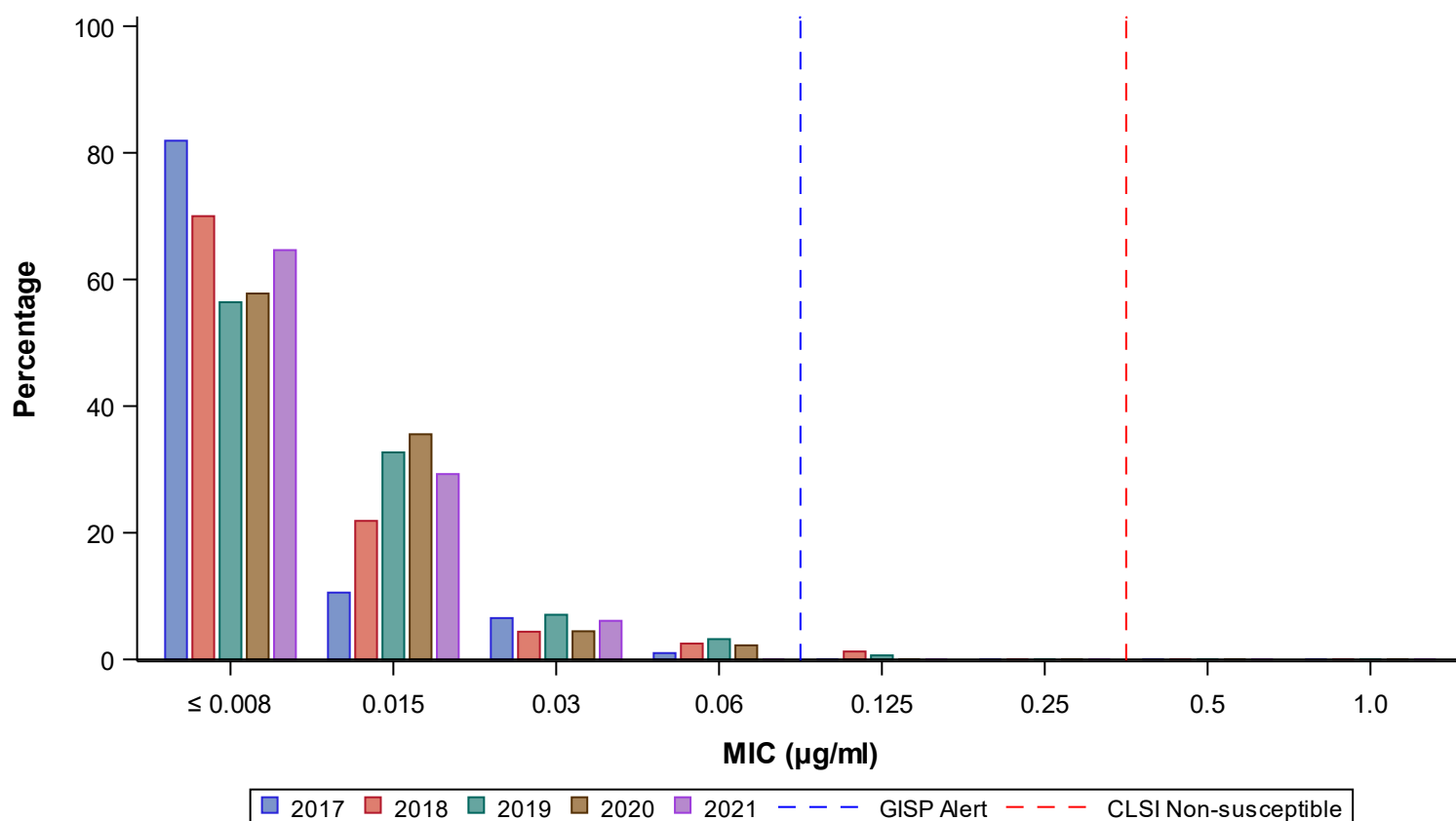
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	169 (84.9)	18 (9.0)	10 (5.0)	2 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	199
2018	122 (76.3)	28 (17.5)	4 (2.5)	5 (3.1)	1 (0.6)	0 (0.0)	0 (0.0)	160
2019	110 (70.5)	36 (23.1)	2 (1.3)	6 (3.8)	2 (1.3)	0 (0.0)	0 (0.0)	156
2020	33 (73.3)	10 (22.2)	0 (0.0)	2 (4.4)	0 (0.0)	0 (0.0)	0 (0.0)	45
2021	57 (69.5)	18 (22.0)	2 (2.4)	5 (6.1)	0 (0.0)	0 (0.0)	0 (0.0)	82

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	163 (81.9)	21 (10.6)	13 (6.5)	2 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	199
2018	112 (70.0)	35 (21.9)	7 (4.4)	4 (2.5)	2 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	160
2019	88 (56.4)	51 (32.7)	11 (7.1)	5 (3.2)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	156
2020	26 (57.8)	16 (35.6)	2 (4.4)	1 (2.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	45
2021	53 (64.6)	24 (29.3)	5 (6.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	82

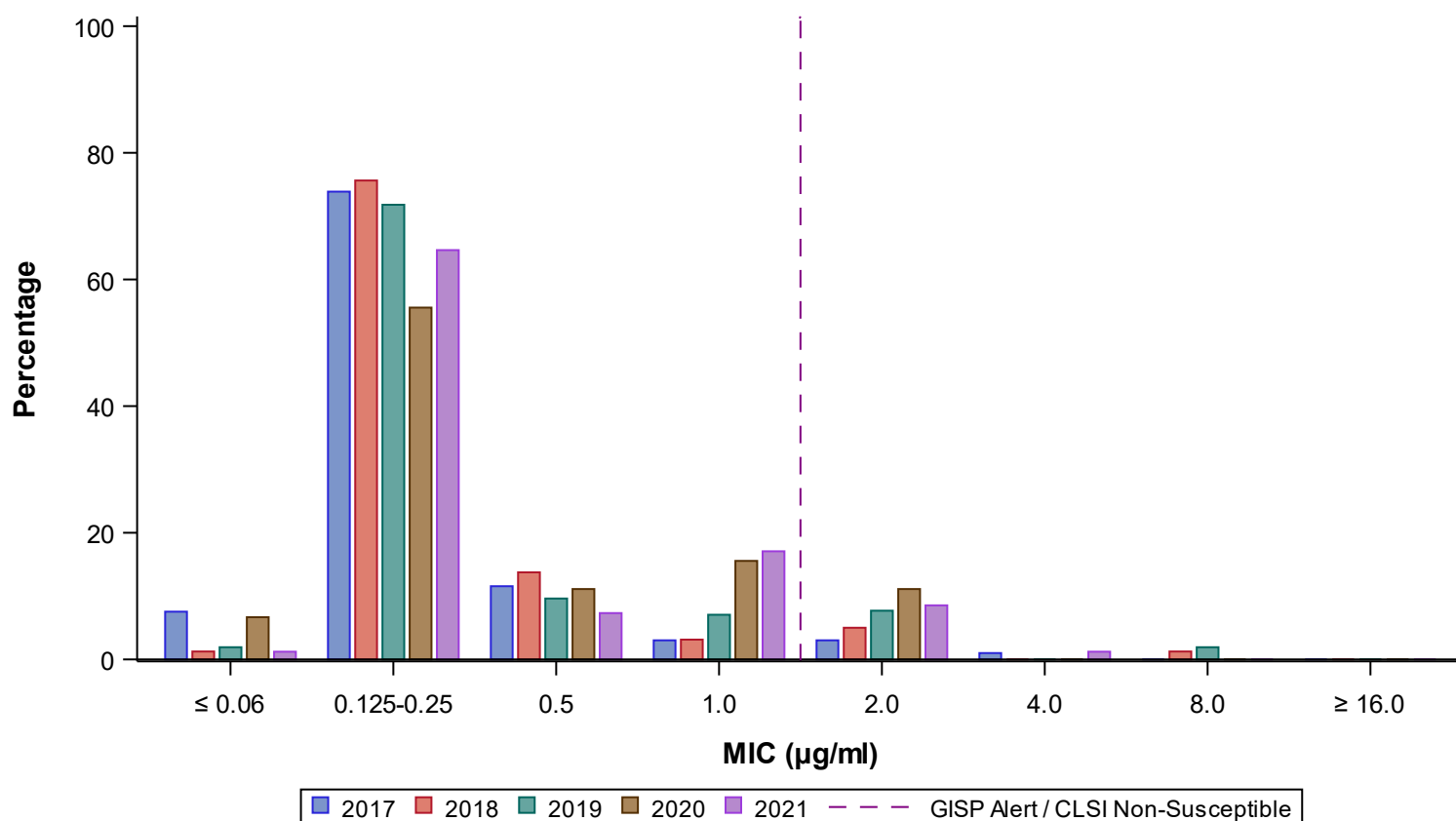
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	15 (7.5)	147 (73.9)	23 (11.6)	6 (3.0)	6 (3.0)	2 (1.0)	0 (0.0)	0 (0.0)	199
2018	2 (1.3)	121 (75.6)	22 (13.8)	5 (3.1)	8 (5.0)	0 (0.0)	2 (1.3)	0 (0.0)	160
2019	3 (1.9)	112 (71.8)	15 (9.6)	11 (7.1)	12 (7.7)	0 (0.0)	3 (1.9)	0 (0.0)	156
2020	3 (6.7)	25 (55.6)	5 (11.1)	7 (15.6)	5 (11.1)	0 (0.0)	0 (0.0)	0 (0.0)	45
2021	1 (1.2)	53 (64.6)	6 (7.3)	14 (17.1)	7 (8.5)	1 (1.2)	0 (0.0)	0 (0.0)	82

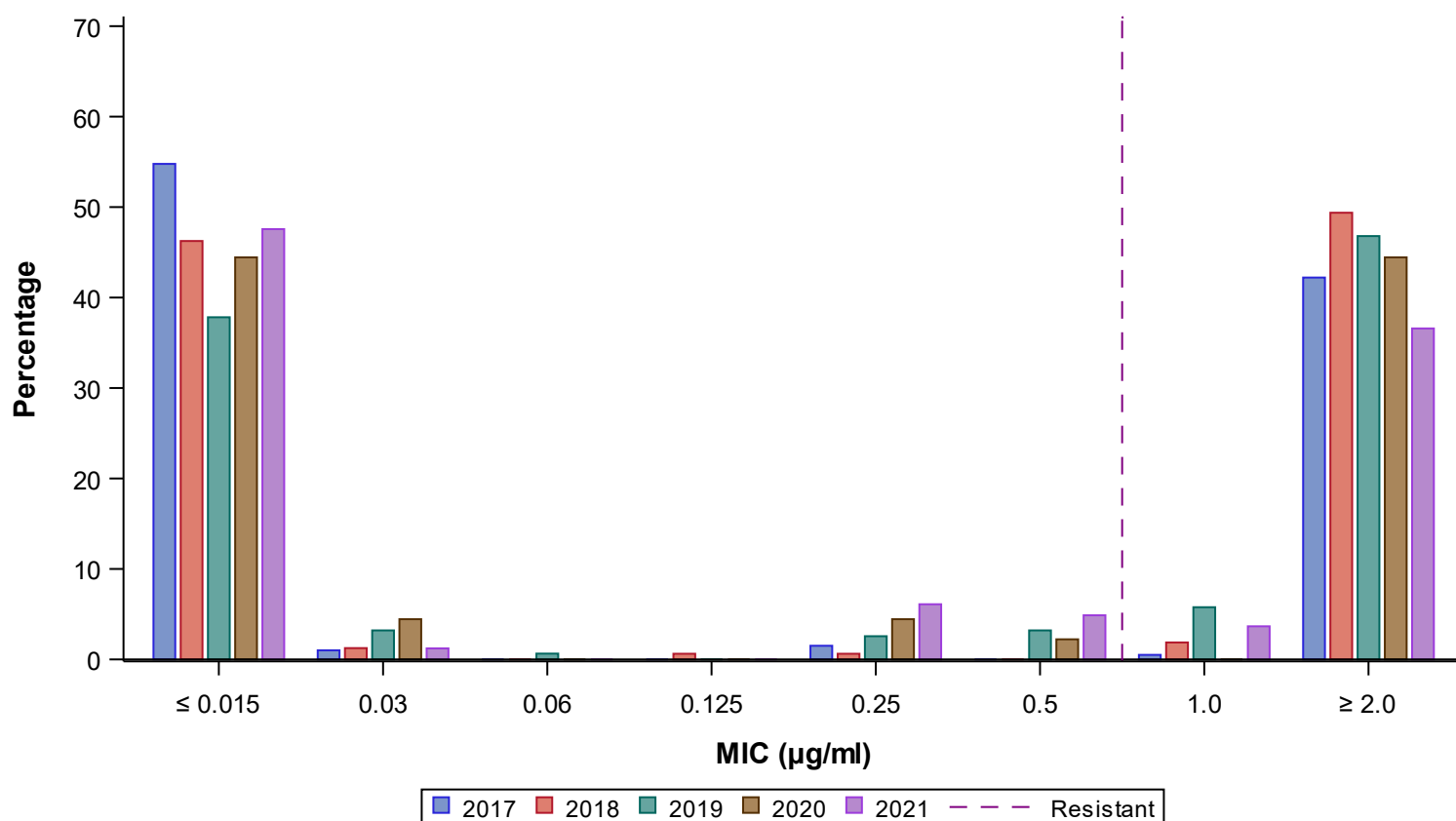
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

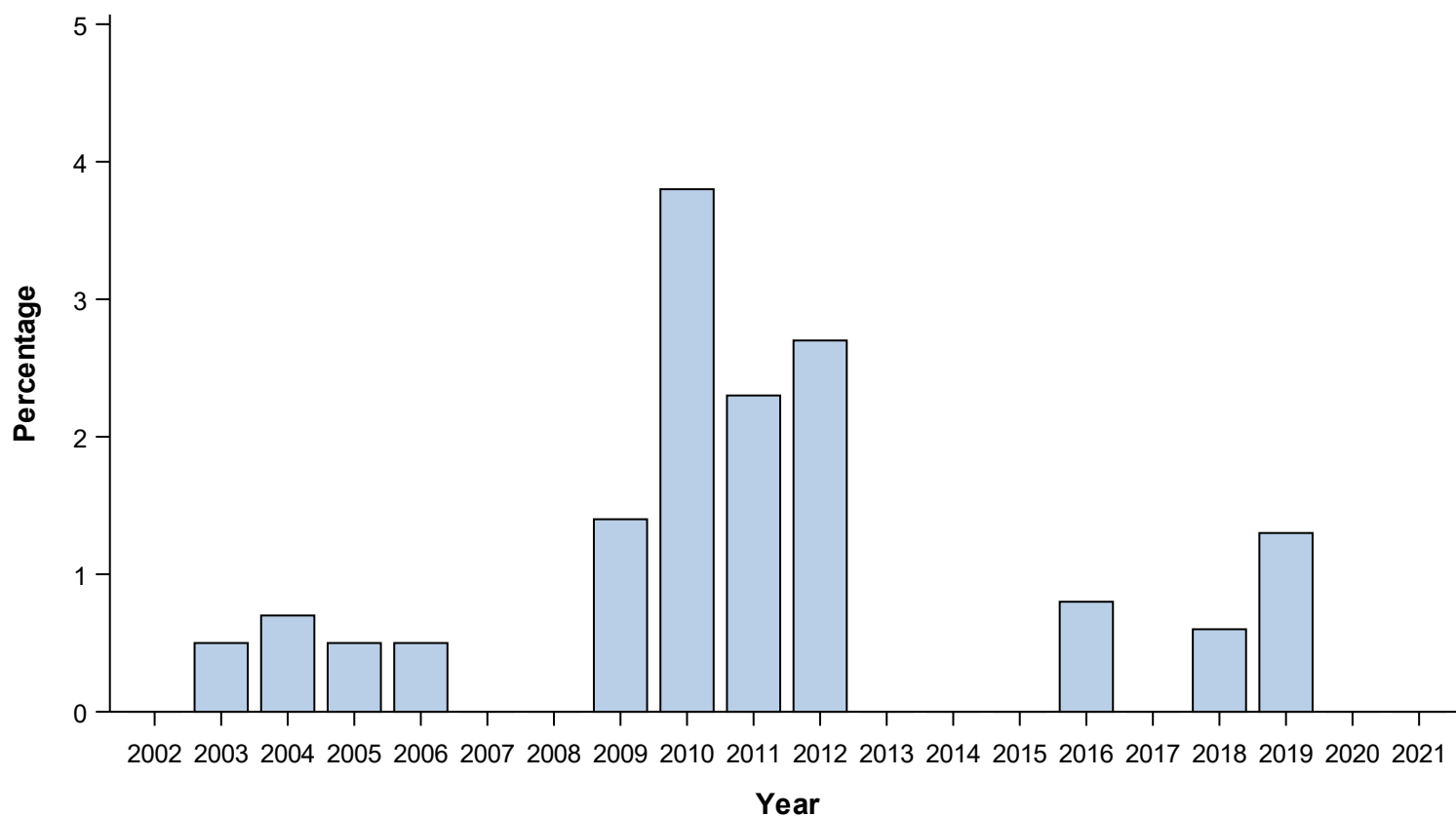
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	109 (54.8)	2 (1.0)	0 (0.0)	0 (0.0)	3 (1.5)	0 (0.0)	1 (0.5)	84 (42.2)	199
2018	74 (46.3)	2 (1.3)	0 (0.0)	1 (0.6)	1 (0.6)	0 (0.0)	3 (1.9)	79 (49.4)	160
2019	59 (37.8)	5 (3.2)	1 (0.6)	0 (0.0)	4 (2.6)	5 (3.2)	9 (5.8)	73 (46.8)	156
2020	20 (44.4)	2 (4.4)	0 (0.0)	0 (0.0)	2 (4.4)	1 (2.2)	0 (0.0)	20 (44.4)	45
2021	39 (47.6)	1 (1.2)	0 (0.0)	0 (0.0)	5 (6.1)	4 (4.9)	3 (3.7)	30 (36.6)	82

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2002-2021



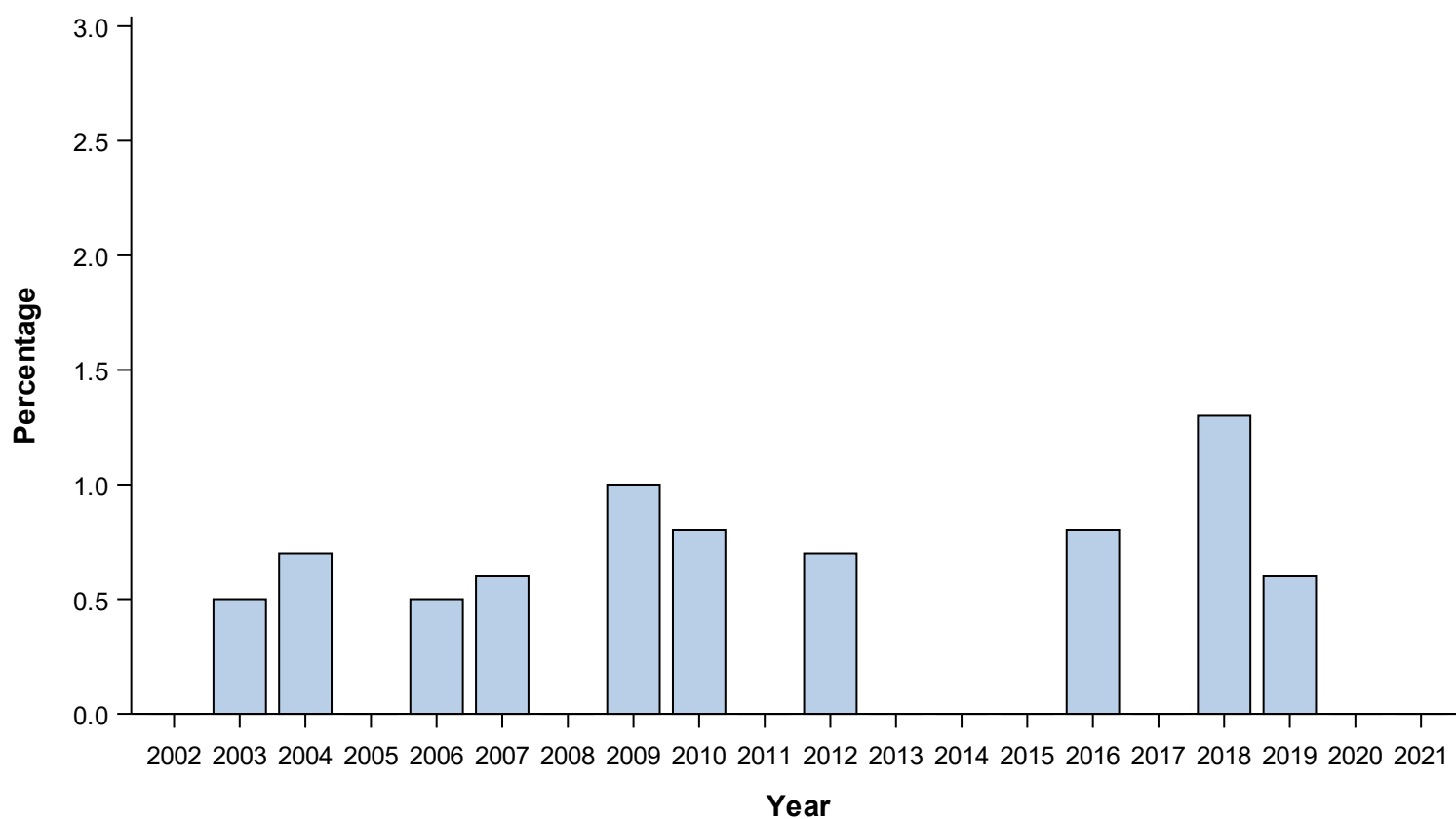
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	1 (0.5)	2 (0.7)	1 (0.5)	1 (0.5)	0 (0.0)	0 (0.0)	3 (1.4)	10 (3.8)	4 (2.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
4 (2.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	0 (0.0)	1 (0.6)	2 (1.3)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 μ g/ml.

Site participated in GISP during 2003-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2002-2021



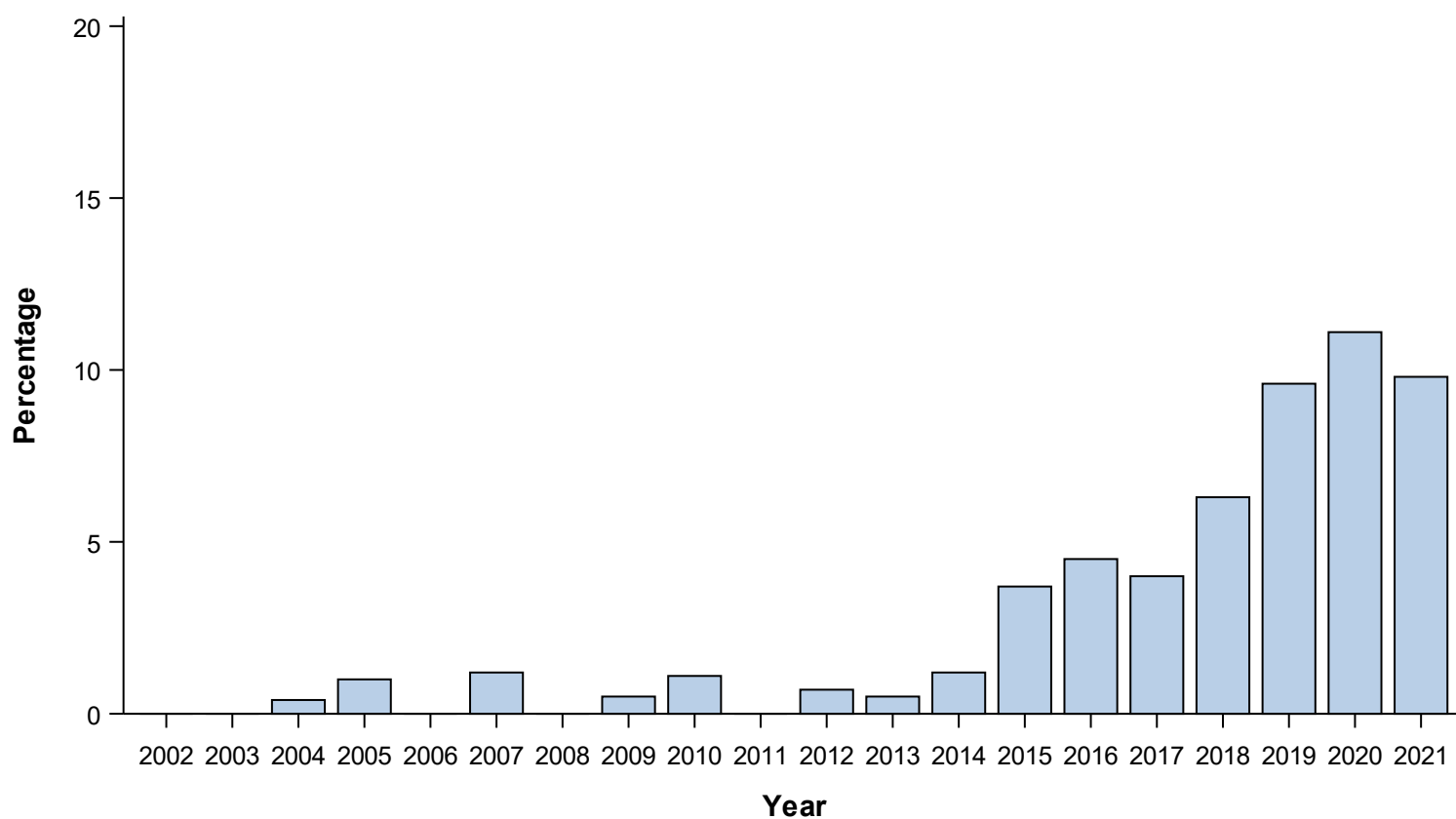
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	1 (0.5)	2 (0.7)	0 (0.0)	1 (0.5)	1 (0.6)	0 (0.0)	2 (1.0)	2 (0.8)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	0 (0.0)	2 (1.3)	1 (0.6)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2003-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Los Angeles, California, 2002-2021



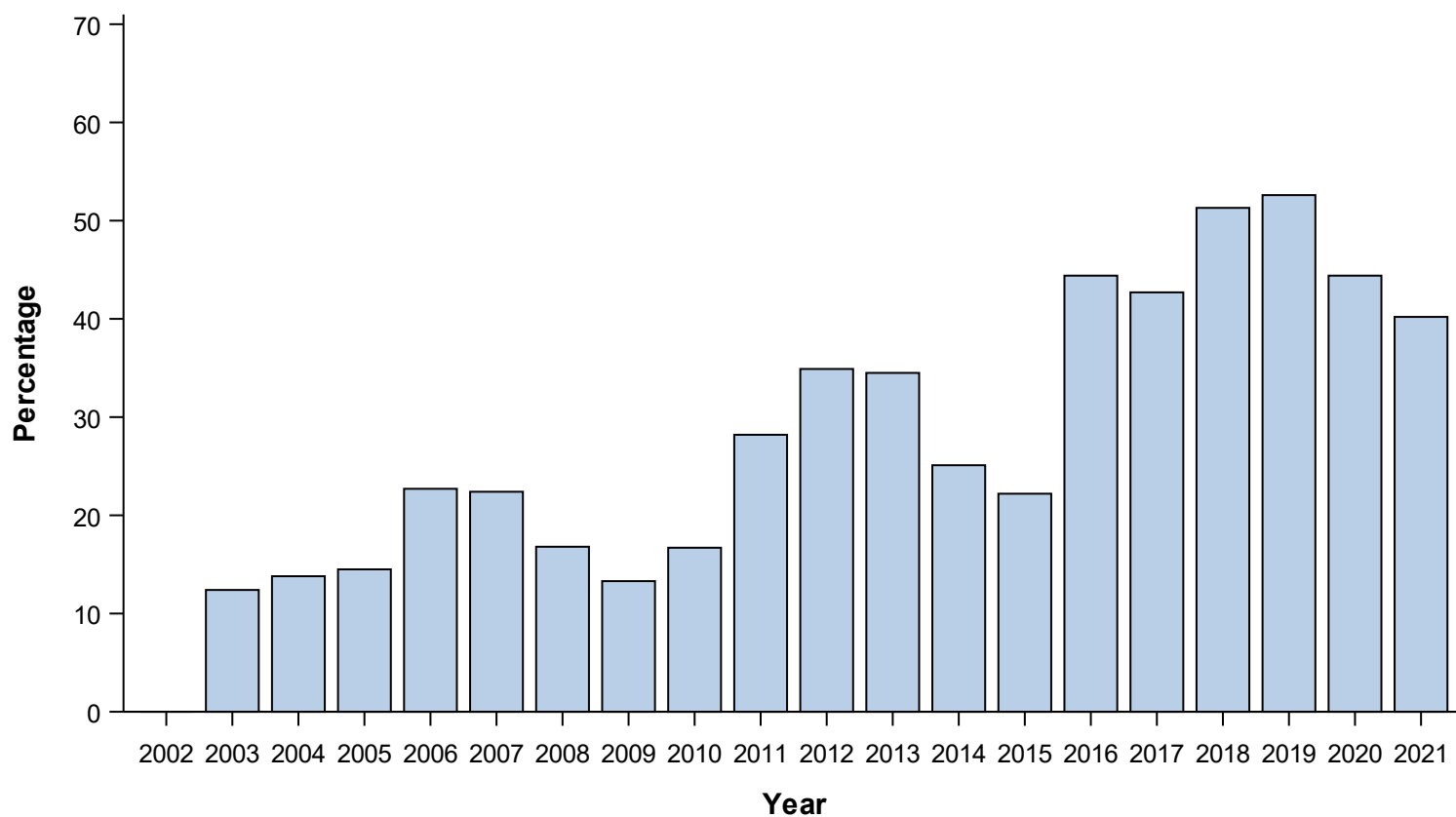
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	1 (0.4)	2 (1.0)	0 (0.0)	2 (1.2)	0 (0.0)	1 (0.5)	3 (1.1)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.7)	1 (0.5)	2 (1.2)	3 (3.7)	6 (4.5)	8 (4.0)	10 (6.3)	15 (9.6)	5 (11.1)	8 (9.8)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2003-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Los Angeles, California, 2002-2021



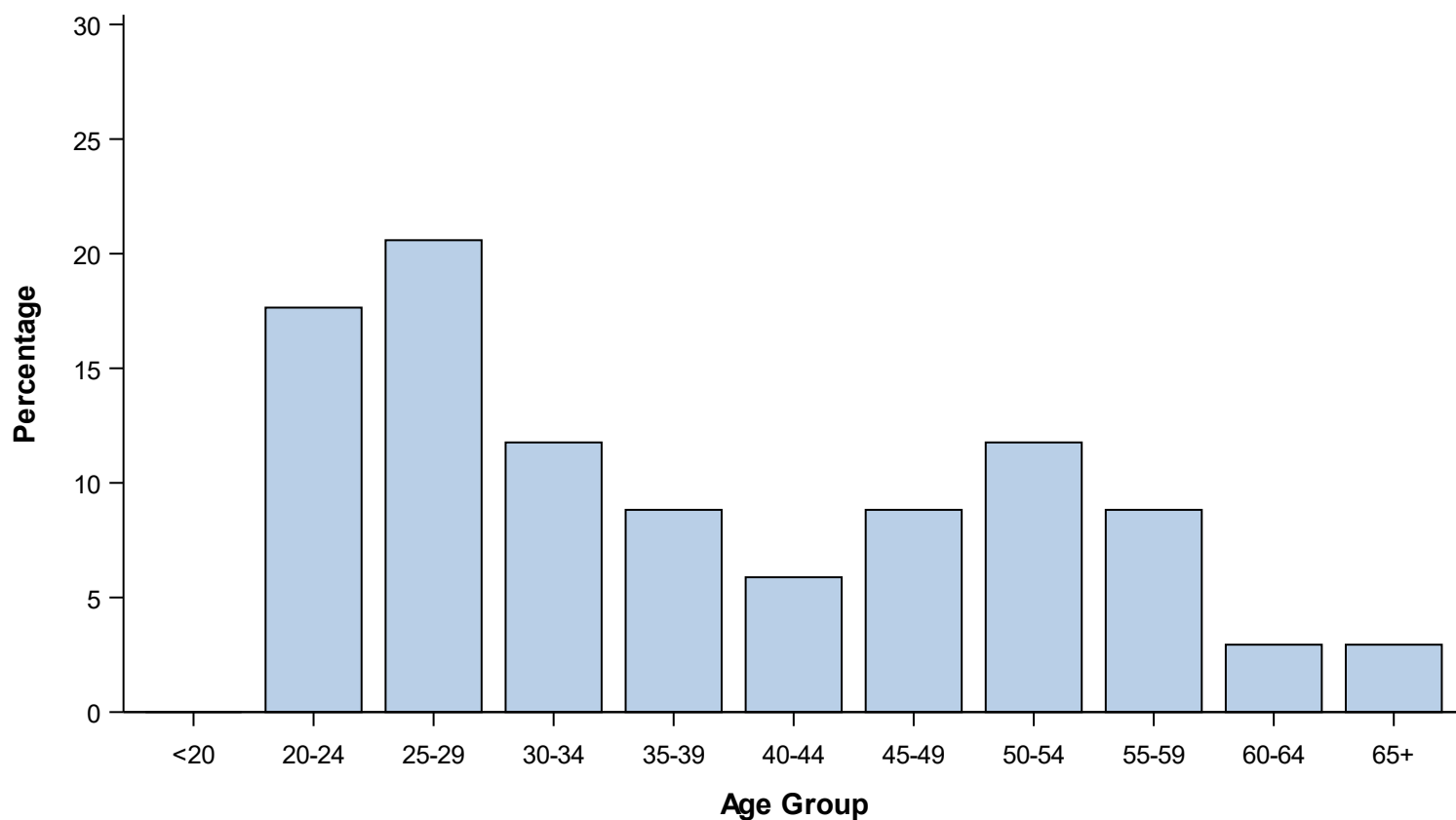
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	25 (12.4)	37 (13.8)	28 (14.5)	47 (22.7)	37 (22.4)	21 (16.8)	28 (13.3)	44 (16.7)	49 (28.2)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
52 (34.9)	67 (34.5)	43 (25.1)	18 (22.2)	59 (44.4)	85 (42.7)	82 (51.3)	82 (52.6)	20 (44.4)	33 (40.2)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2003-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

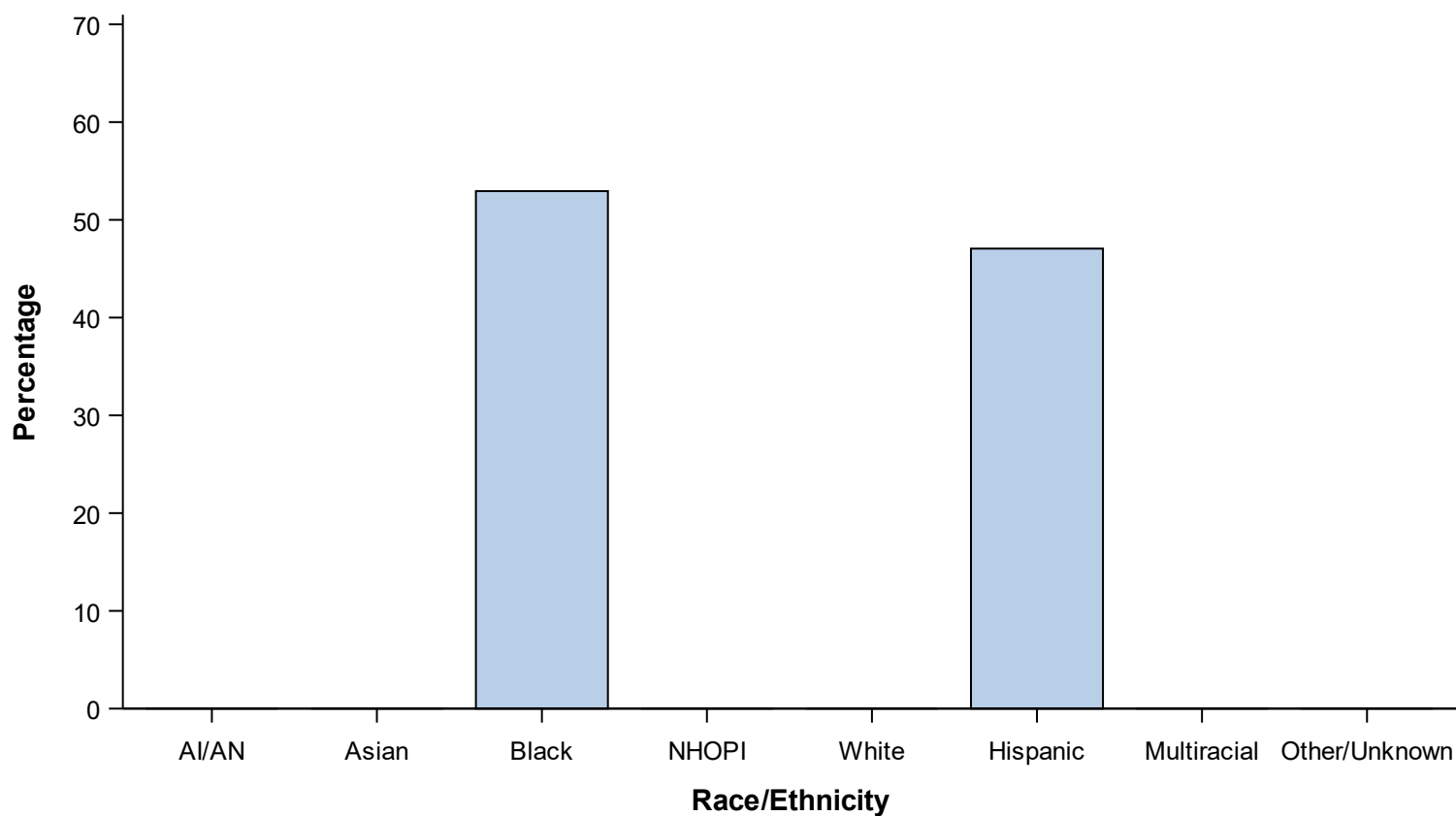
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Miami, Florida, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
0 (0.0)	6 (17.6)	7 (20.6)	4 (11.8)	3 (8.8)	2 (5.9)	3 (8.8)	4 (11.8)	3 (8.8)	1 (2.9)	1 (2.9)	34

Note: Cases with unknown age were excluded.

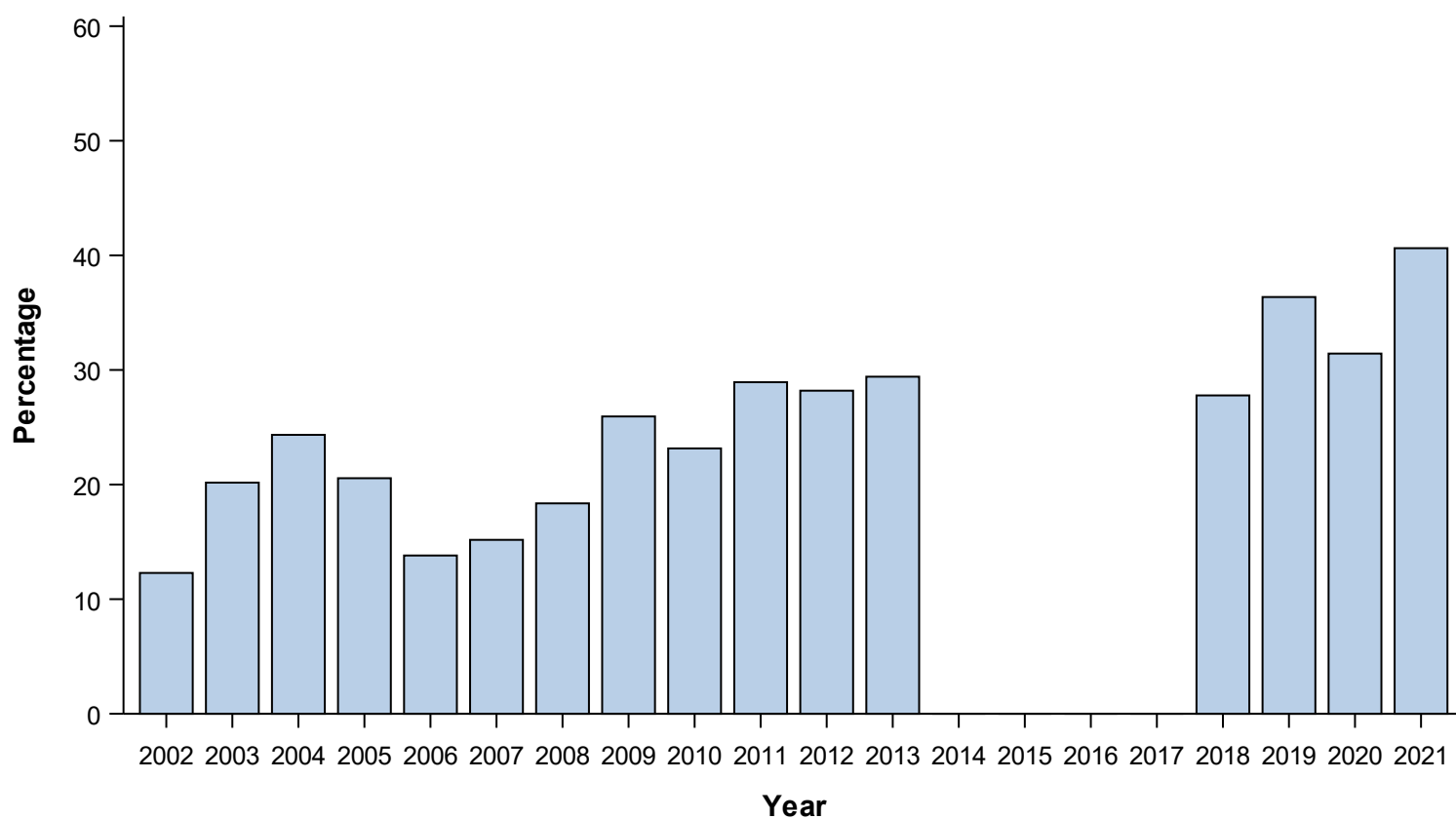
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Miami, Florida, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	18 (52.9)	0 (0.0)	0 (0.0)	16 (47.1)	0 (0.0)	0 (0.0)	34

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Miami, Florida, 2002-2021



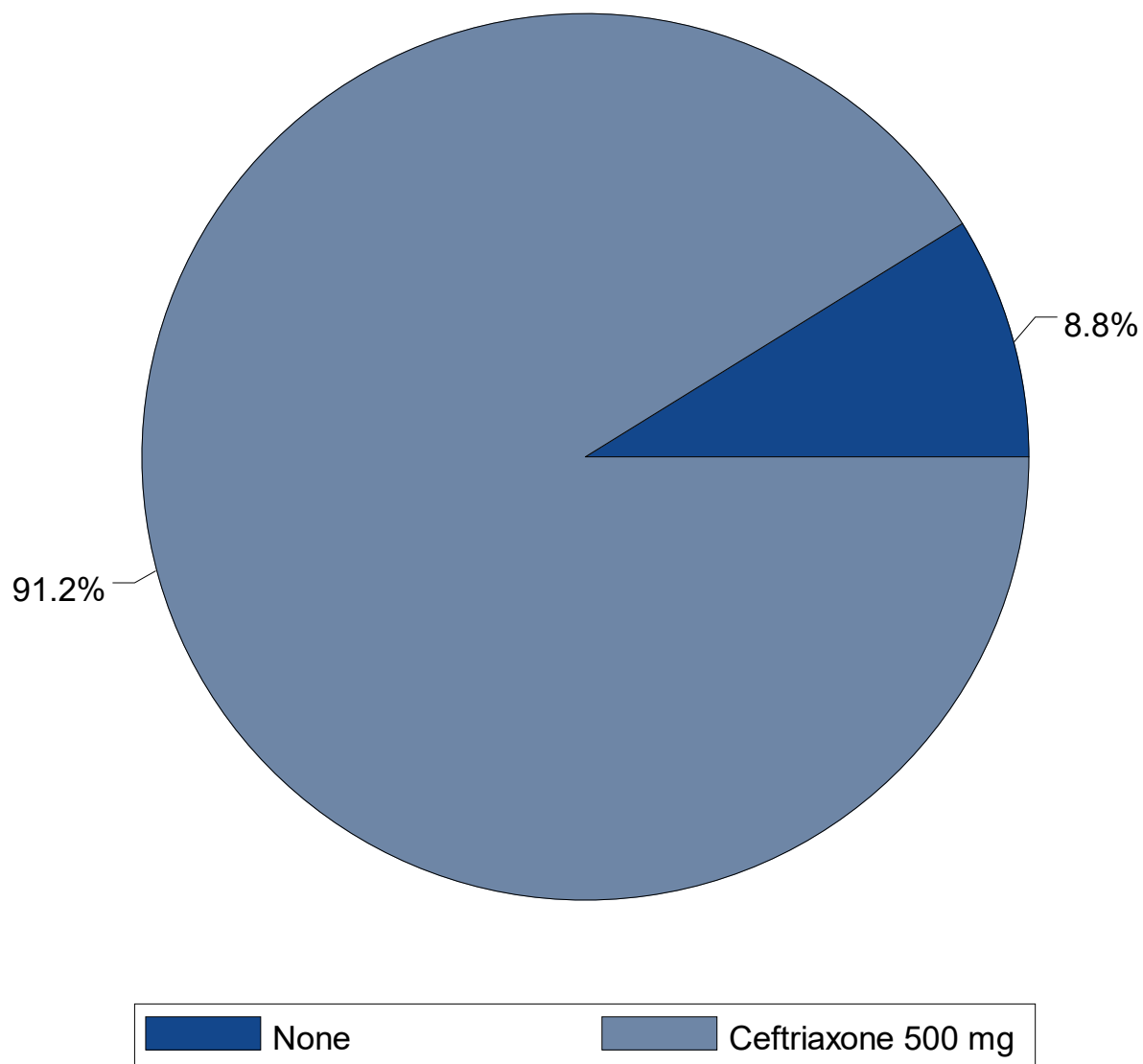
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
29 (12.3)	48 (20.2)	46 (24.3)	52 (20.6)	29 (13.8)	39 (15.2)	47 (18.4)	55 (25.9)	47 (23.2)	46 (28.9)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
53 (28.2)	55 (29.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (27.8)	24 (36.4)	22 (31.4)	13 (40.6)

Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

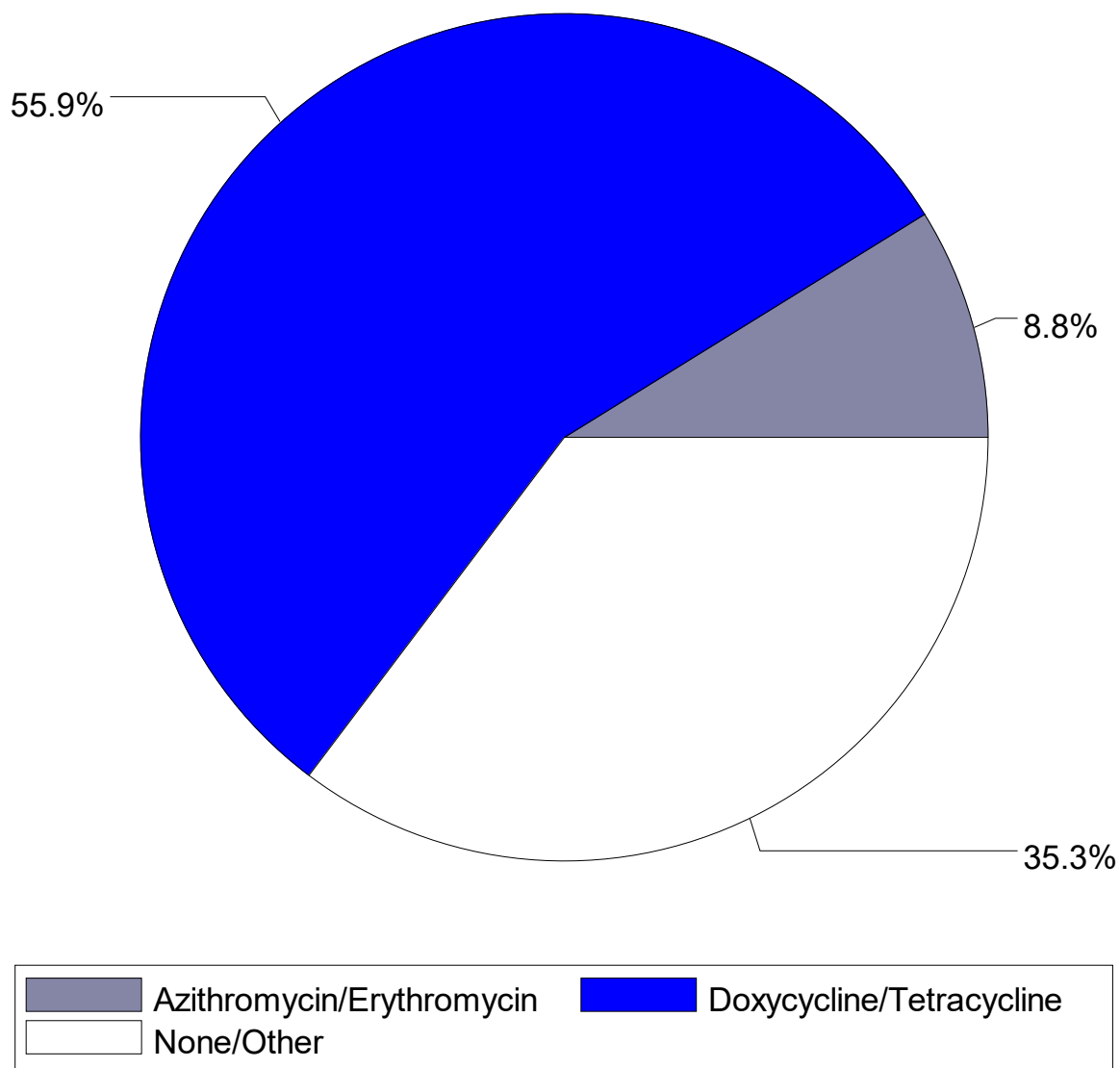
Site participated in GISP during 2002-2013 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Miami, Florida, 2021



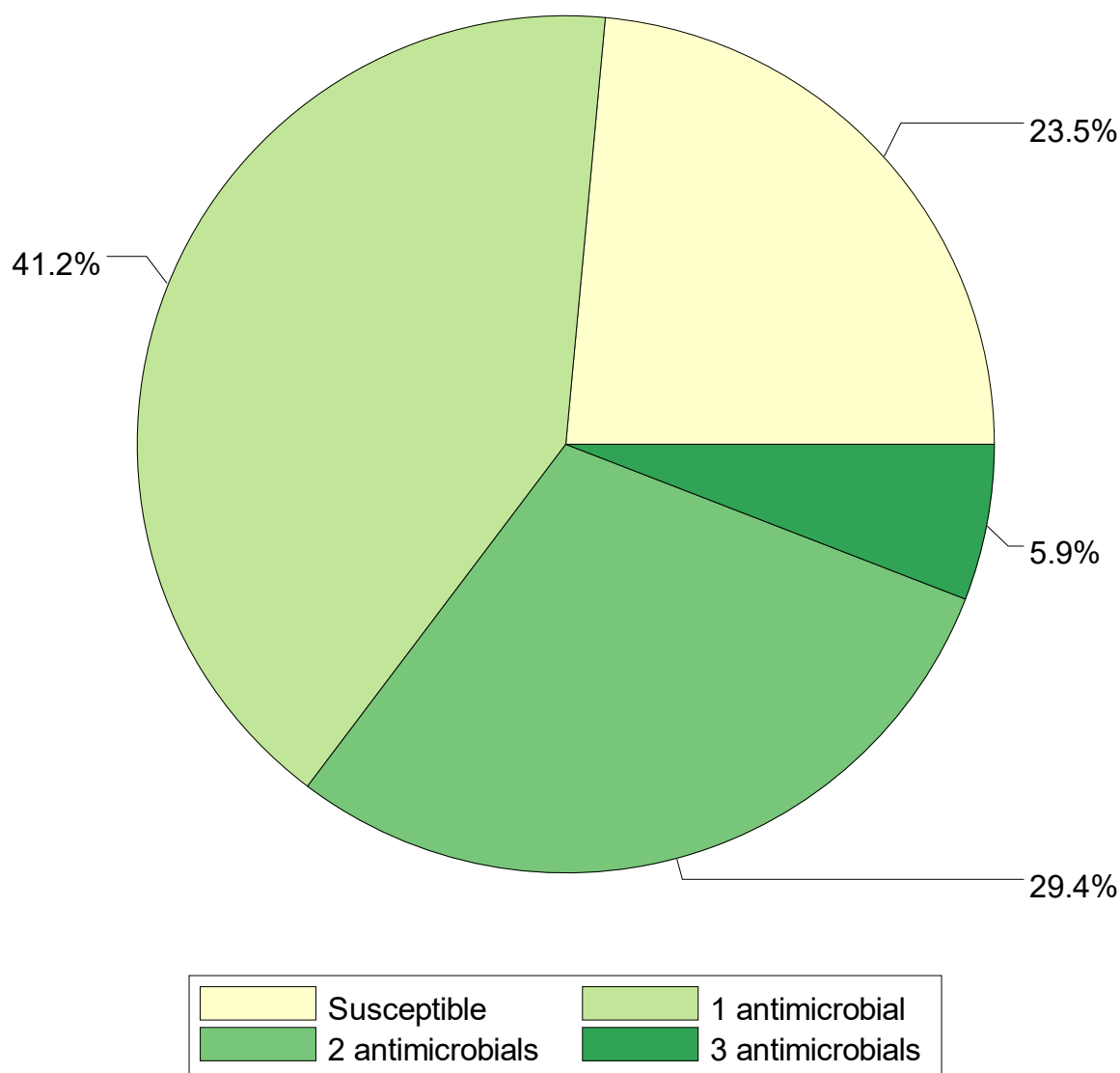
Primary Treatment	Count	Percentage
None	3	8.8
Ceftriaxone 500 mg	31	91.2

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Miami, Florida, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	3	8.8
Doxycycline/Tetracycline	19	55.9
None/Other	12	35.3

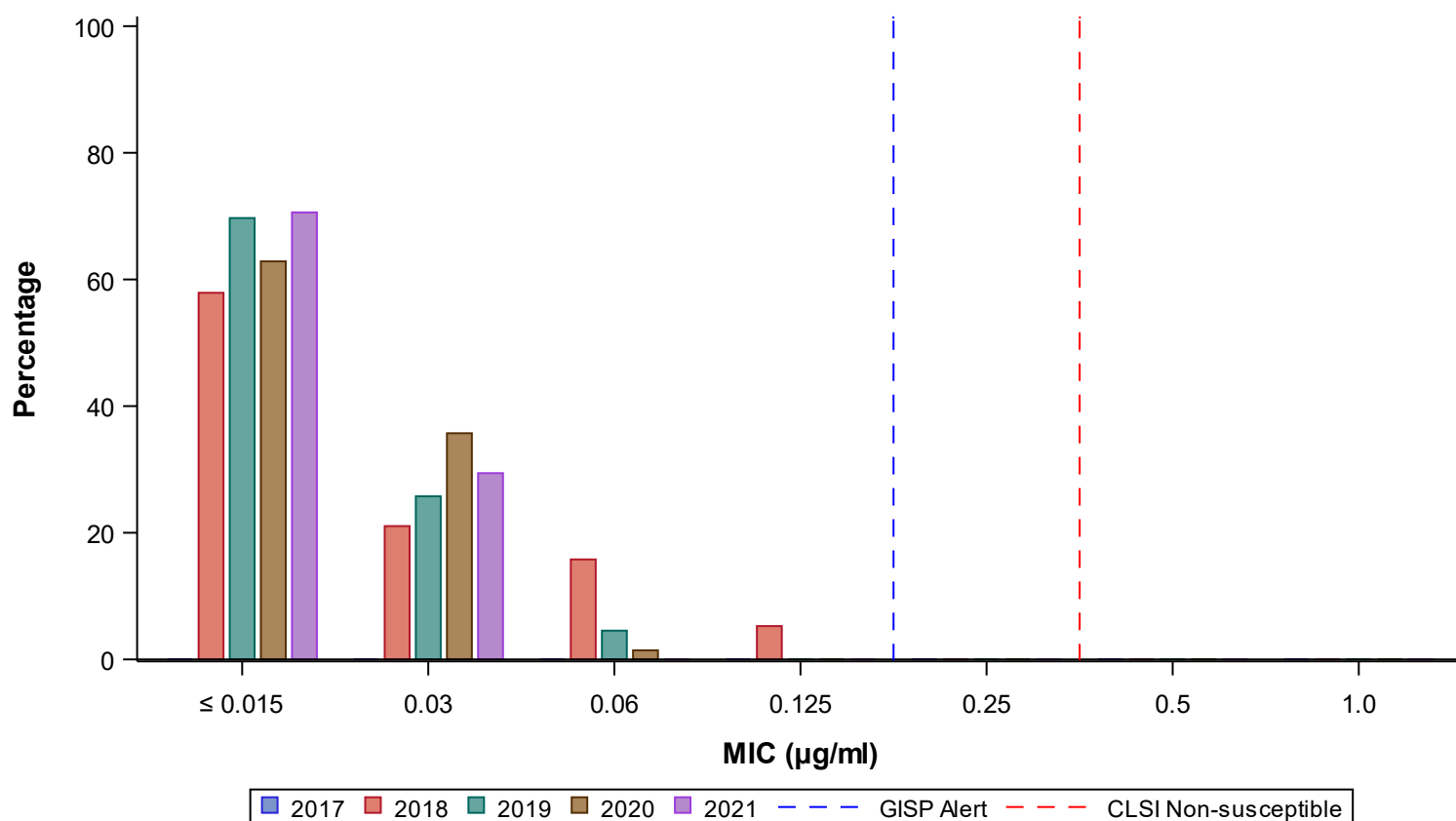
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Miami, Florida, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	8	23.5
1 antimicrobial	14	41.2
2 antimicrobials	10	29.4
3 antimicrobials	2	5.9
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Miami, Florida, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	11 (57.9)	4 (21.1)	3 (15.8)	1 (5.3)	0 (0.0)	0 (0.0)	0 (0.0)	19
2019	46 (69.7)	17 (25.8)	3 (4.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	66
2020	44 (62.9)	25 (35.7)	1 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	70
2021	24 (70.6)	10 (29.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	34

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

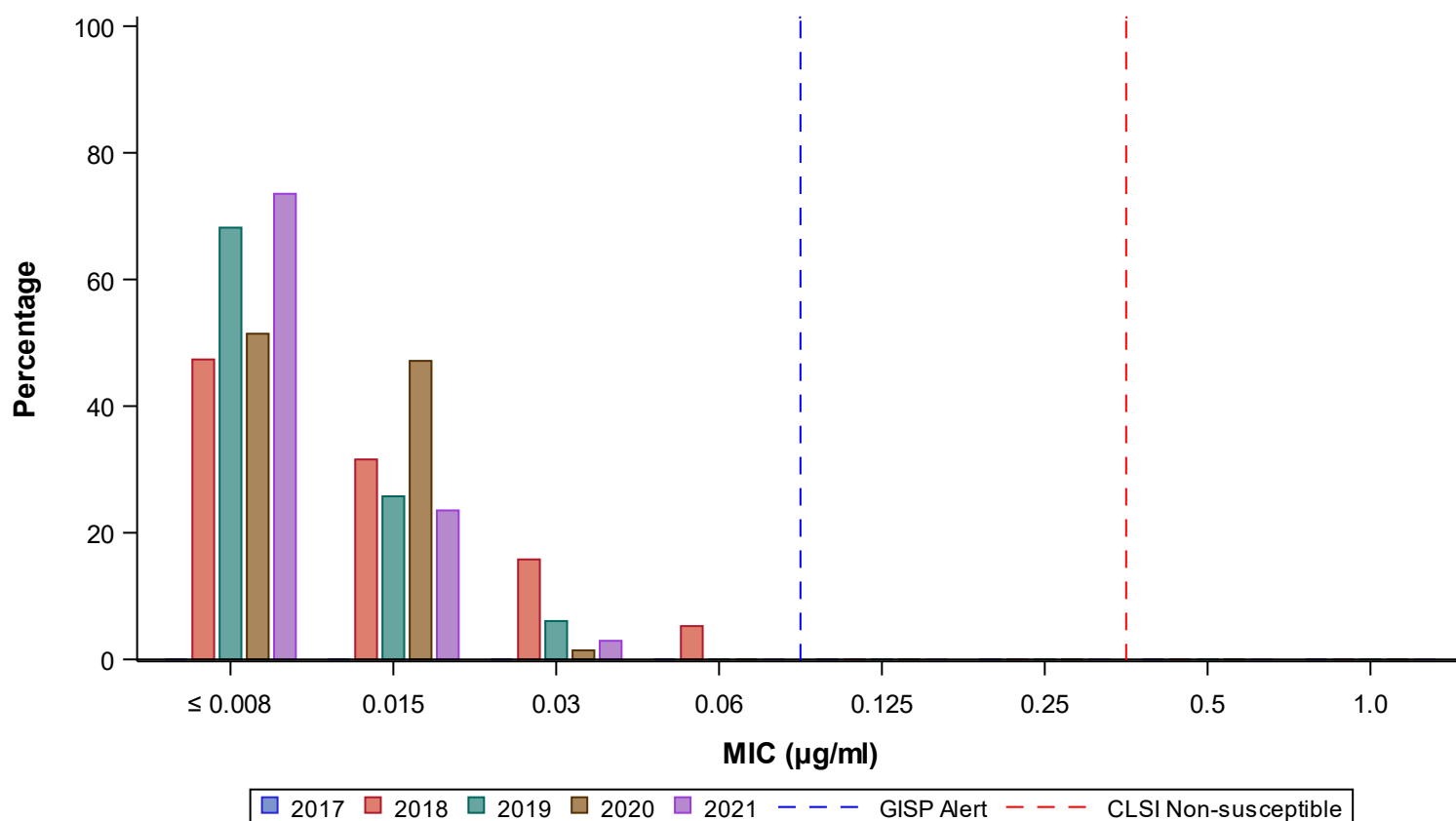
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Miami, Florida, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	9 (47.4)	6 (31.6)	3 (15.8)	1 (5.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	19
2019	45 (68.2)	17 (25.8)	4 (6.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	66
2020	36 (51.4)	33 (47.1)	1 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	70
2021	25 (73.5)	8 (23.5)	1 (2.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	34

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

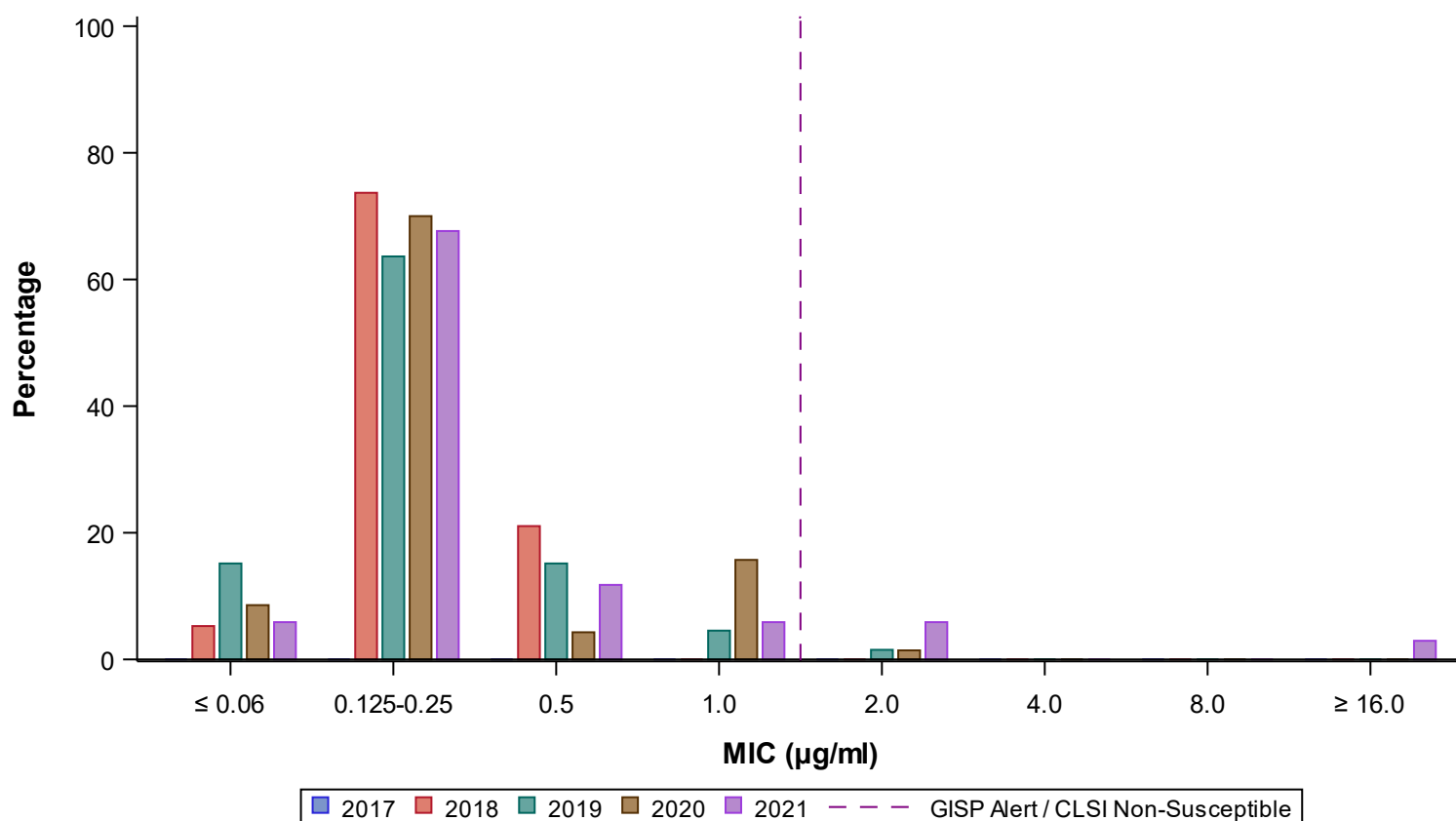
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Miami, Florida, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	1 (5.3)	14 (73.7)	4 (21.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	19
2019	10 (15.2)	42 (63.6)	10 (15.2)	3 (4.5)	1 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	66
2020	6 (8.6)	49 (70.0)	3 (4.3)	11 (15.7)	1 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	70
2021	2 (5.9)	23 (67.6)	4 (11.8)	2 (5.9)	2 (5.9)	0 (0.0)	0 (0.0)	1 (2.9)	34

GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

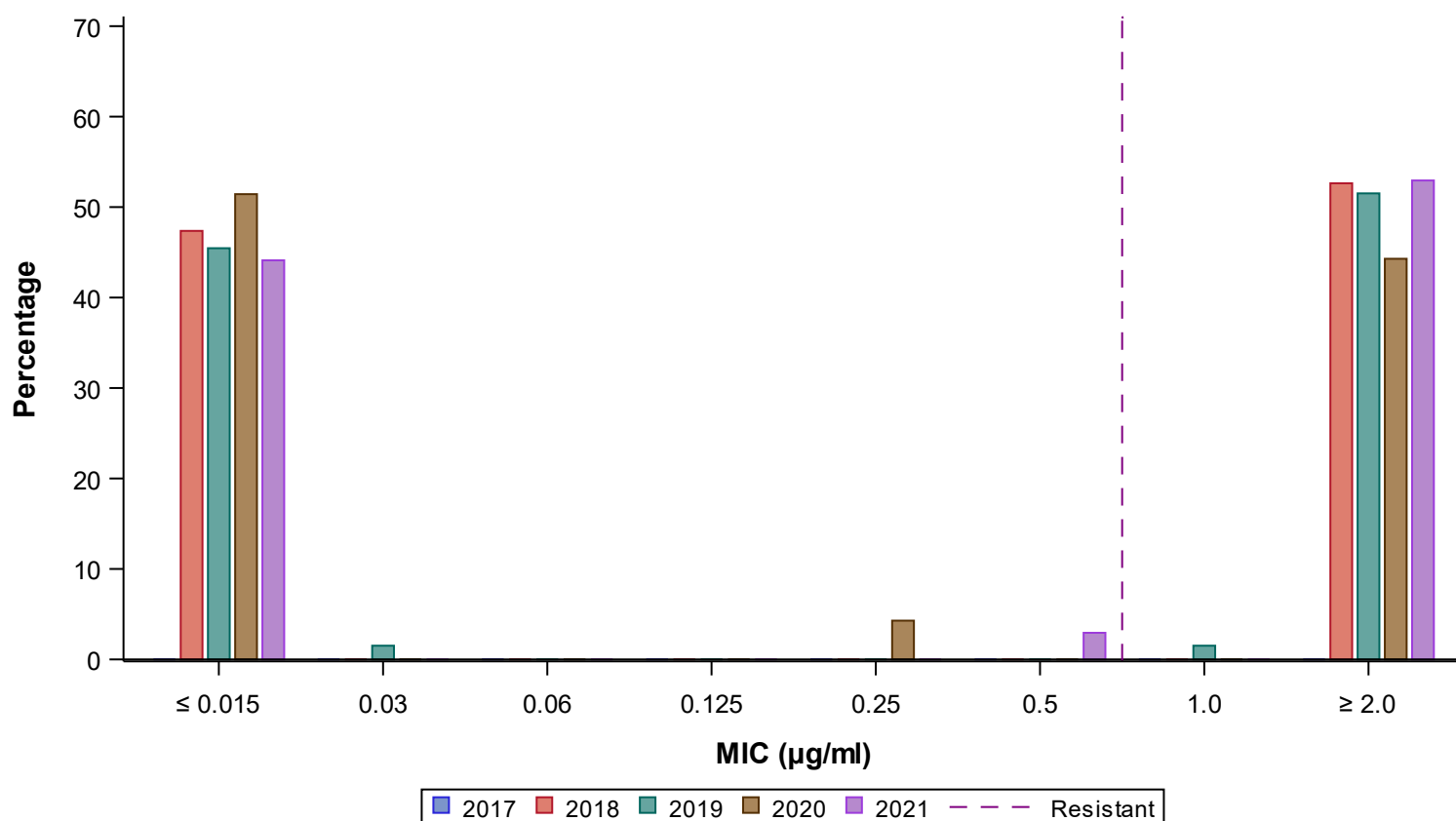
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Miami, Florida, 2017-2021

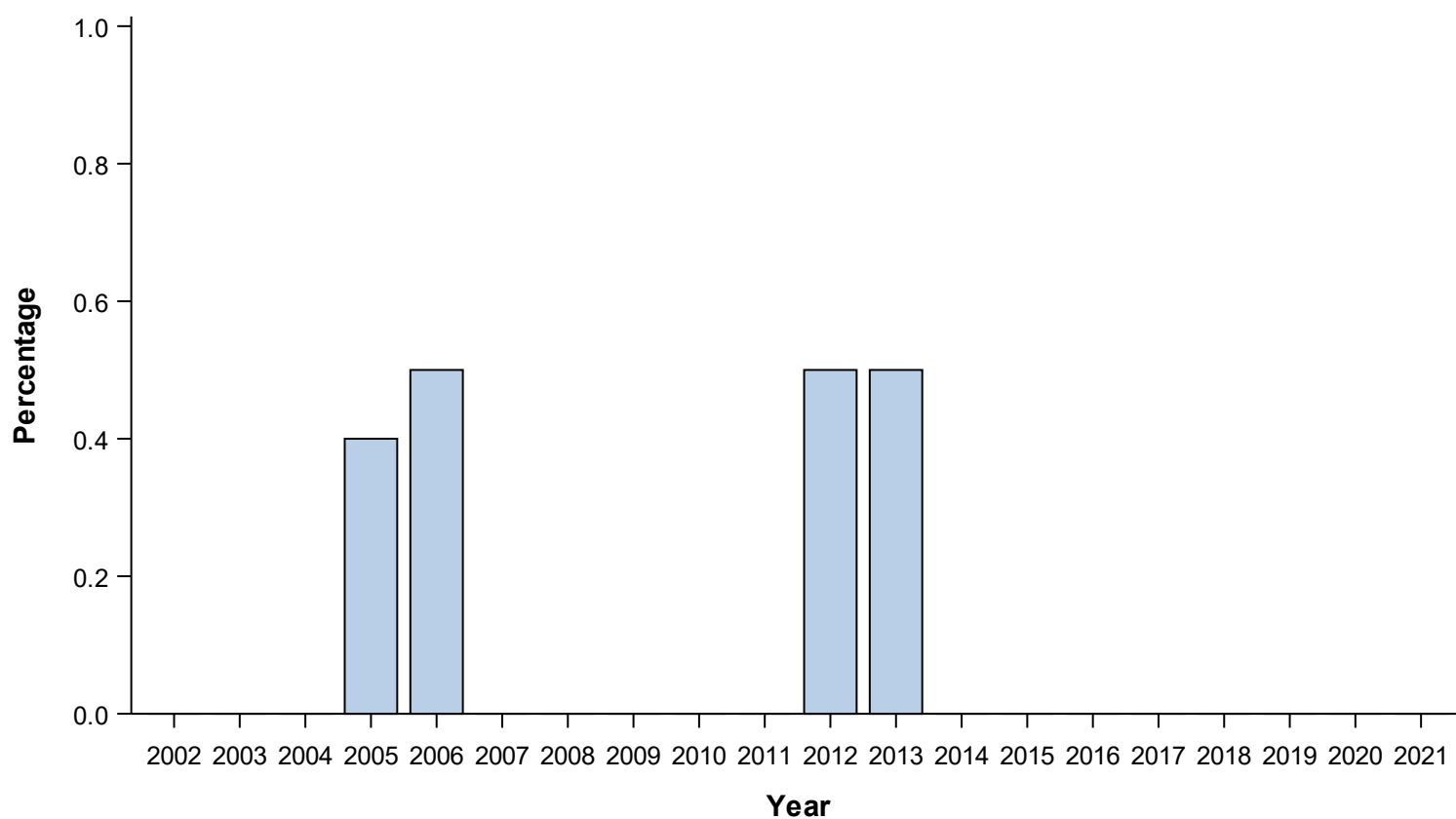


Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	9 (47.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	10 (52.6)	19
2019	30 (45.5)	1 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.5)	34 (51.5)	66
2020	36 (51.4)	0 (0.0)	0 (0.0)	0 (0.0)	3 (4.3)	0 (0.0)	0 (0.0)	31 (44.3)	70
2021	15 (44.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (2.9)	0 (0.0)	18 (52.9)	34

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Miami, Florida, 2002-2021



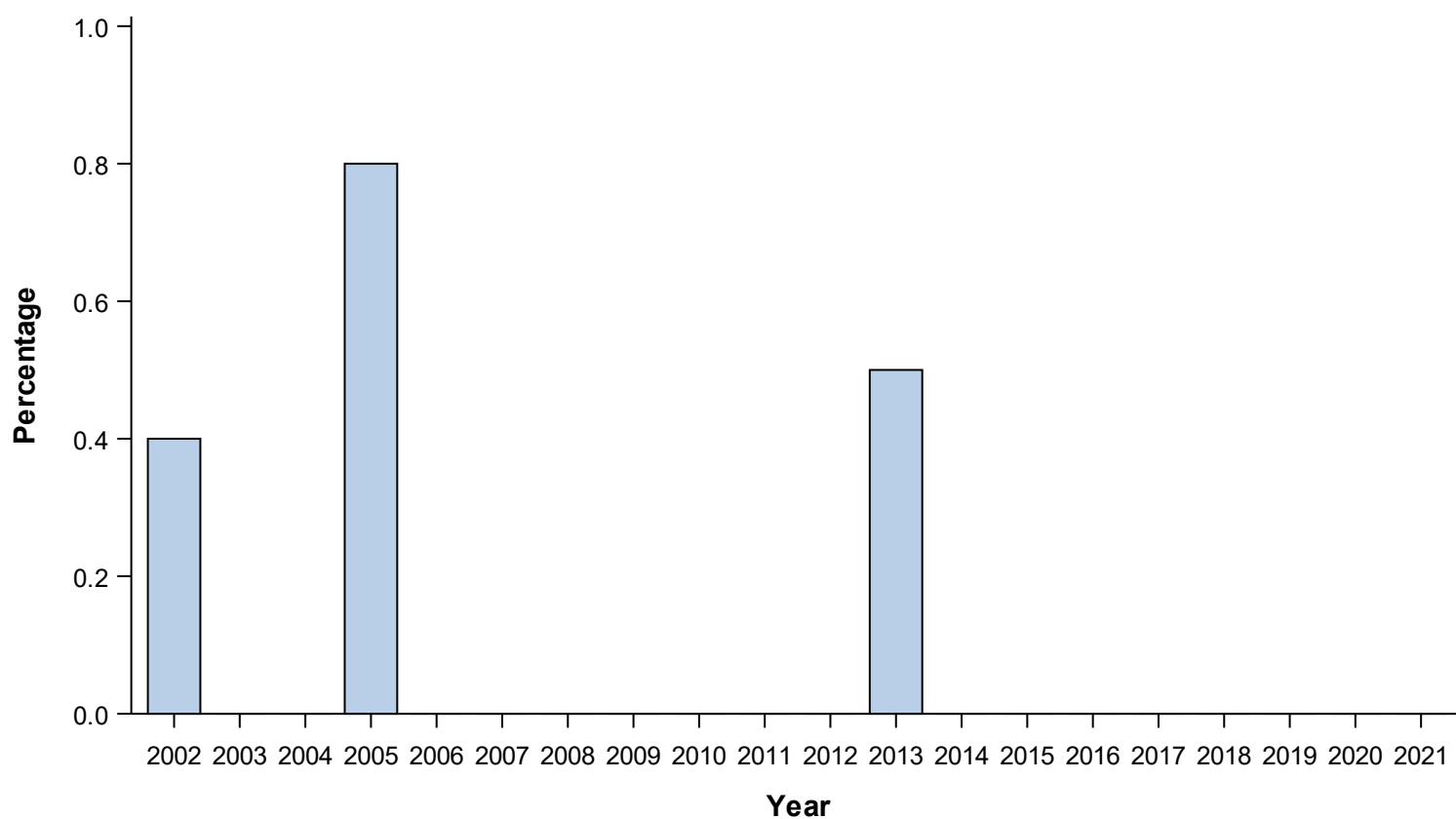
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.5)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2002-2013 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Miami, Florida, 2002-2021



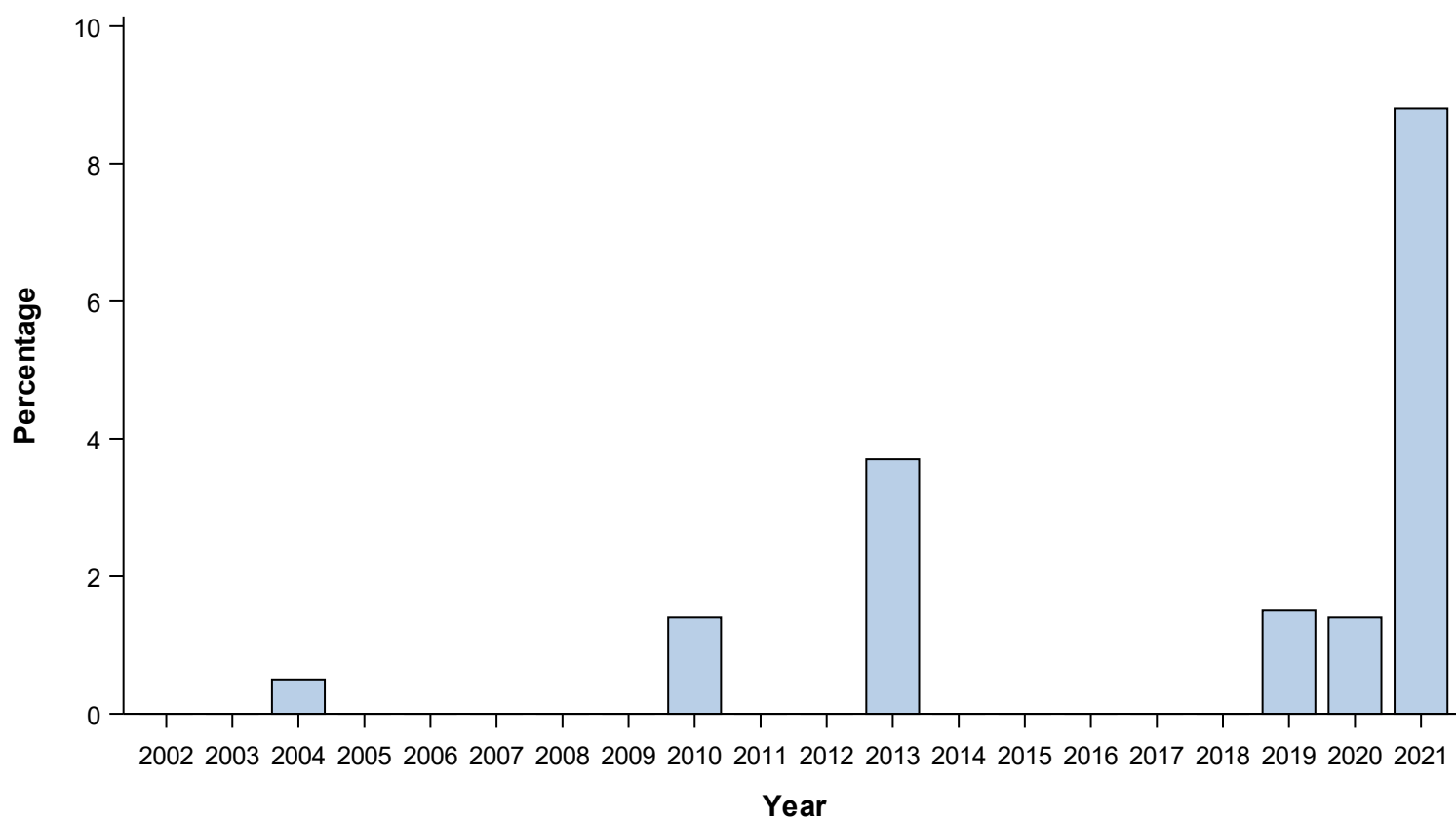
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (0.4)	0 (0.0)	0 (0.0)	2 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2002-2013 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Miami, Florida, 2002-2021



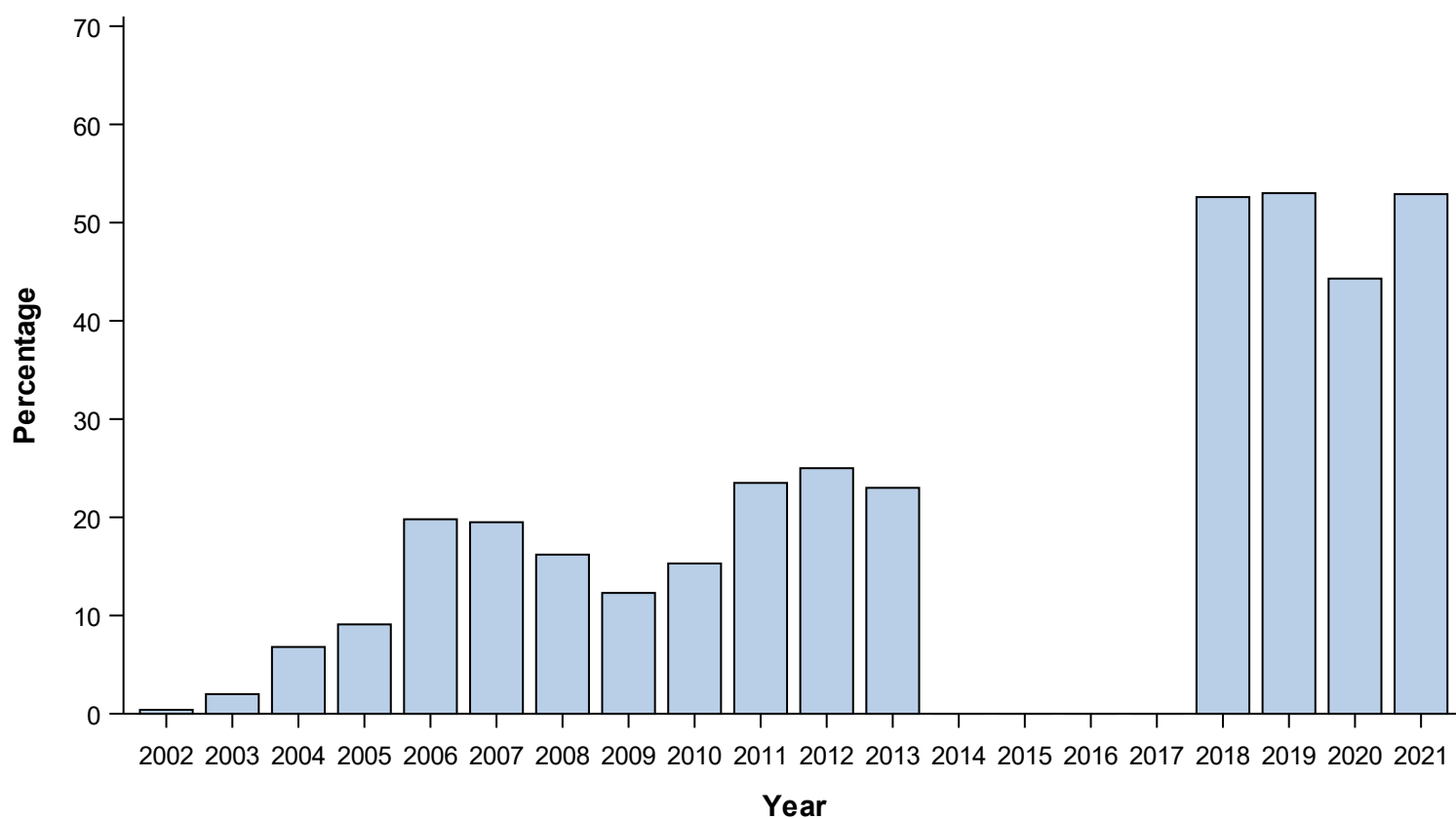
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (1.4)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	7 (3.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.5)	1 (1.4)	3 (8.8)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2002-2013 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Miami, Florida, 2002-2021



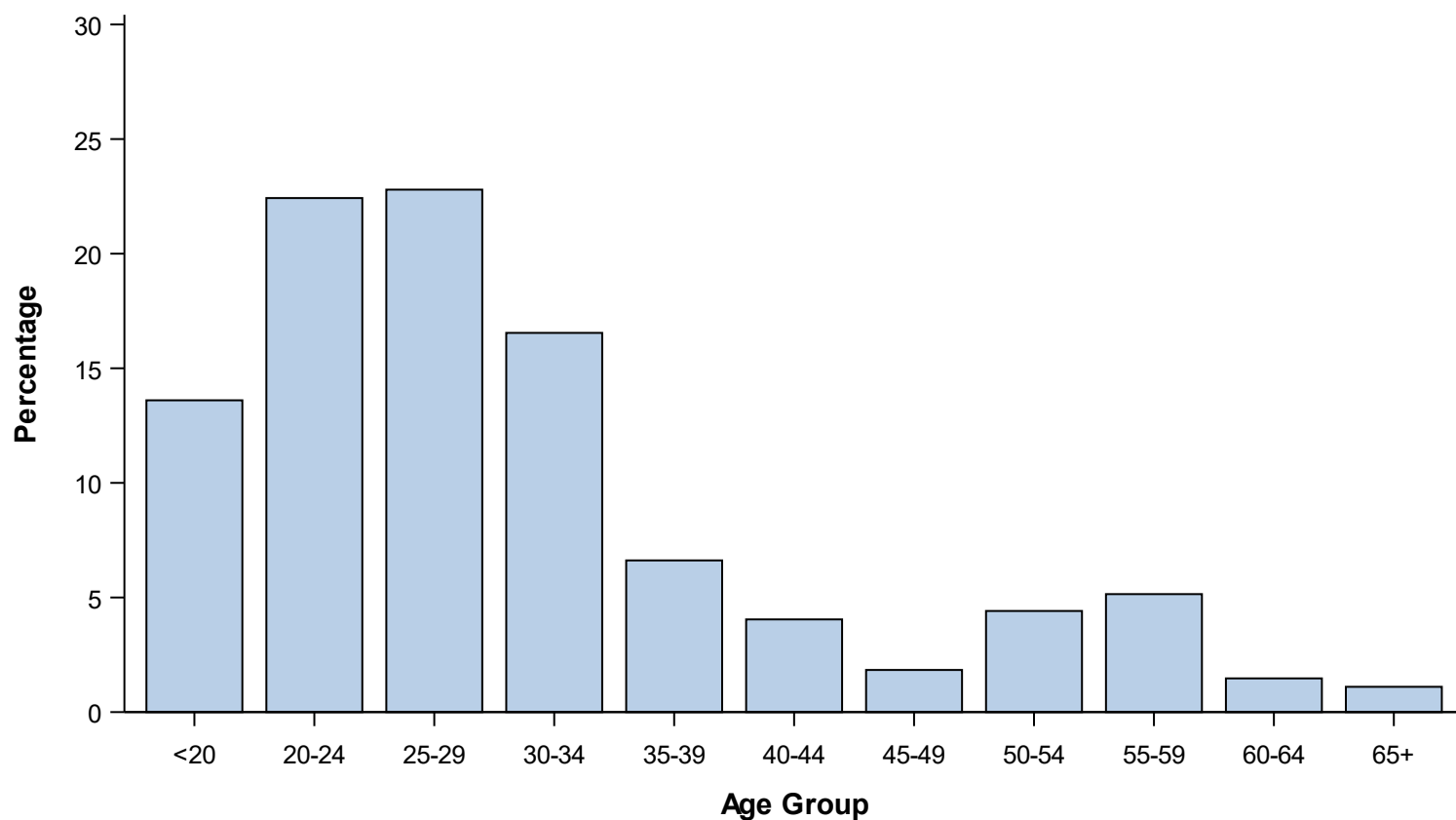
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (0.4)	5 (2.0)	13 (6.8)	24 (9.1)	42 (19.8)	52 (19.5)	42 (16.2)	27 (12.3)	32 (15.3)	38 (23.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
47 (25.0)	43 (23.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	10 (52.6)	35 (53.0)	31 (44.3)	18 (52.9)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2002-2013 and 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

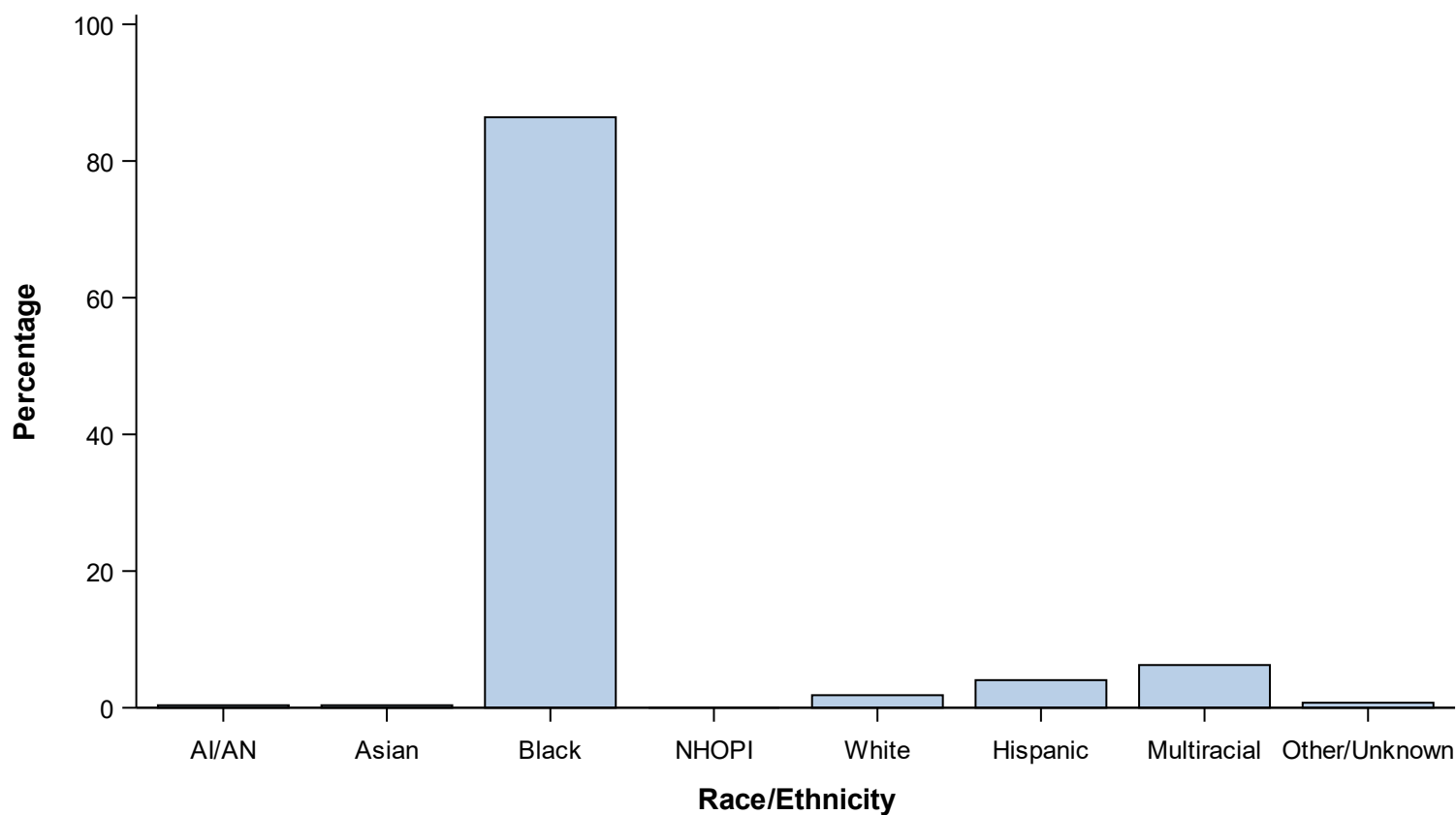
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
37 (13.6)	61 (22.4)	62 (22.8)	45 (16.5)	18 (6.6)	11 (4.0)	5 (1.8)	12 (4.4)	14 (5.1)	4 (1.5)	3 (1.1)	272

Note: Cases with unknown age were excluded.

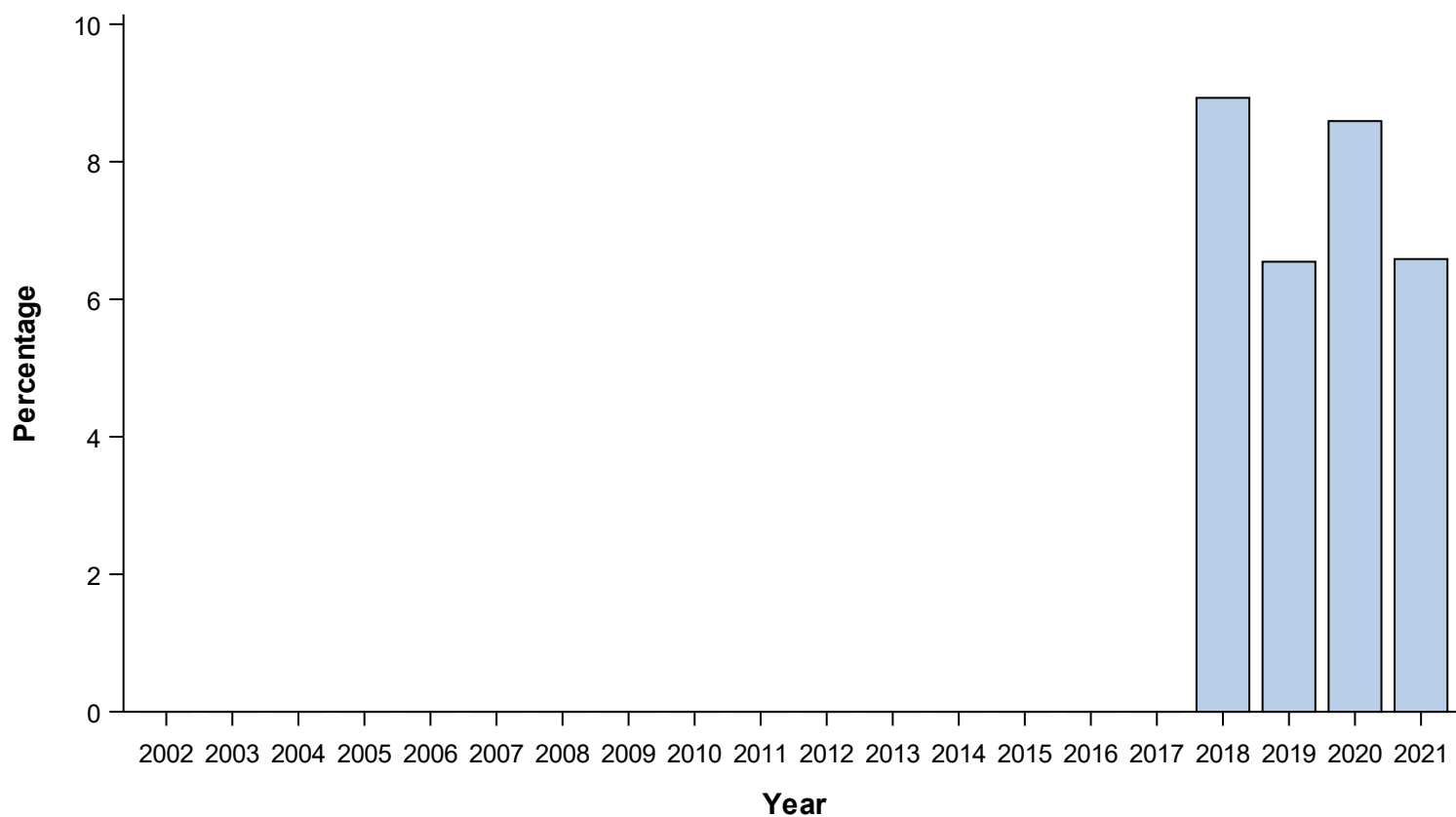
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
1 (0.4)	1 (0.4)	235 (86.4)	0 (0.0)	5 (1.8)	11 (4.0)	17 (6.3)	2 (0.7)	272

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Milwaukee, Wisconsin, 2002-2021



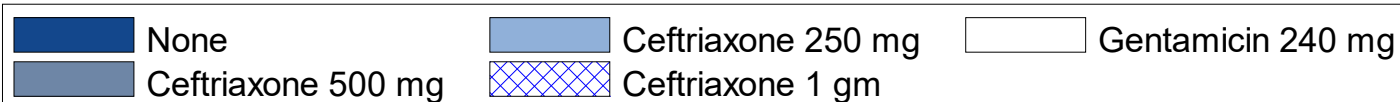
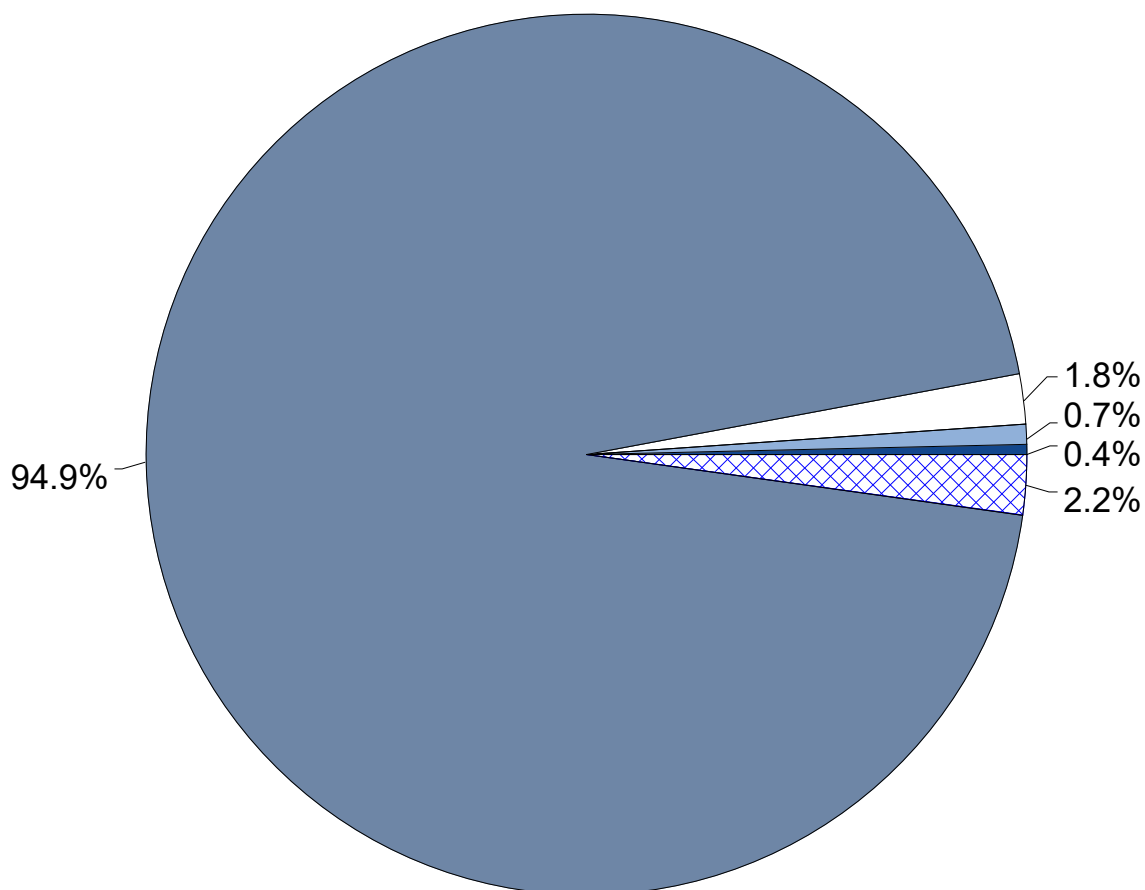
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (8.9)	18 (6.5)	25 (8.6)	16 (6.6)

Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

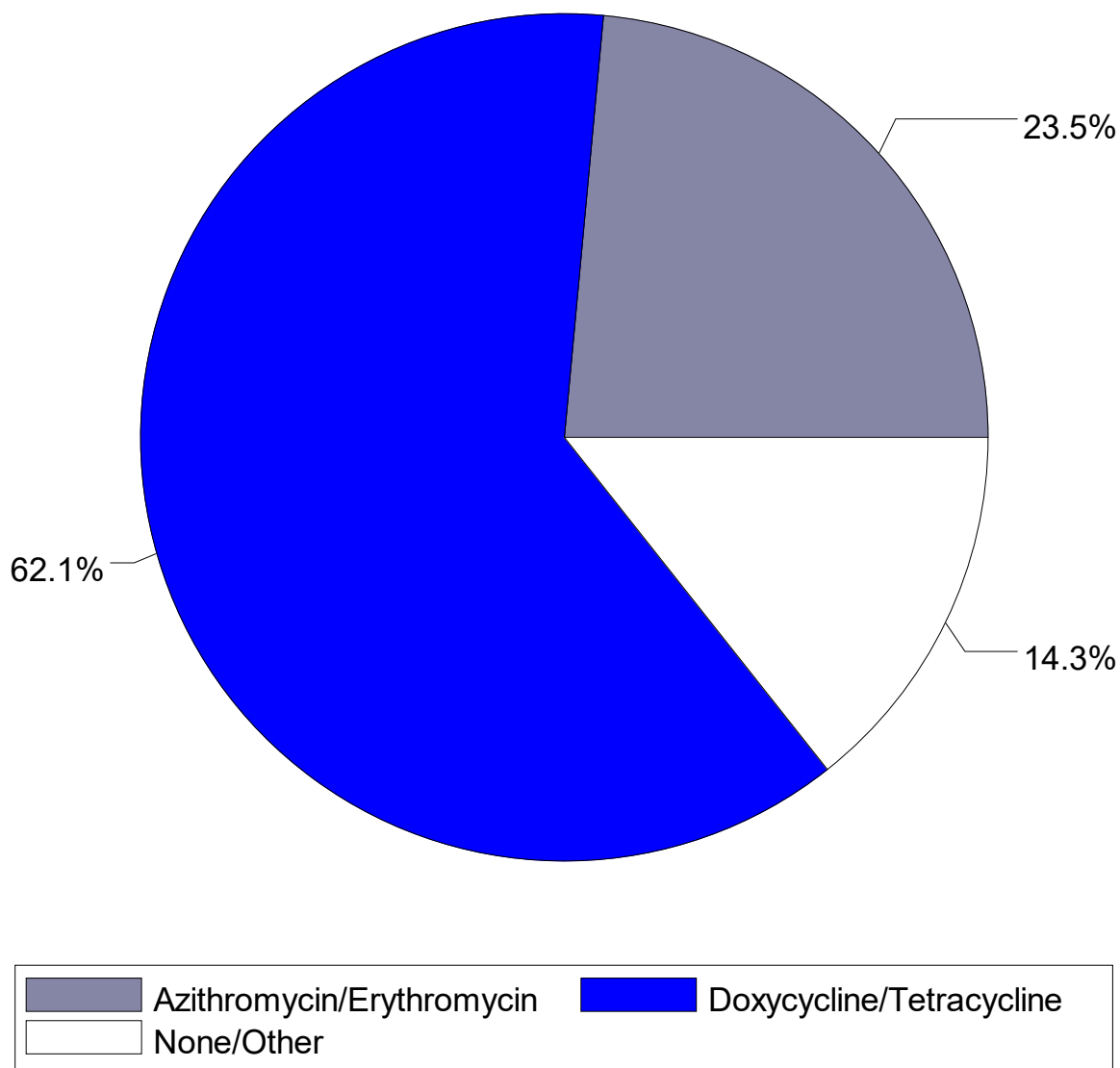
Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2021



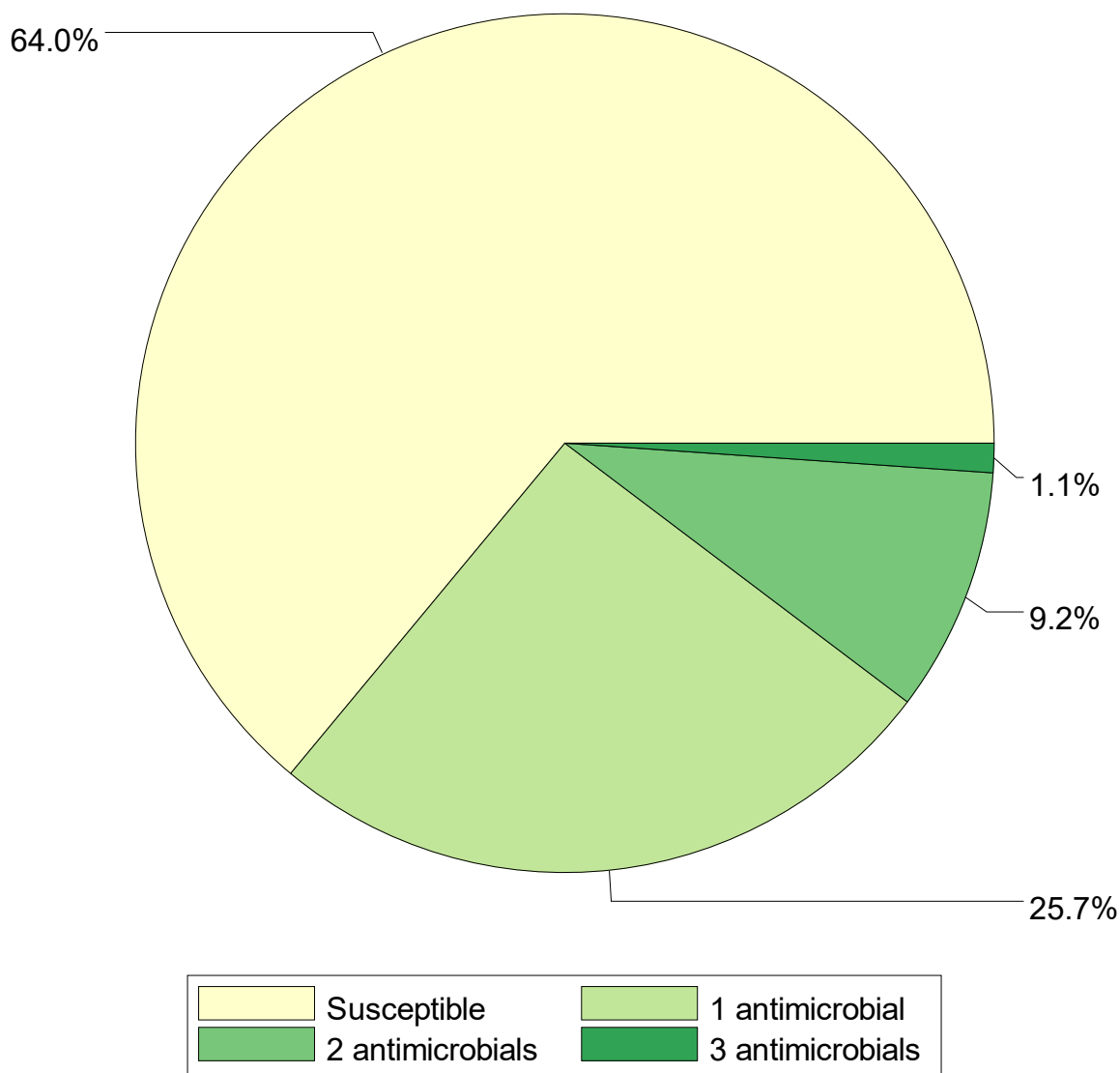
Primary Treatment	Count	Percentage
None	1	0.4
Ceftriaxone 250 mg	2	0.7
Gentamicin 240 mg	5	1.8
Ceftriaxone 500 mg	258	94.9
Ceftriaxone 1 gm	6	2.2

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Milwaukee, Wisconsin, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	64	23.5
Doxycycline/Tetracycline	169	62.1
None/Other	39	14.3

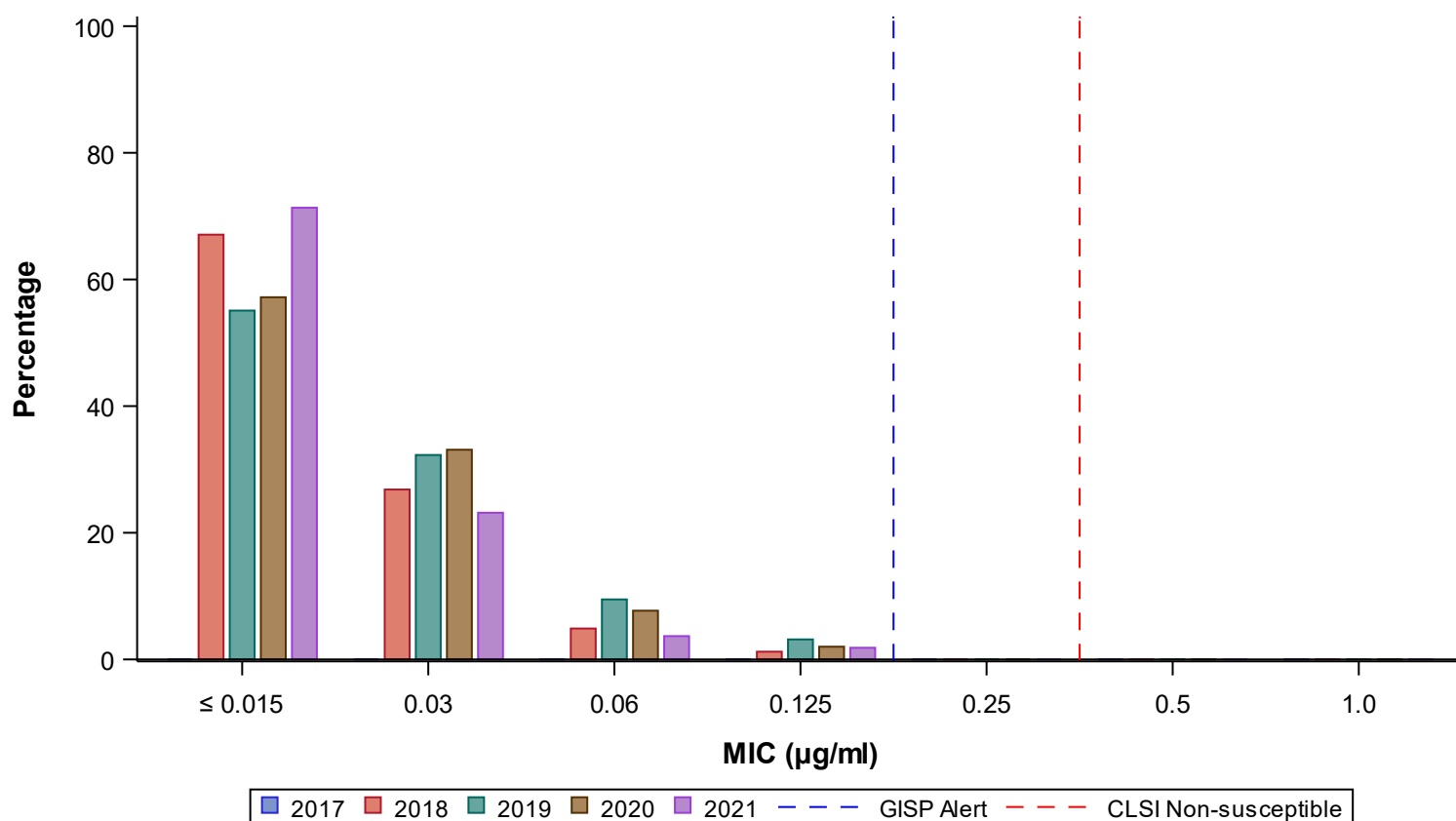
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	174	64.0
1 antimicrobial	70	25.7
2 antimicrobials	25	9.2
3 antimicrobials	3	1.1
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	55 (67.1)	22 (26.8)	4 (4.9)	1 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	82
2019	157 (55.1)	92 (32.3)	27 (9.5)	9 (3.2)	0 (0.0)	0 (0.0)	0 (0.0)	285
2020	171 (57.2)	99 (33.1)	23 (7.7)	6 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	299
2021	194 (71.3)	63 (23.2)	10 (3.7)	5 (1.8)	0 (0.0)	0 (0.0)	0 (0.0)	272

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

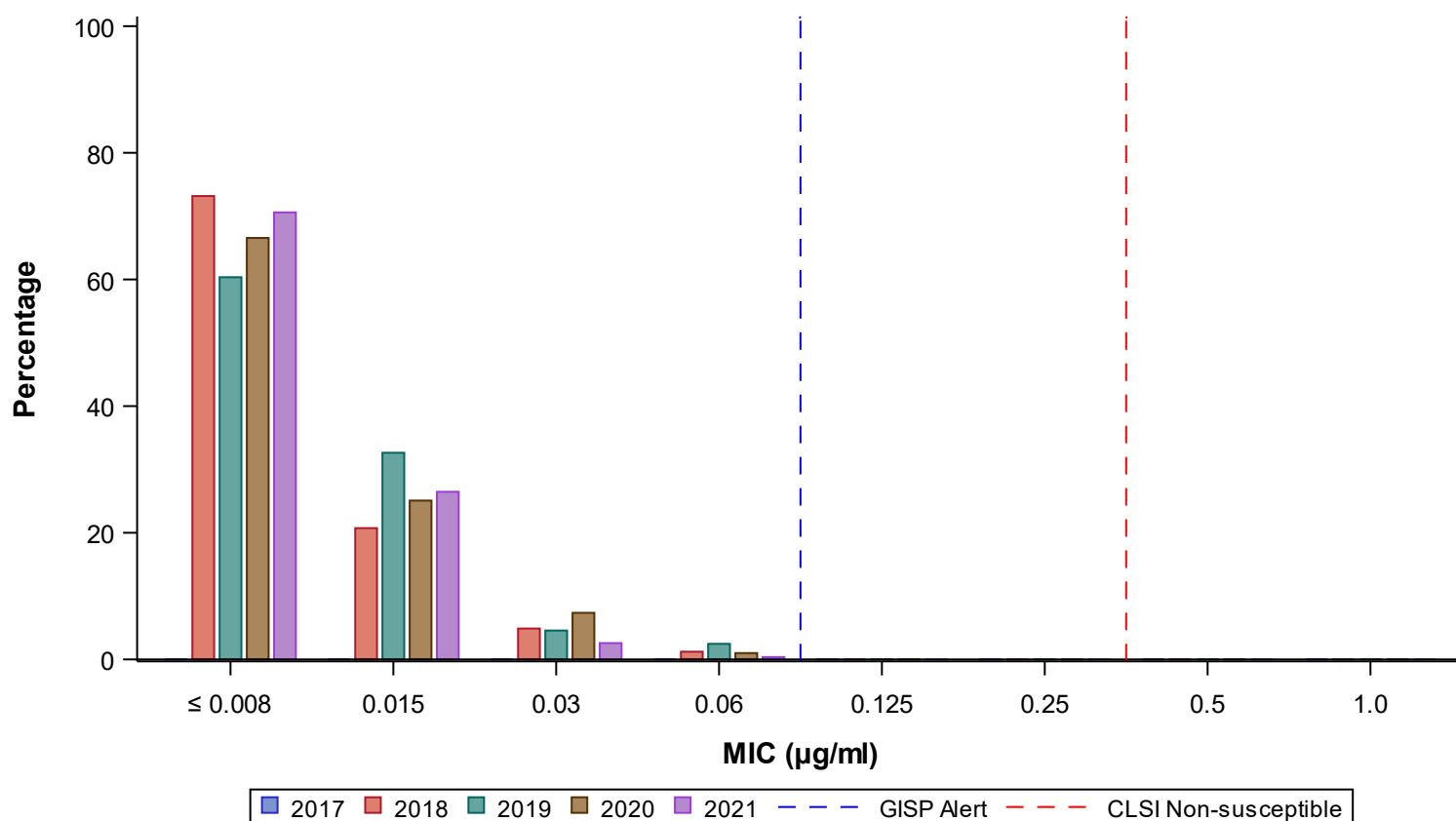
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	60 (73.2)	17 (20.7)	4 (4.9)	1 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	82
2019	172 (60.4)	93 (32.6)	13 (4.6)	7 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	285
2020	199 (66.6)	75 (25.1)	22 (7.4)	3 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	299
2021	192 (70.6)	72 (26.5)	7 (2.6)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	272

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

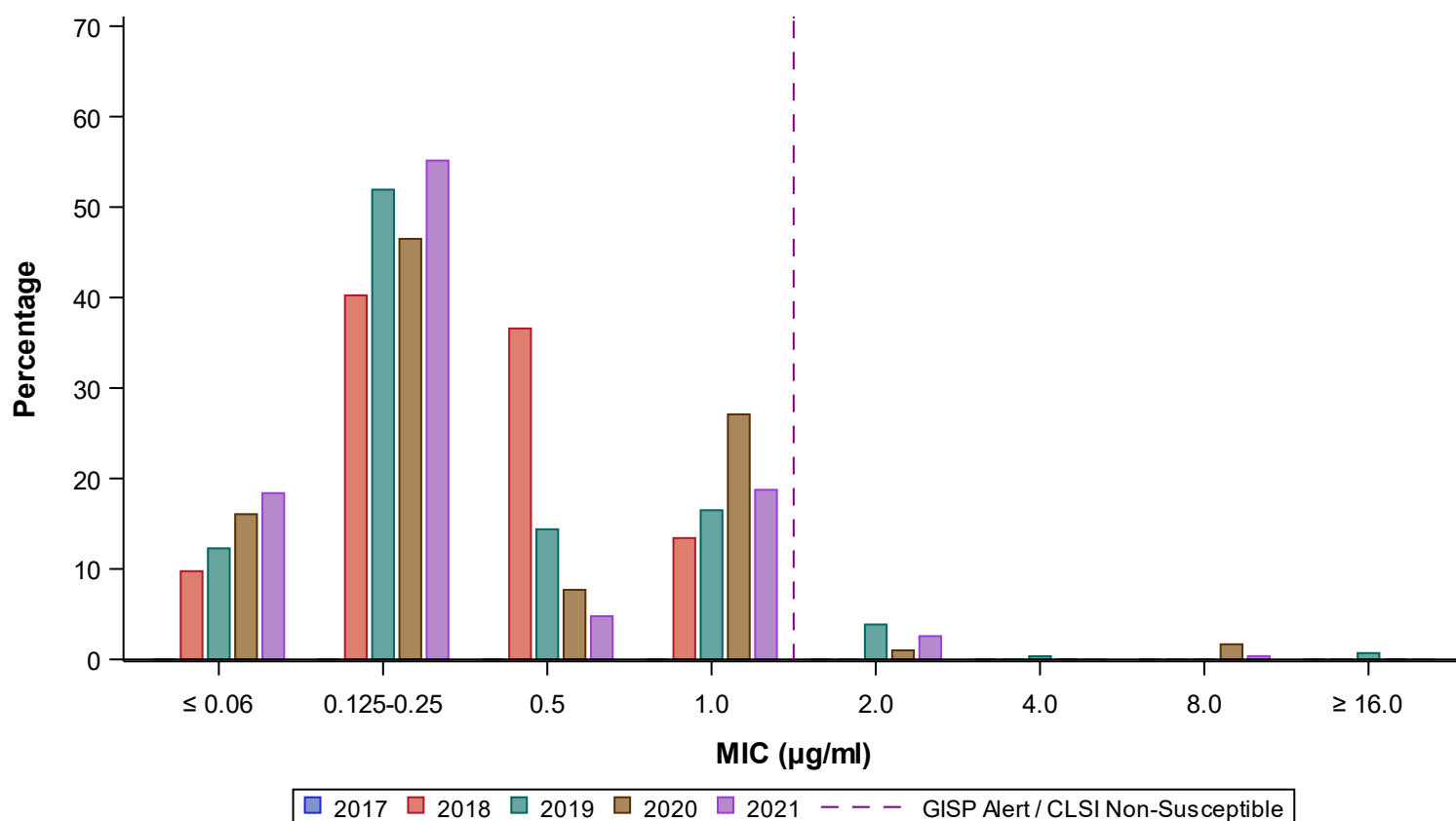
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	8 (9.8)	33 (40.2)	30 (36.6)	11 (13.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	82
2019	35 (12.3)	148 (51.9)	41 (14.4)	47 (16.5)	11 (3.9)	1 (0.4)	0 (0.0)	2 (0.7)	285
2020	48 (16.1)	139 (46.5)	23 (7.7)	81 (27.1)	3 (1.0)	0 (0.0)	5 (1.7)	0 (0.0)	299
2021	50 (18.4)	150 (55.1)	13 (4.8)	51 (18.8)	7 (2.6)	0 (0.0)	1 (0.4)	0 (0.0)	272

GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

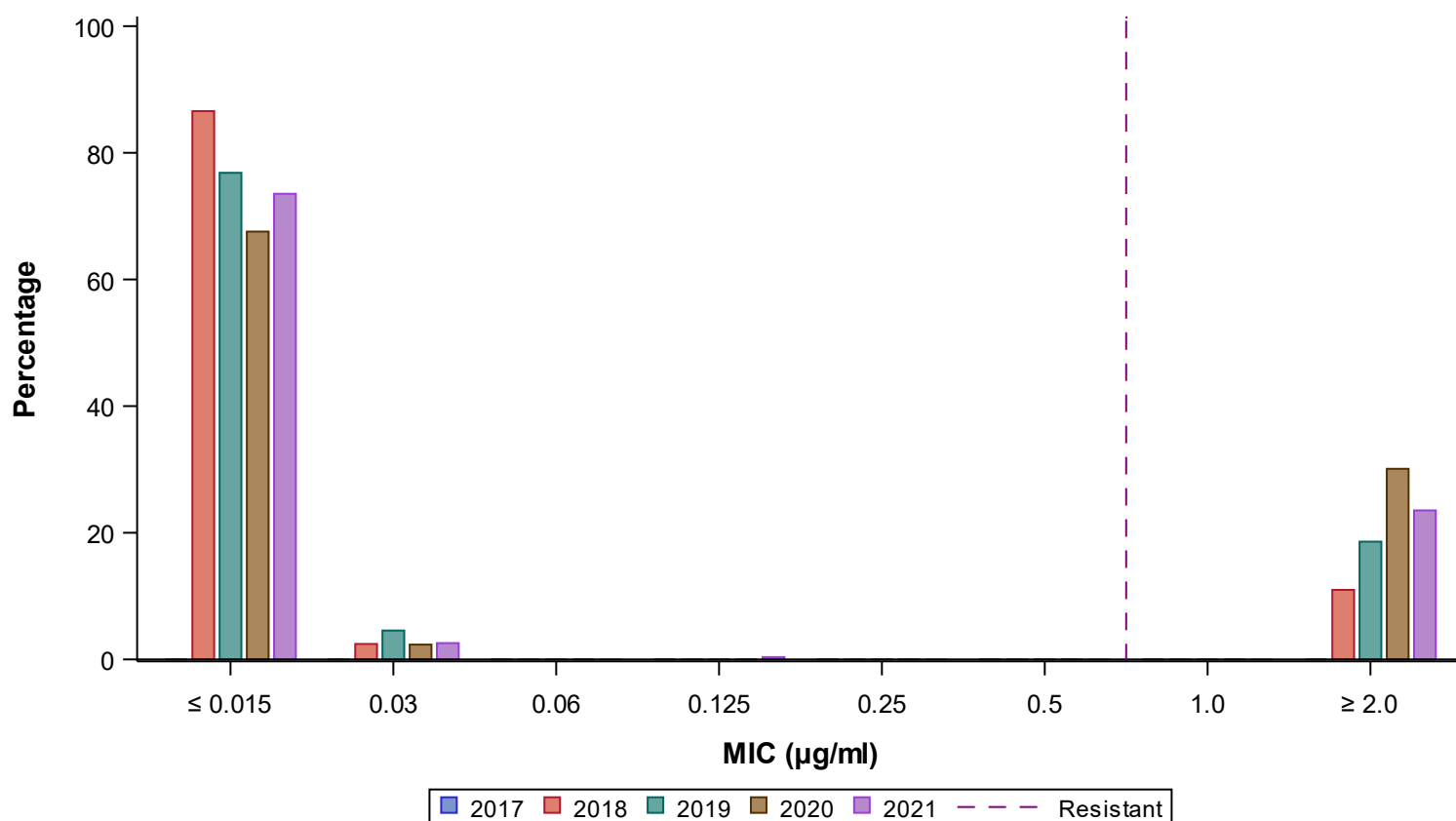
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2017-2021

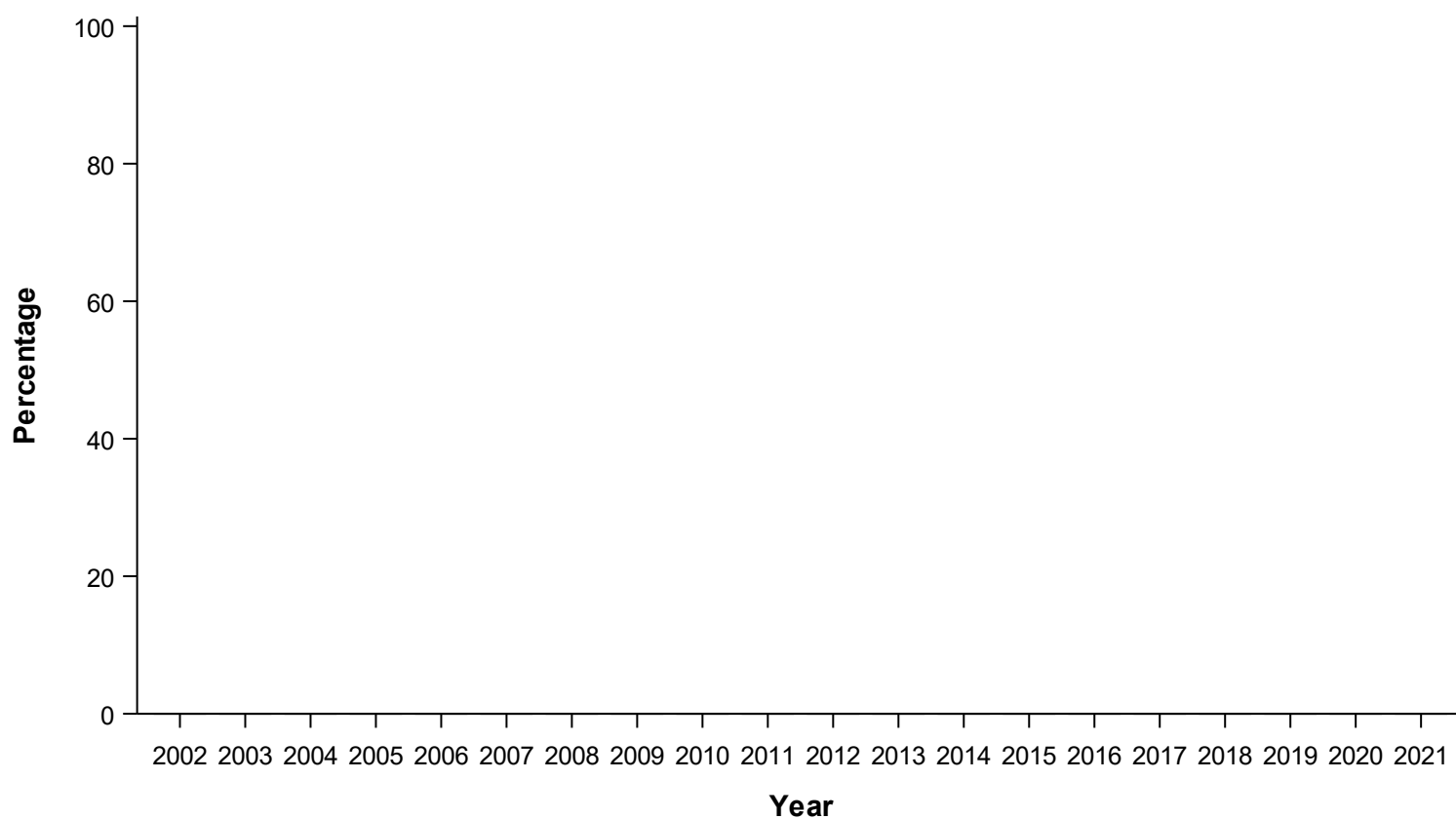


Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	71 (86.6)	2 (2.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	9 (11.0)	82
2019	219 (76.8)	13 (4.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	53 (18.6)	285
2020	202 (67.6)	7 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	90 (30.1)	299
2021	200 (73.5)	7 (2.6)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	64 (23.5)	272

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2002-2021



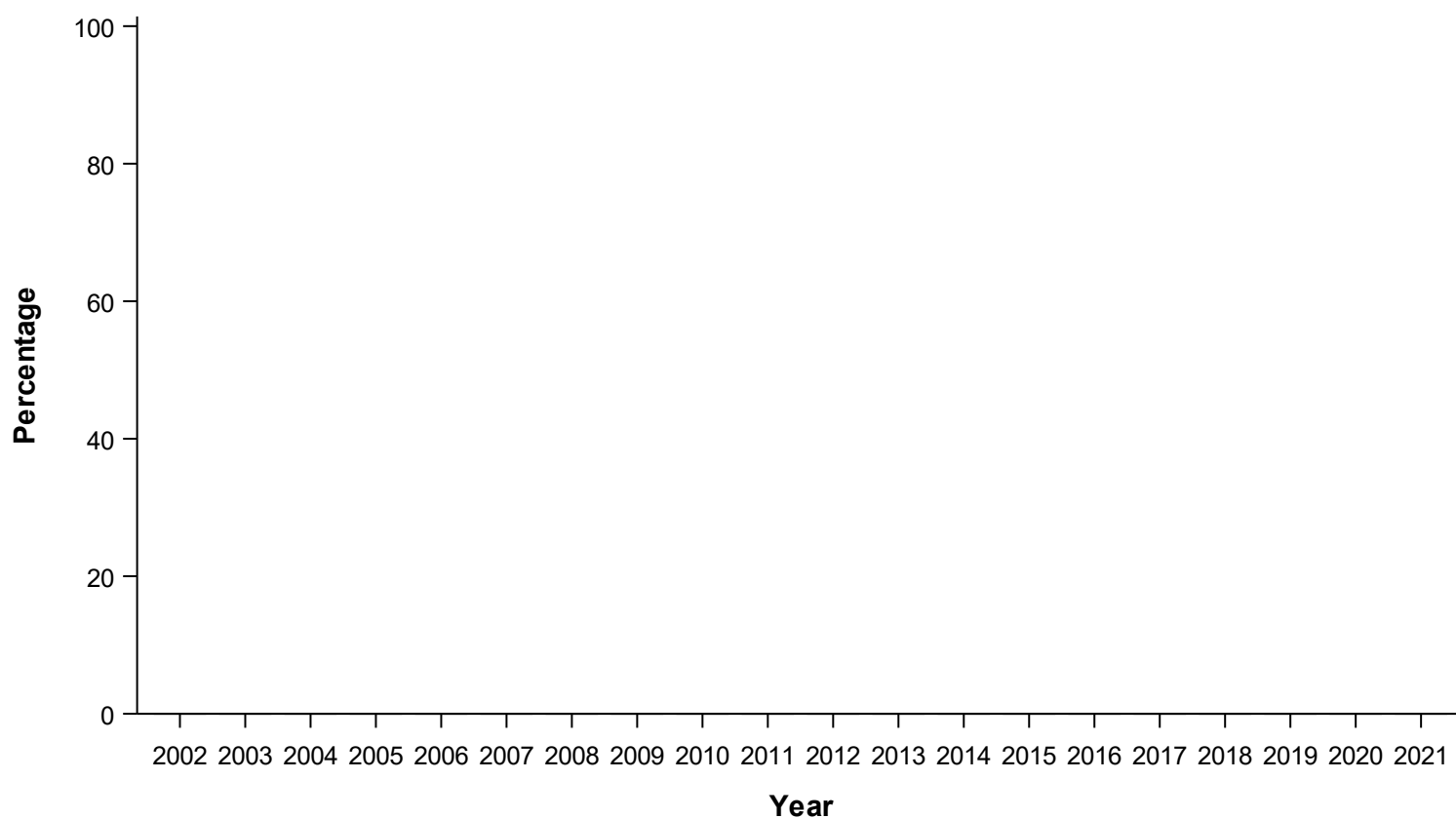
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2002-2021



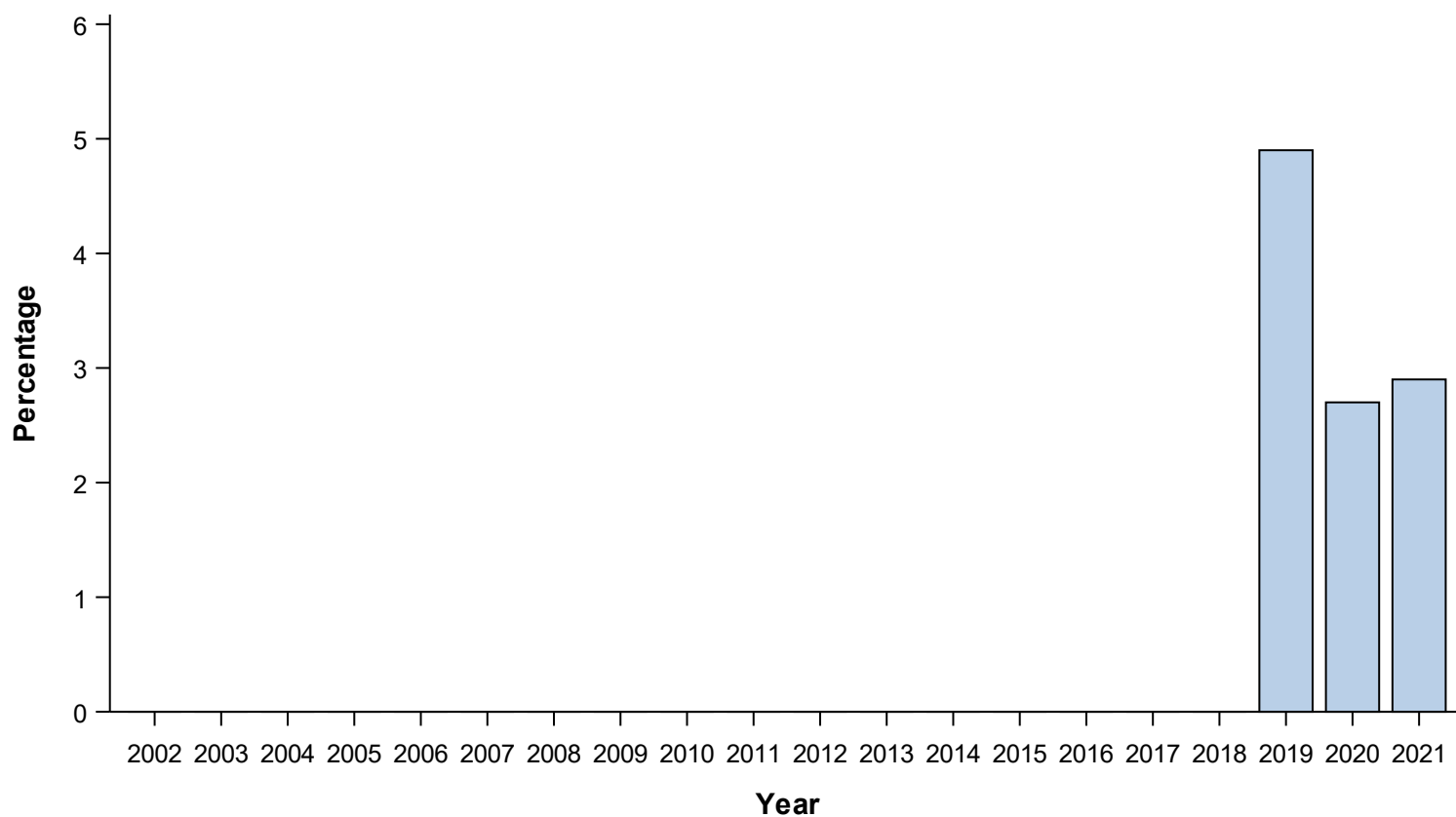
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Milwaukee, Wisconsin, 2002-2021



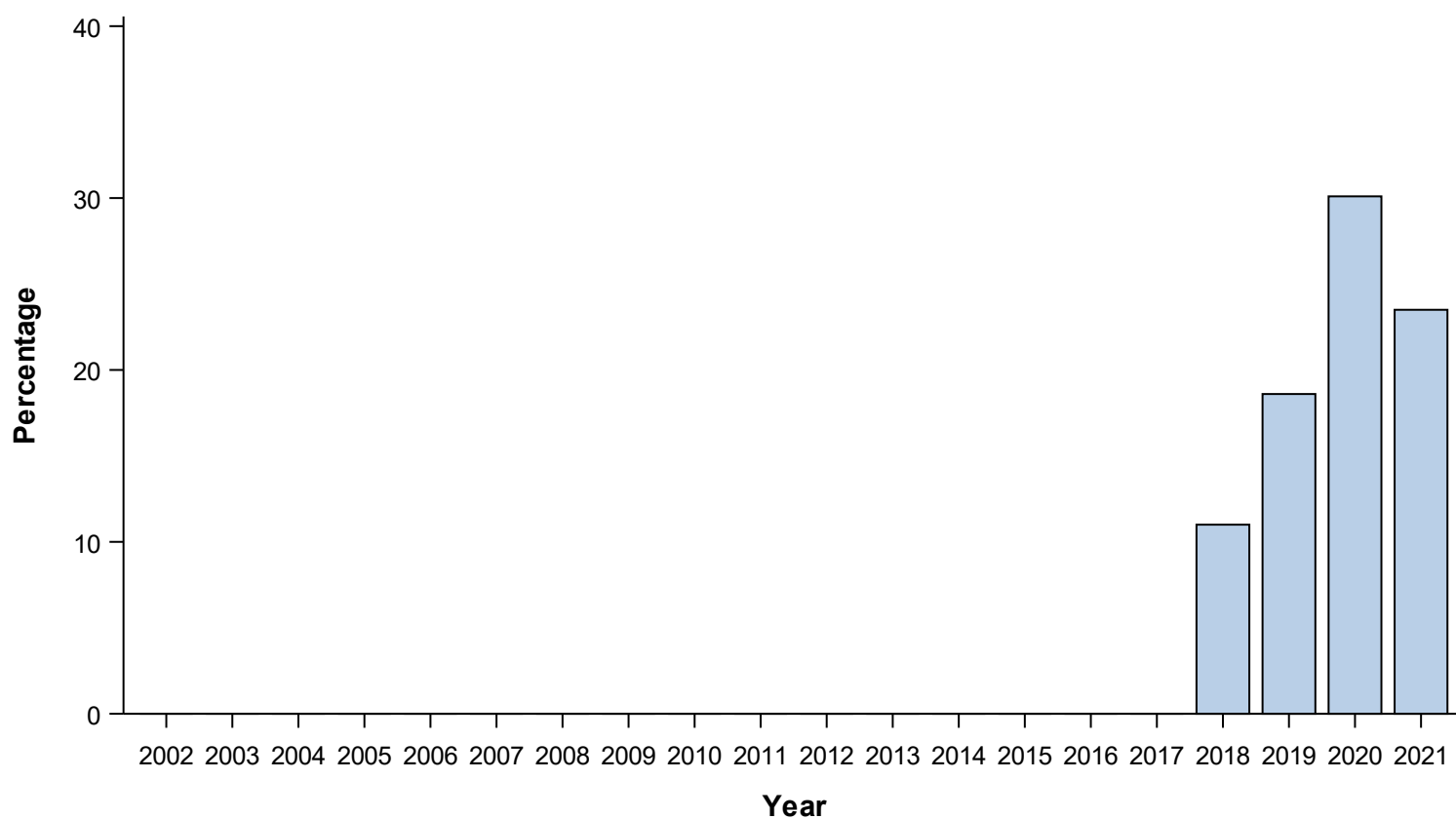
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	14 (4.9)	8 (2.7)	8 (2.9)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Milwaukee, Wisconsin, 2002-2021



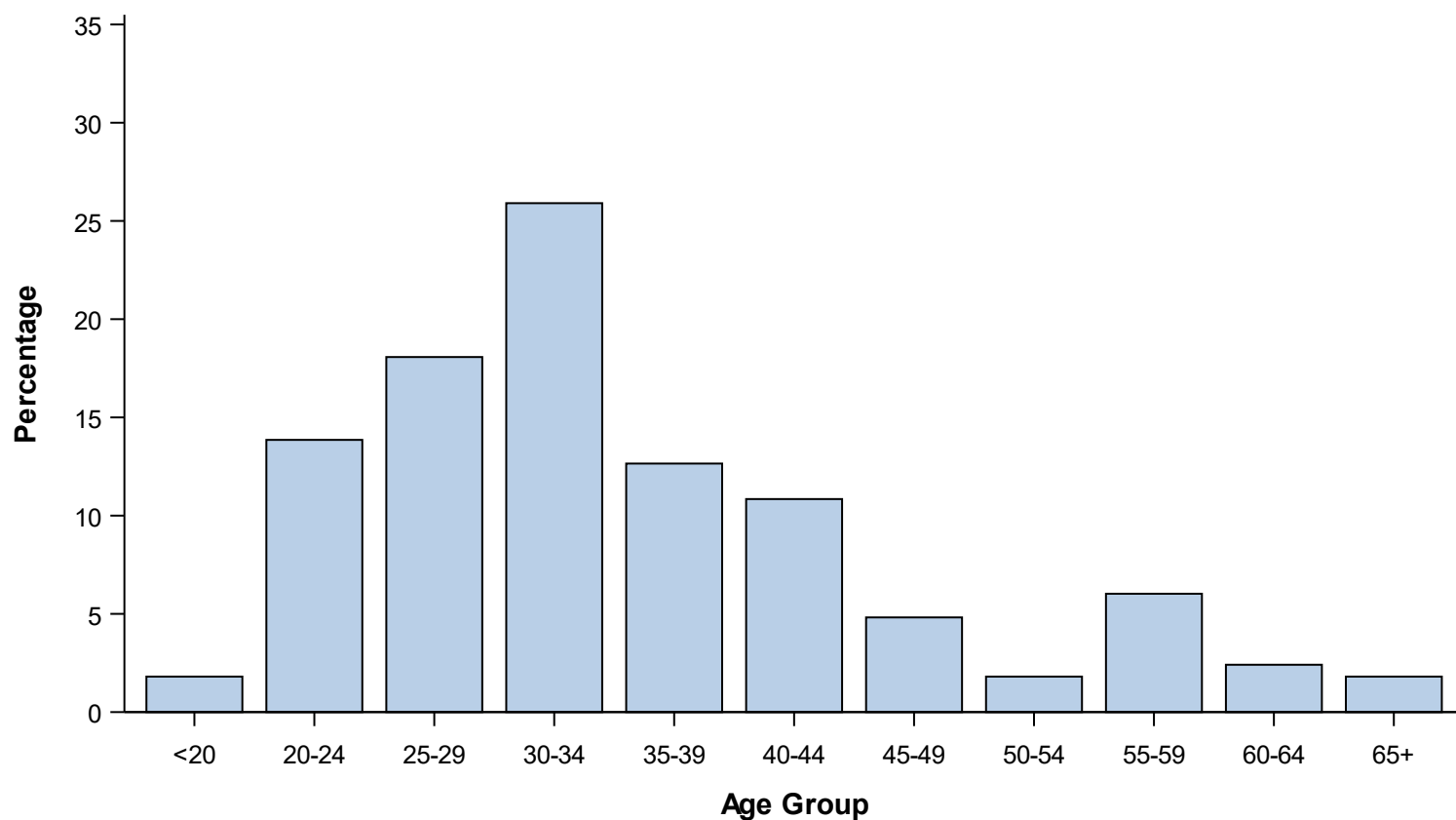
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	9 (11.0)	53 (18.6)	90 (30.1)	64 (23.5)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

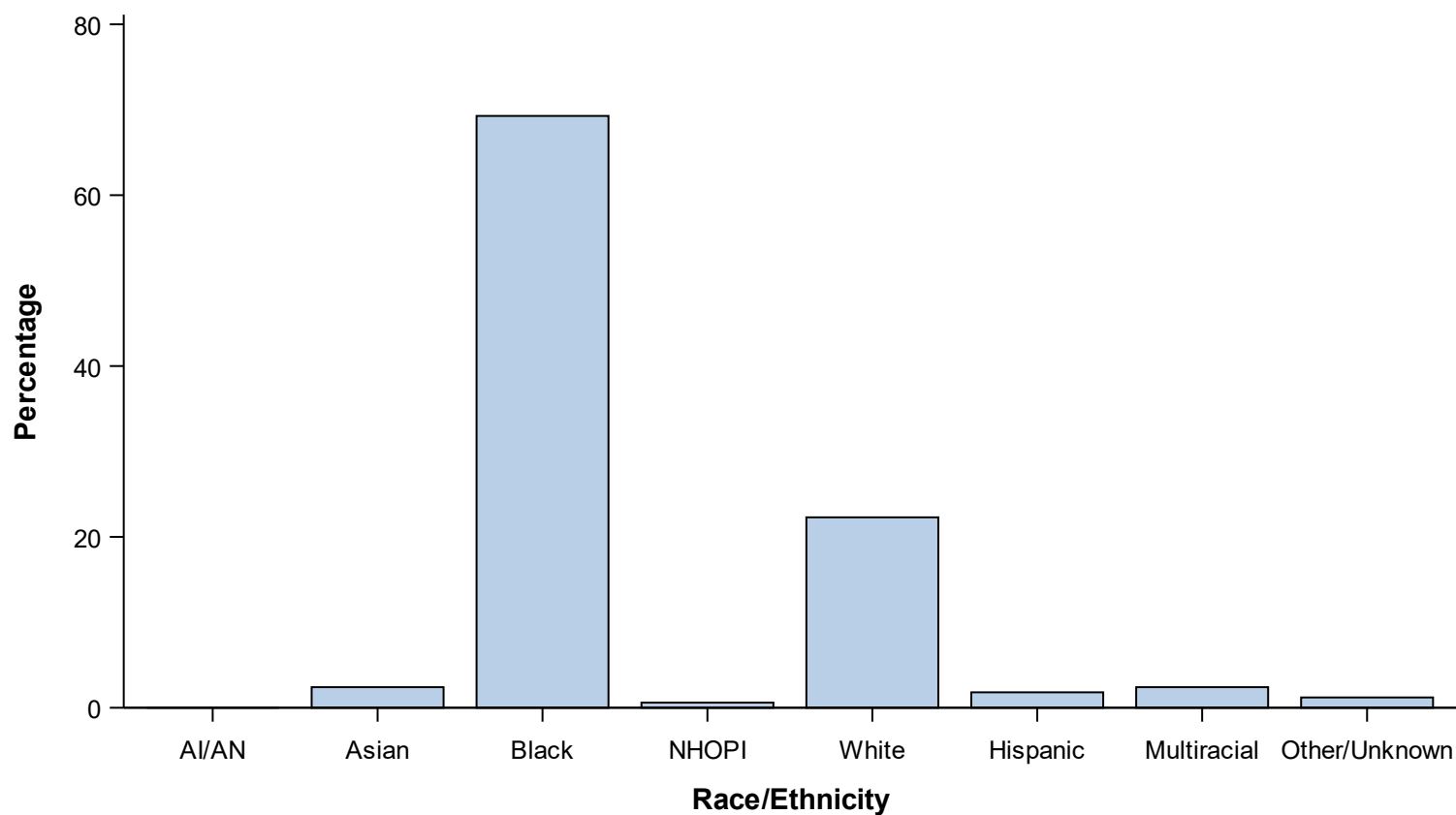
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
3 (1.8)	23 (13.9)	30 (18.1)	43 (25.9)	21 (12.7)	18 (10.8)	8 (4.8)	3 (1.8)	10 (6.0)	4 (2.4)	3 (1.8)	166

Note: Cases with unknown age were excluded.

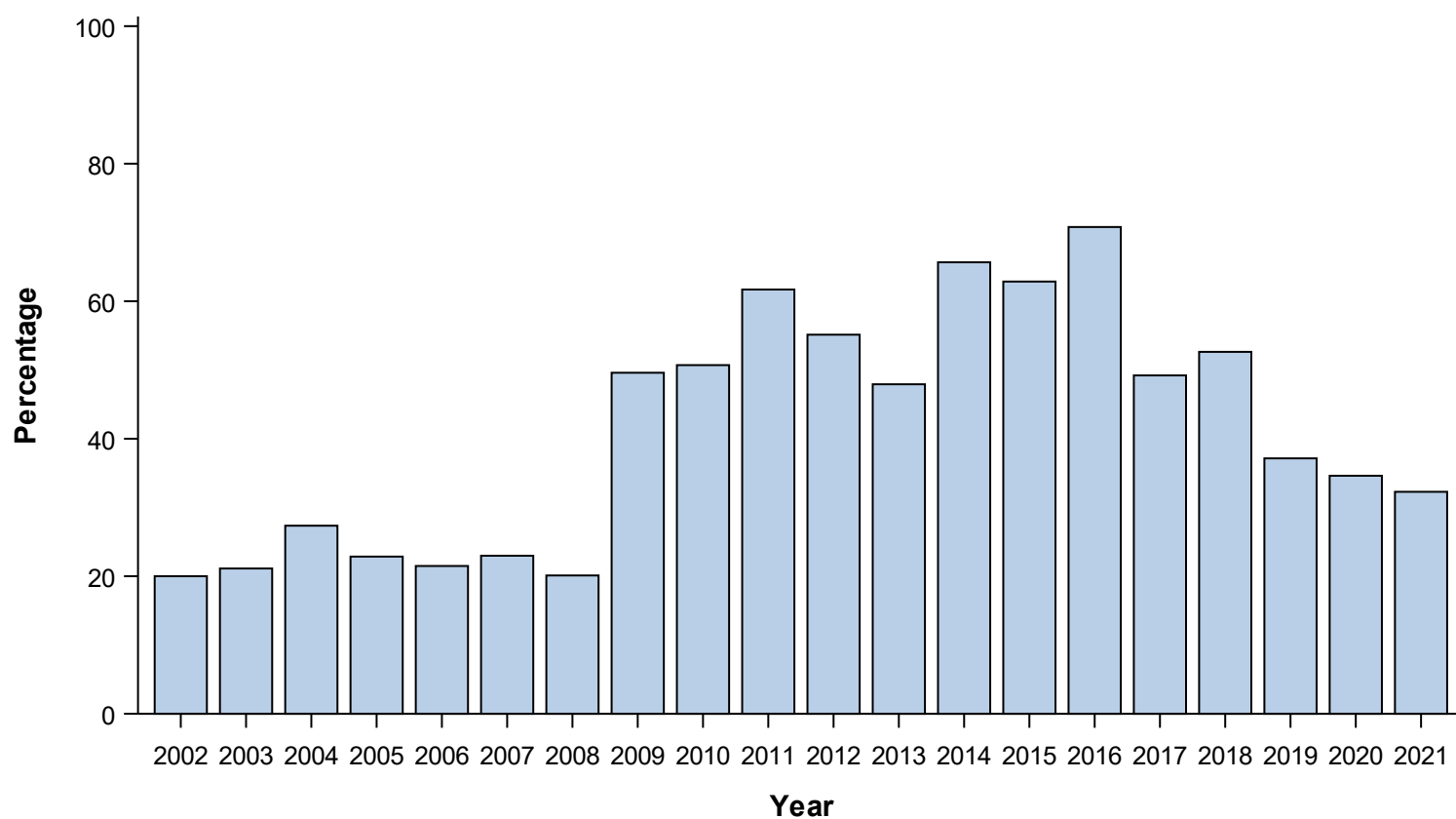
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	4 (2.4)	115 (69.3)	1 (0.6)	37 (22.3)	3 (1.8)	4 (2.4)	2 (1.2)	166

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Minneapolis, Minnesota, 2002-2021

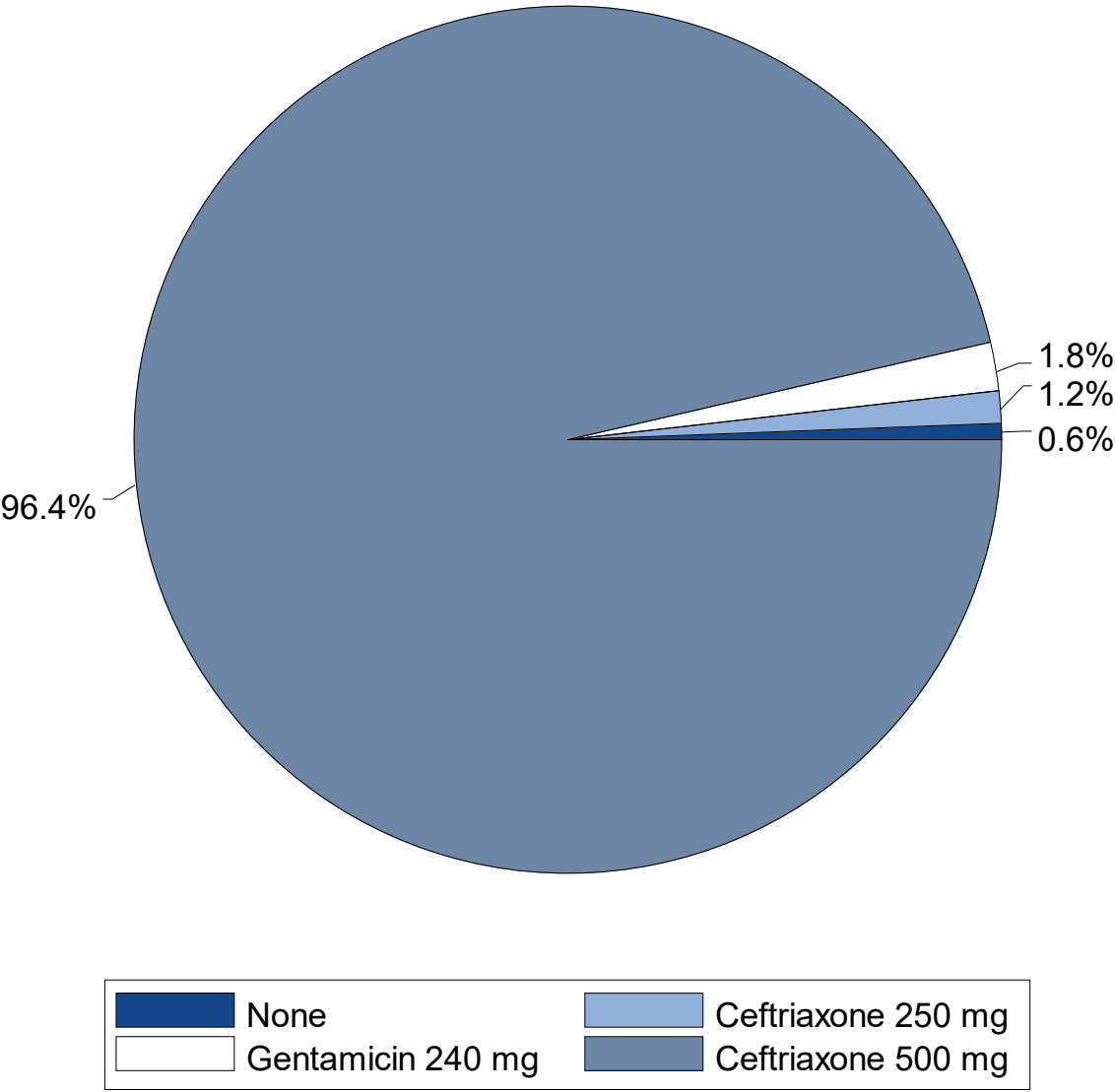


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
38 (20.0)	45 (21.1)	64 (27.4)	56 (22.9)	49 (21.5)	57 (23.0)	36 (20.1)	61 (49.6)	36 (50.7)	29 (61.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
43 (55.1)	46 (47.9)	65 (65.7)	66 (62.9)	63 (70.8)	31 (49.2)	40 (52.6)	26 (37.1)	27 (34.6)	51 (32.3)

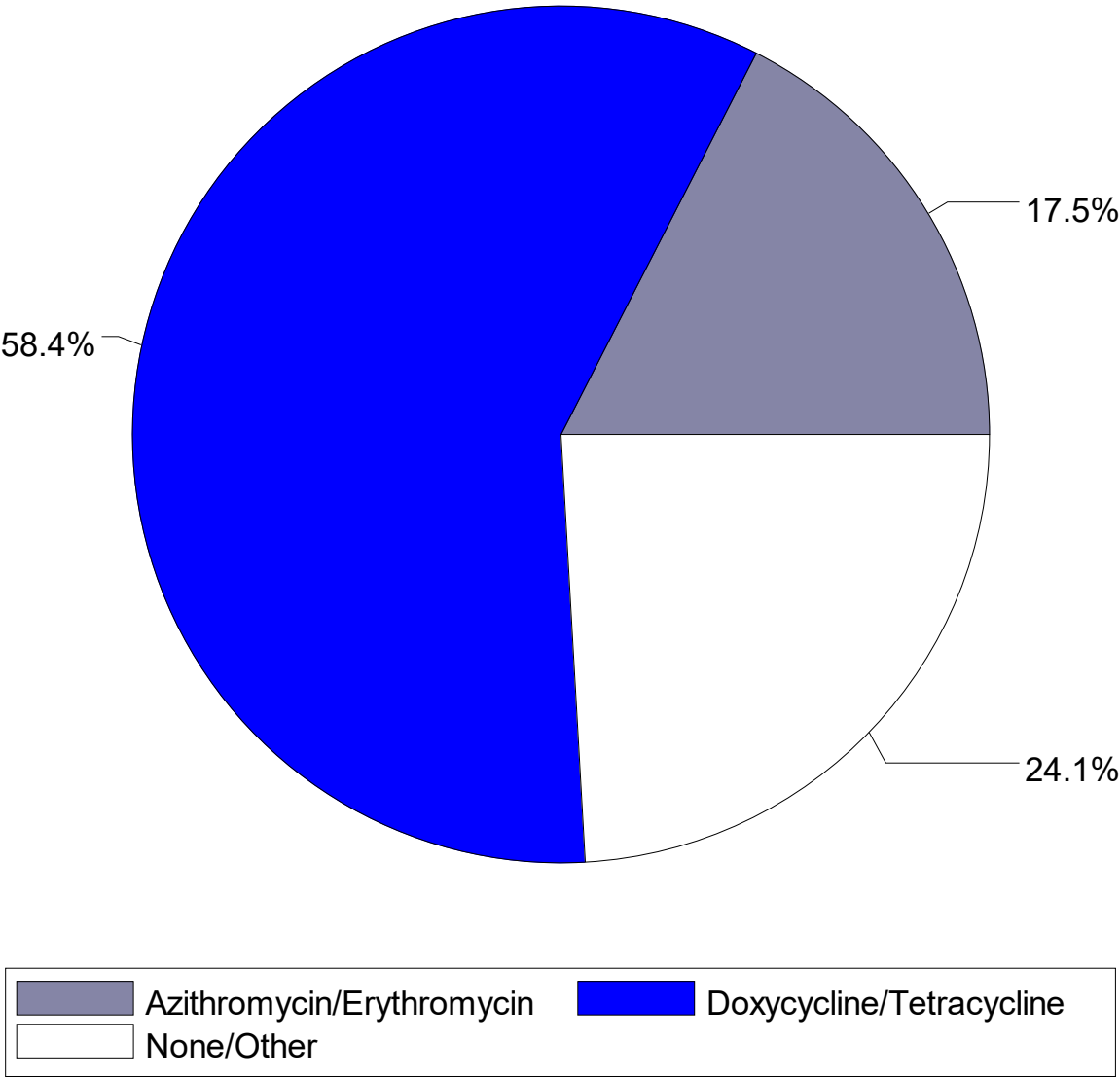
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2021



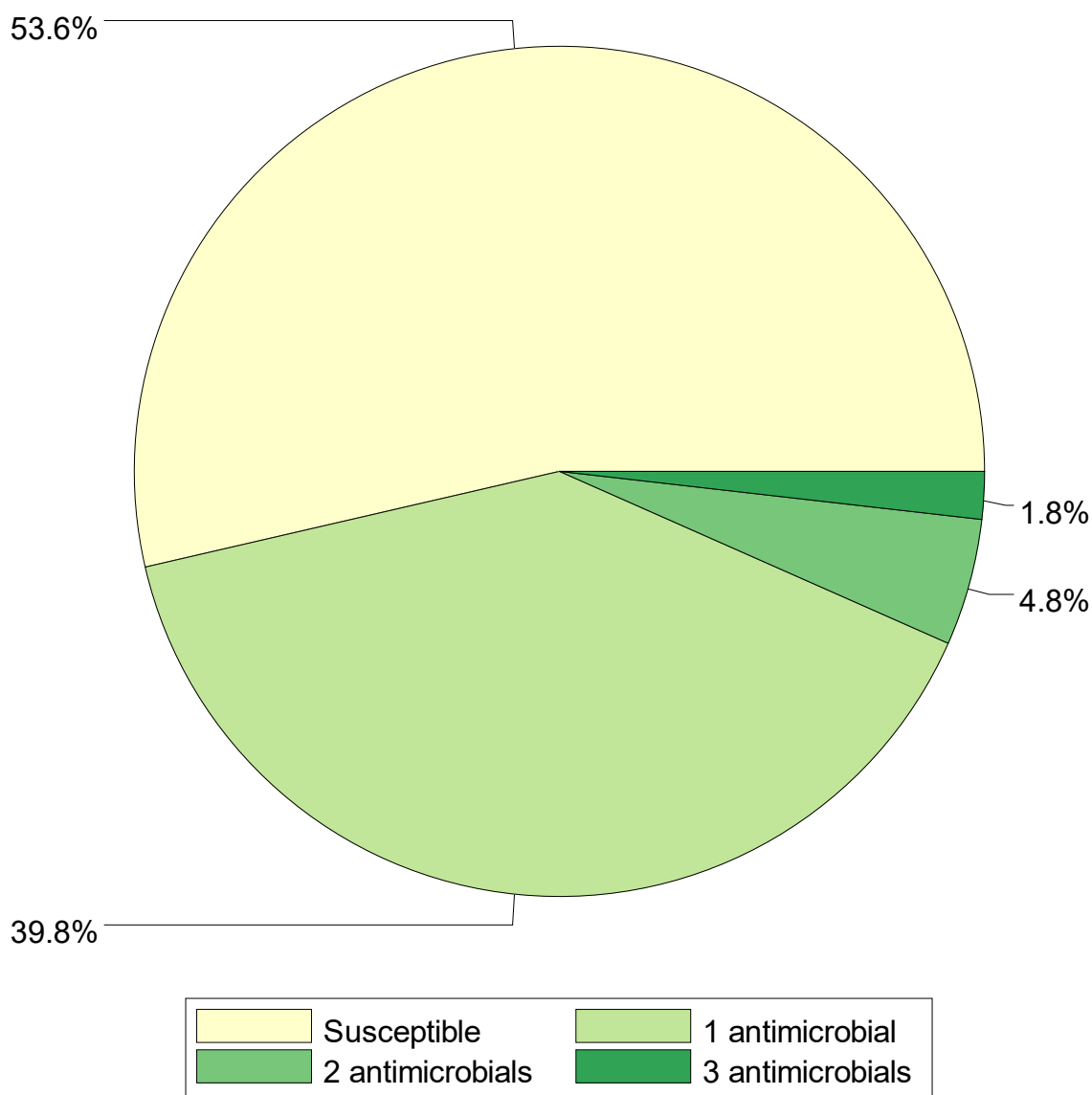
Primary Treatment	Count	Percentage
None	1	0.6
Ceftriaxone 250 mg	2	1.2
Gentamicin 240 mg	3	1.8
Ceftriaxone 500 mg	160	96.4

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	29	17.5
Doxycycline/Tetracycline	97	58.4
None/Other	40	24.1

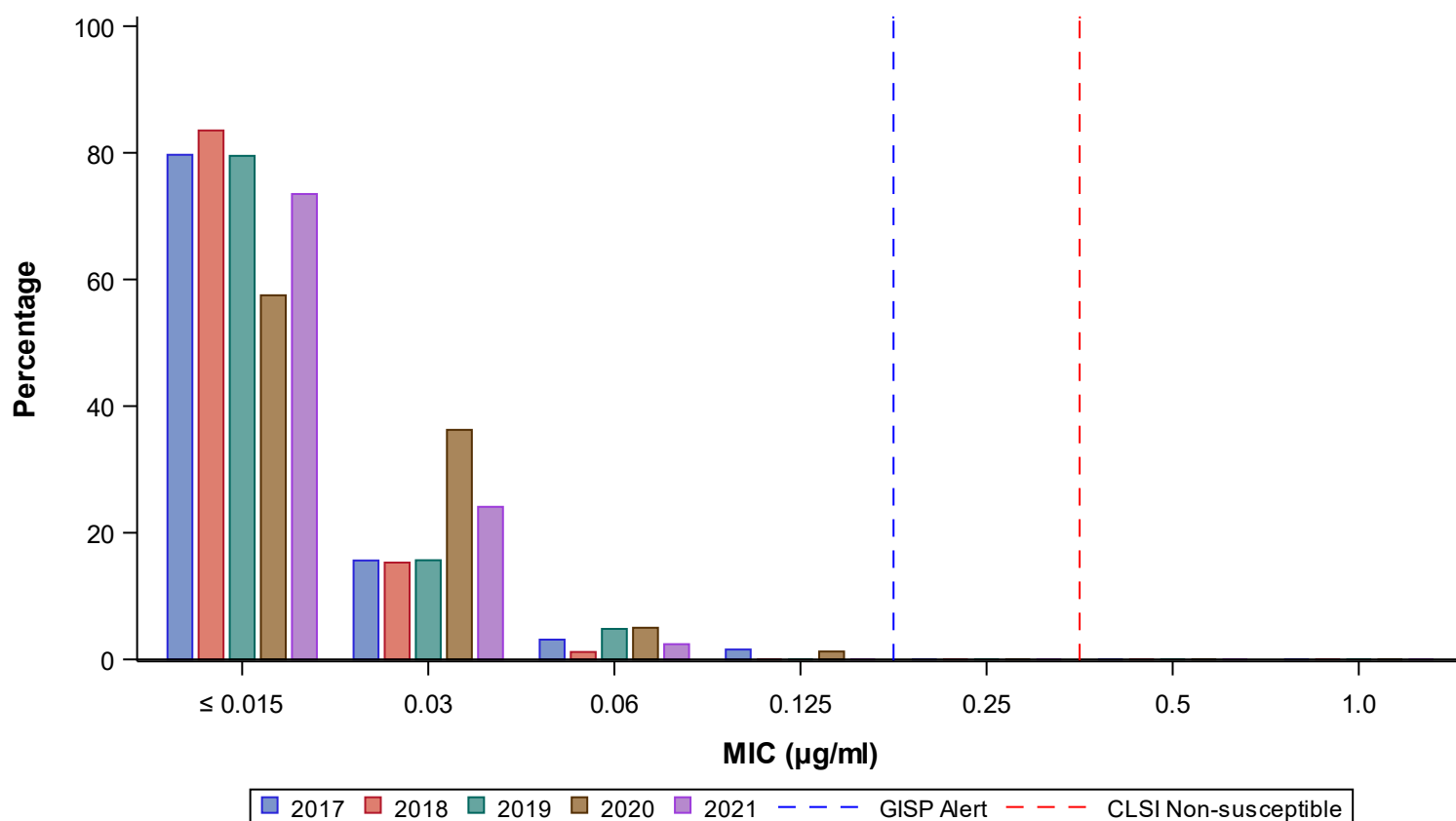
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	89	53.6
1 antimicrobial	66	39.8
2 antimicrobials	8	4.8
3 antimicrobials	3	1.8
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2017-2021



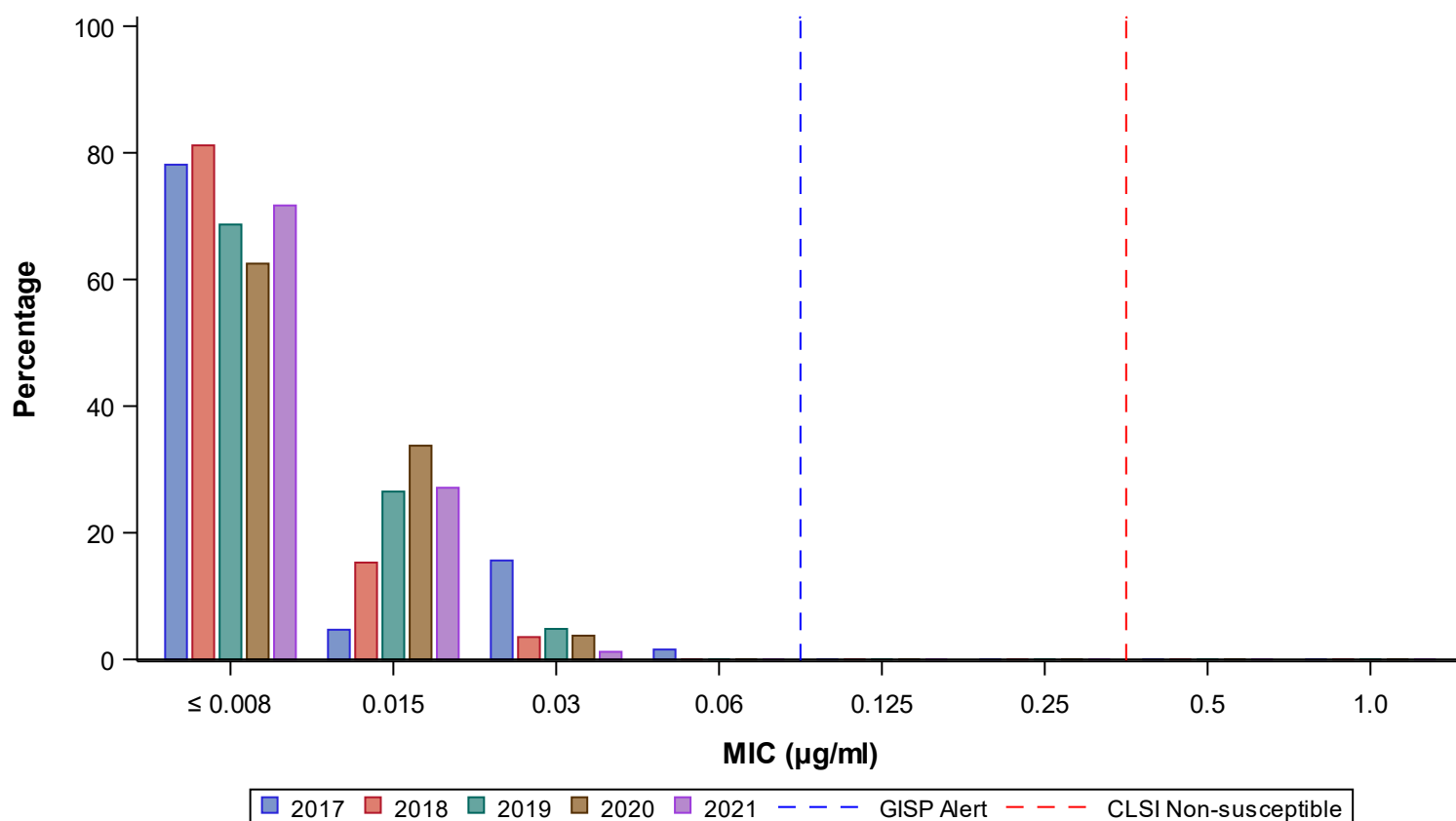
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	51 (79.7)	10 (15.6)	2 (3.1)	1 (1.6)	0 (0.0)	0 (0.0)	0 (0.0)	64
2018	71 (83.5)	13 (15.3)	1 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	85
2019	66 (79.5)	13 (15.7)	4 (4.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	83
2020	46 (57.5)	29 (36.3)	4 (5.0)	1 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	80
2021	122 (73.5)	40 (24.1)	4 (2.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	166

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2017-2021



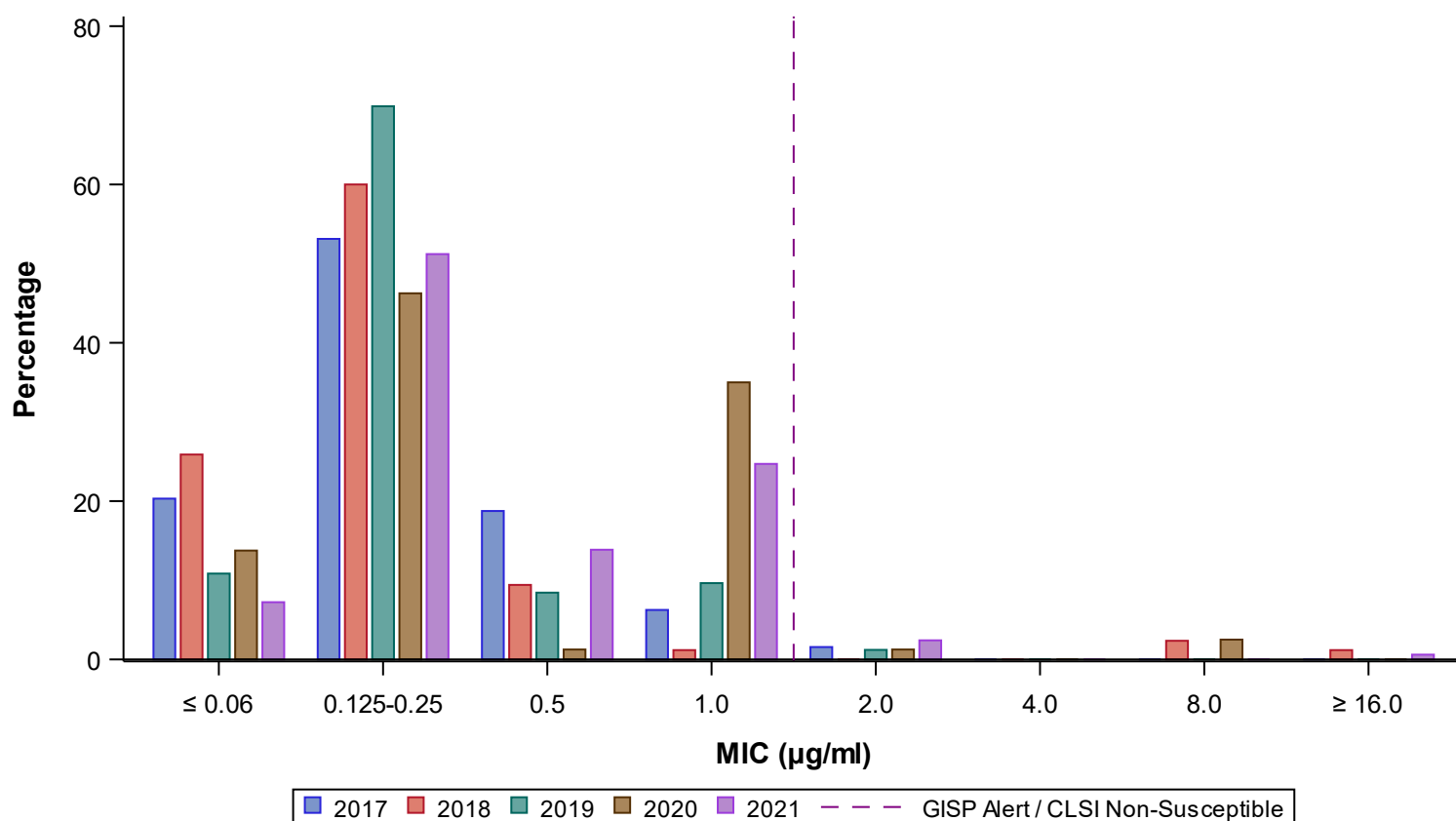
Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	50 (78.1)	3 (4.7)	10 (15.6)	1 (1.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	64
2018	69 (81.2)	13 (15.3)	3 (3.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	85
2019	57 (68.7)	22 (26.5)	4 (4.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	83
2020	50 (62.5)	27 (33.8)	3 (3.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	80
2021	119 (71.7)	45 (27.1)	2 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	166

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	13 (20.3)	34 (53.1)	12 (18.8)	4 (6.3)	1 (1.6)	0 (0.0)	0 (0.0)	0 (0.0)	64
2018	22 (25.9)	51 (60.0)	8 (9.4)	1 (1.2)	0 (0.0)	0 (0.0)	2 (2.4)	1 (1.2)	85
2019	9 (10.8)	58 (69.9)	7 (8.4)	8 (9.6)	1 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	83
2020	11 (13.8)	37 (46.3)	1 (1.3)	28 (35.0)	1 (1.3)	0 (0.0)	2 (2.5)	0 (0.0)	80
2021	12 (7.2)	85 (51.2)	23 (13.9)	41 (24.7)	4 (2.4)	0 (0.0)	0 (0.0)	1 (0.6)	166

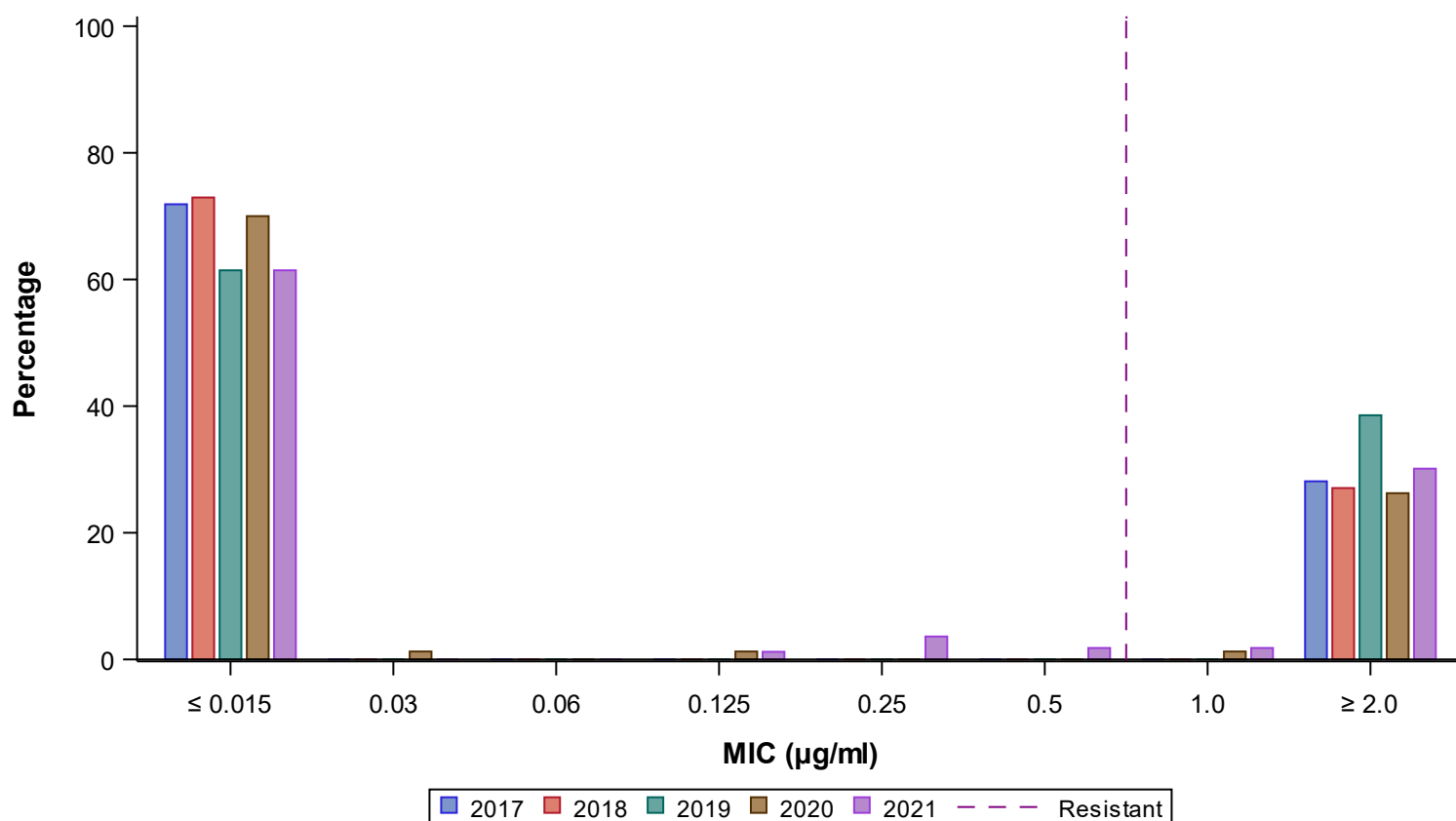
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

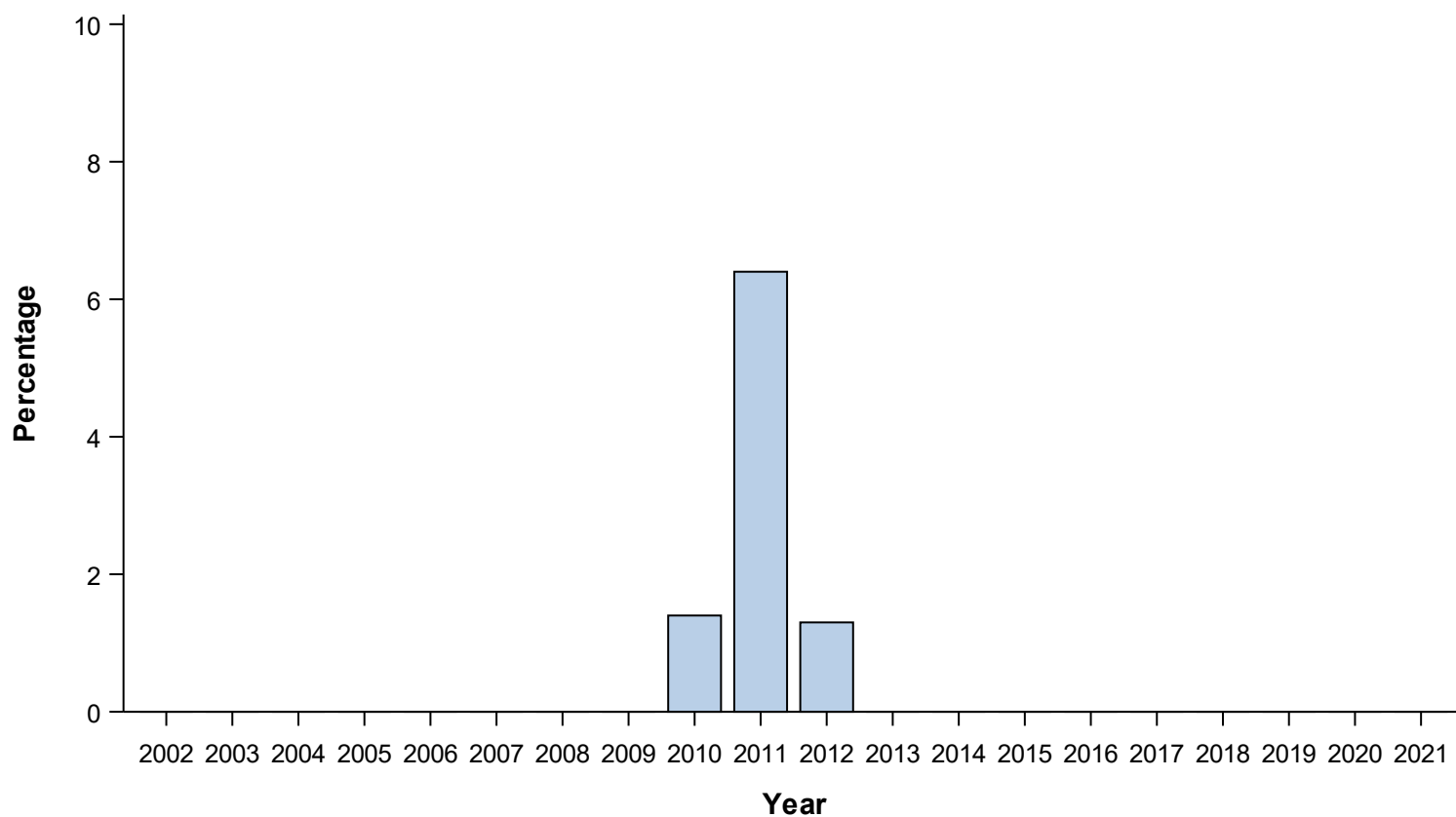
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	46 (71.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	18 (28.1)	64
2018	62 (72.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	23 (27.1)	85
2019	51 (61.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	32 (38.6)	83
2020	56 (70.0)	1 (1.3)	0 (0.0)	1 (1.3)	0 (0.0)	0 (0.0)	1 (1.3)	21 (26.3)	80
2021	102 (61.4)	0 (0.0)	0 (0.0)	2 (1.2)	6 (3.6)	3 (1.8)	3 (1.8)	50 (30.1)	166

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2002-2021

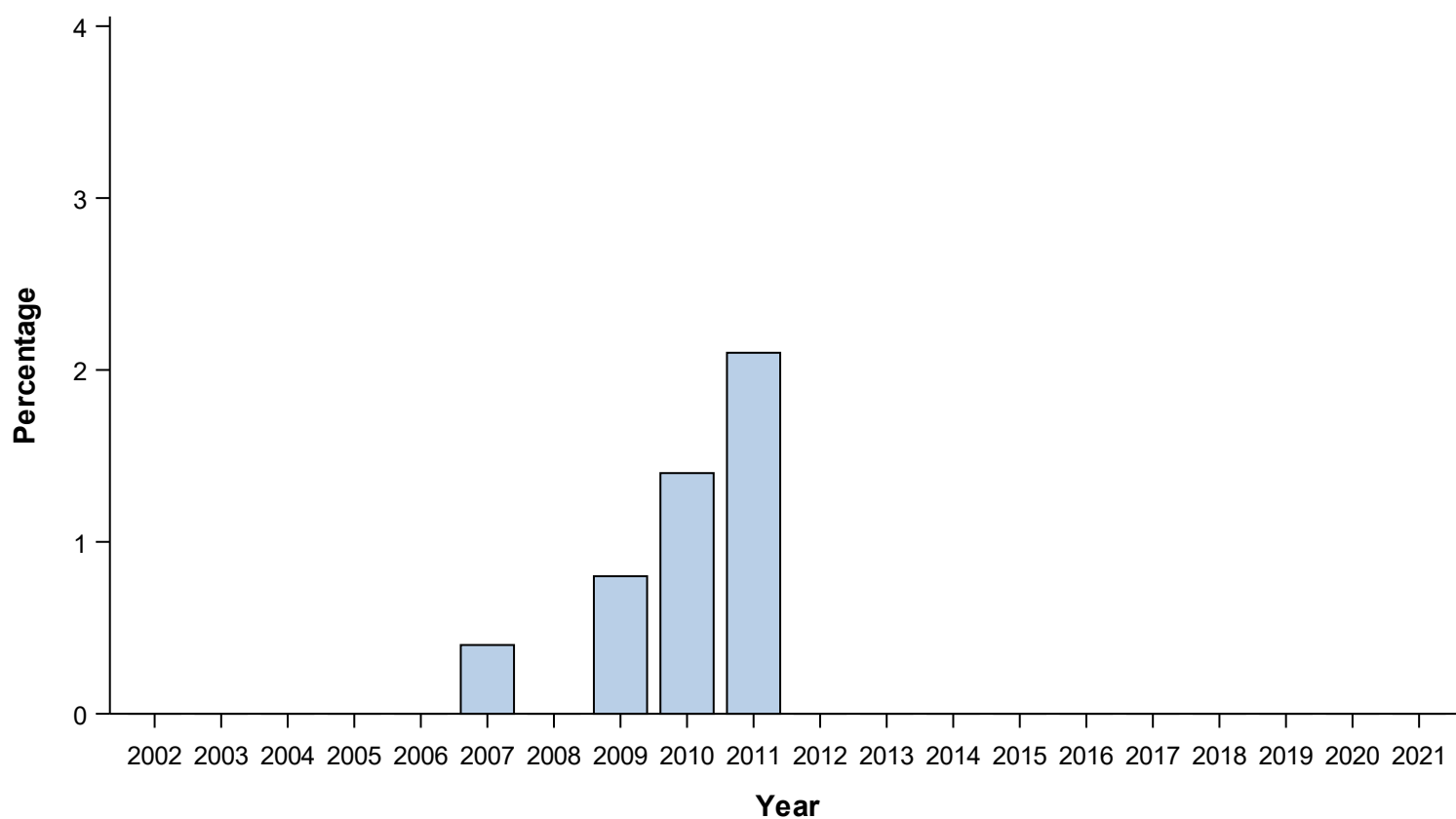


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.4)	3 (6.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2002-2021

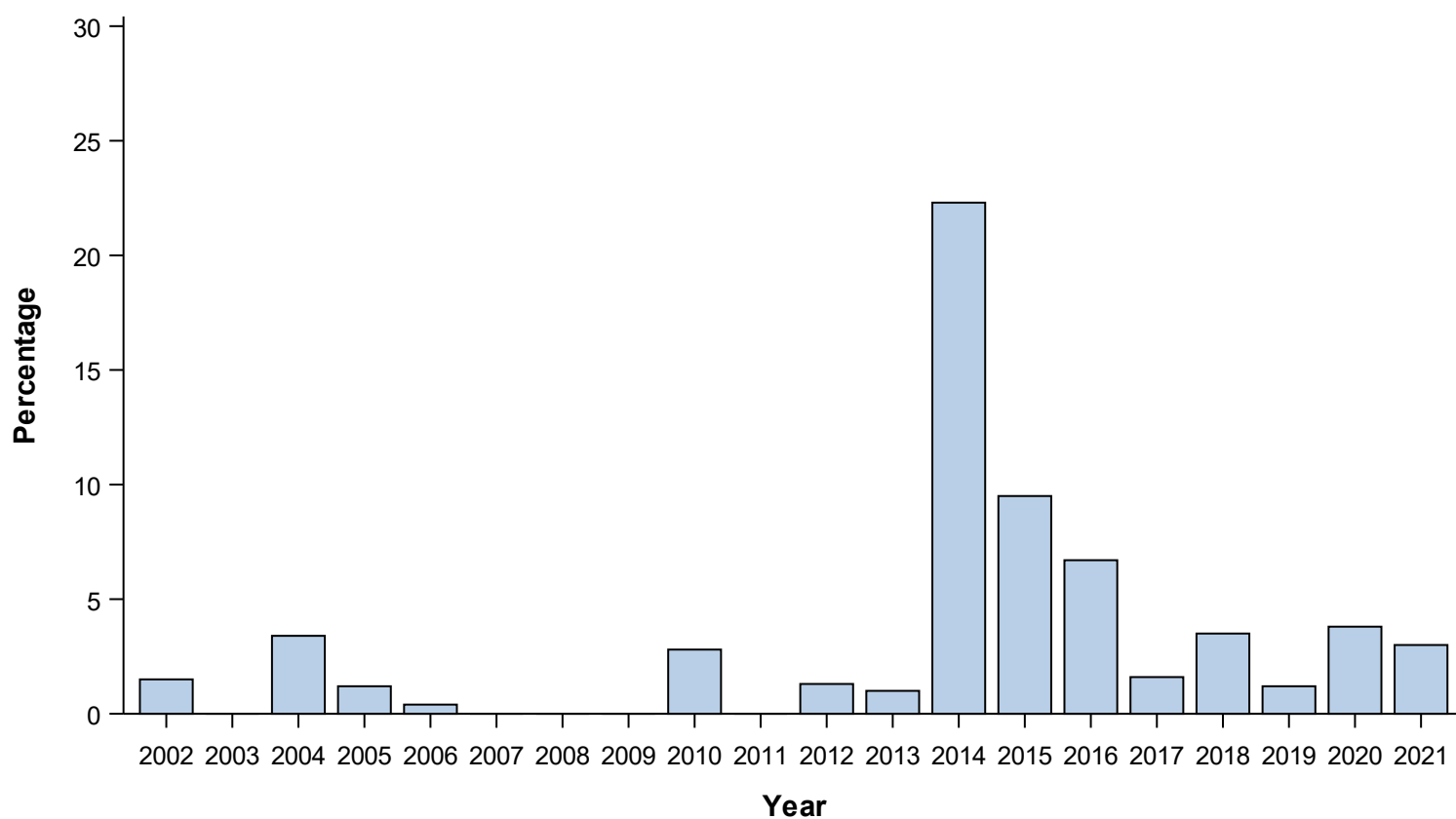


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	1 (0.8)	1 (1.4)	1 (2.1)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Minneapolis, Minnesota, 2002-2021

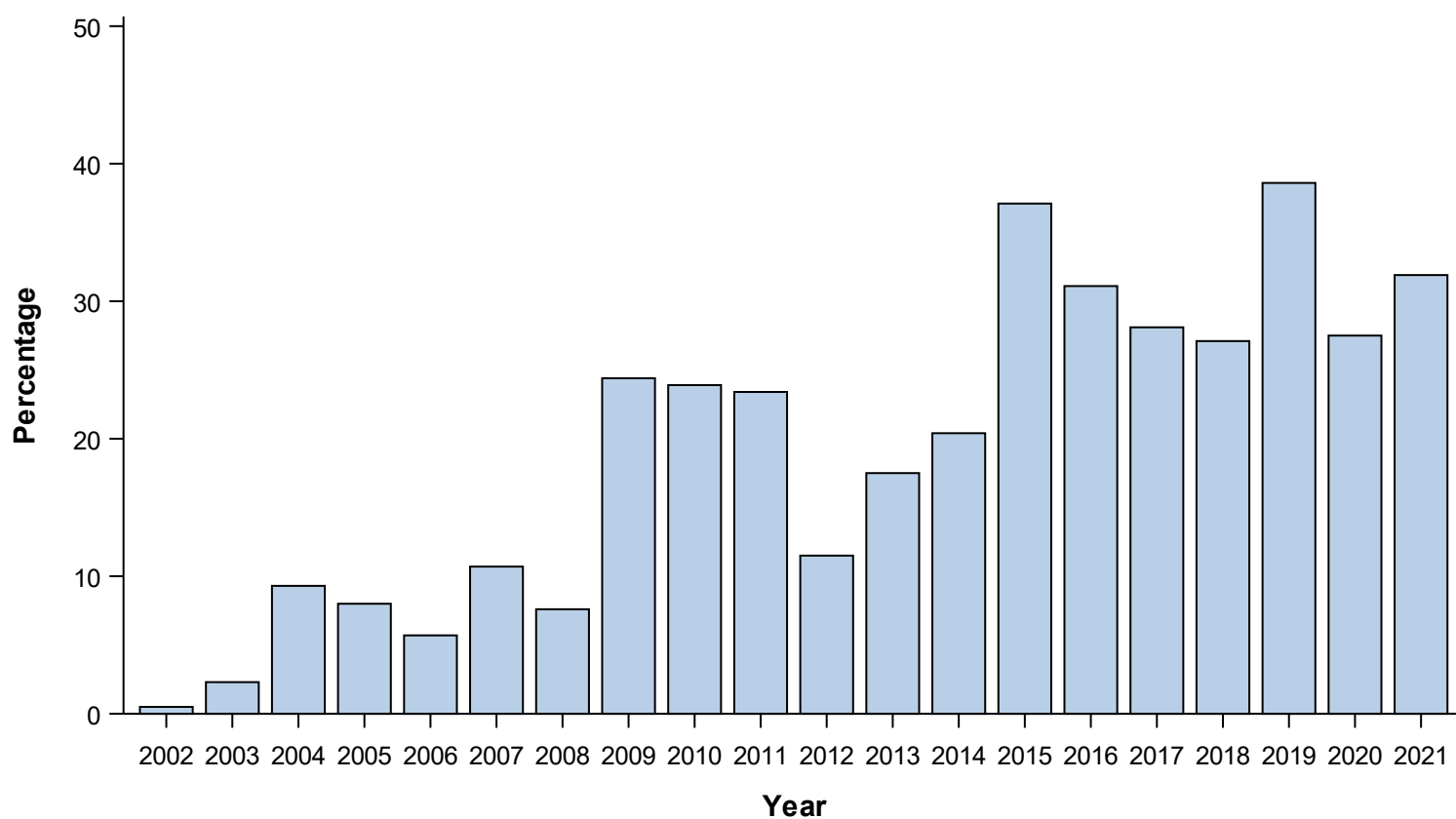


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
3 (1.5)	0 (0.0)	8 (3.4)	3 (1.2)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	2 (2.8)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (1.3)	1 (1.0)	23 (22.3)	10 (9.5)	6 (6.7)	1 (1.6)	3 (3.5)	1 (1.2)	3 (3.8)	5 (3.0)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Minneapolis, Minnesota, 2002-2021

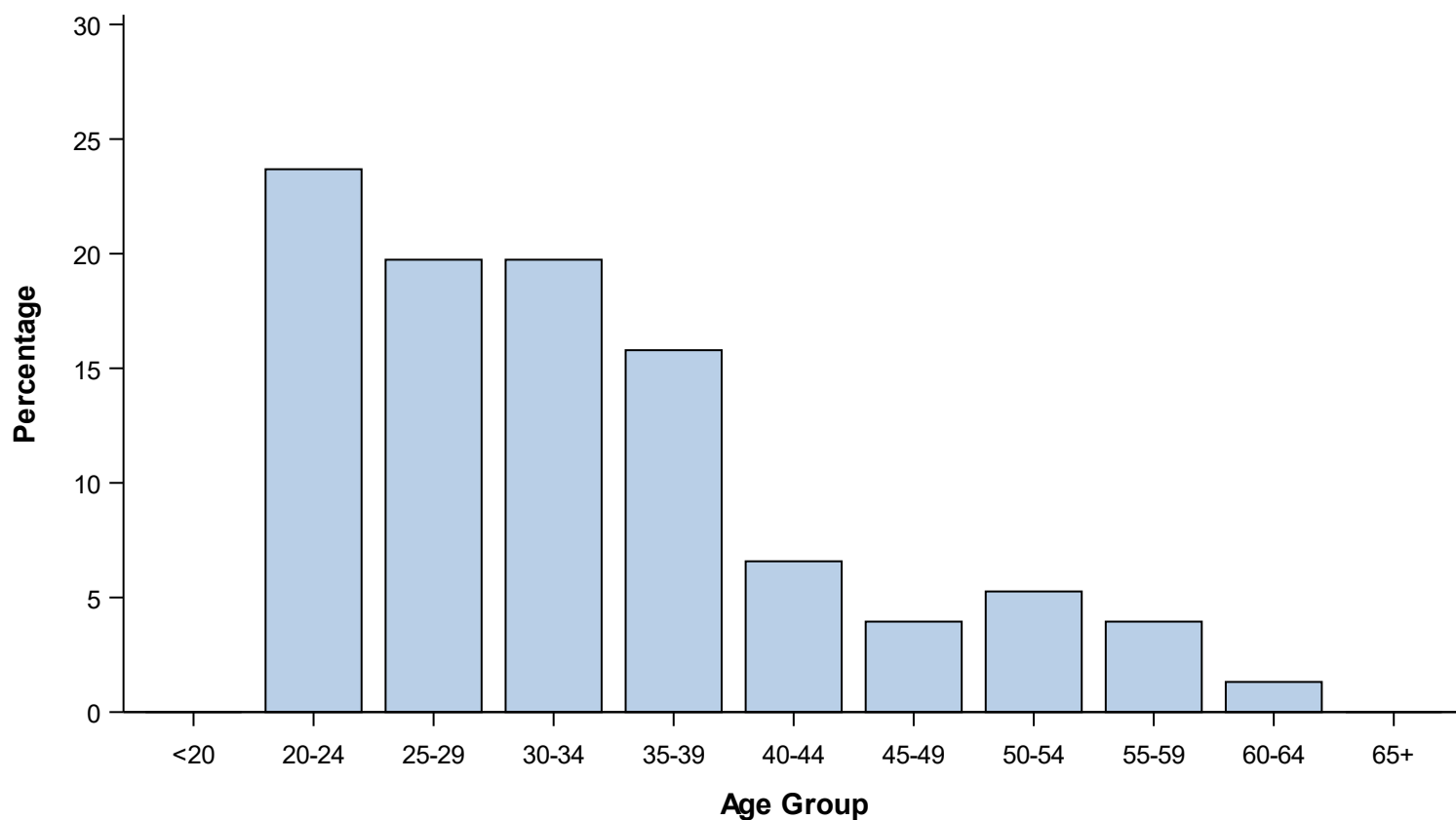


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (0.5)	5 (2.3)	22 (9.3)	20 (8.0)	13 (5.7)	27 (10.7)	14 (7.6)	30 (24.4)	17 (23.9)	11 (23.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
9 (11.5)	17 (17.5)	21 (20.4)	39 (37.1)	28 (31.1)	18 (28.1)	23 (27.1)	32 (38.6)	22 (27.5)	53 (31.9)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

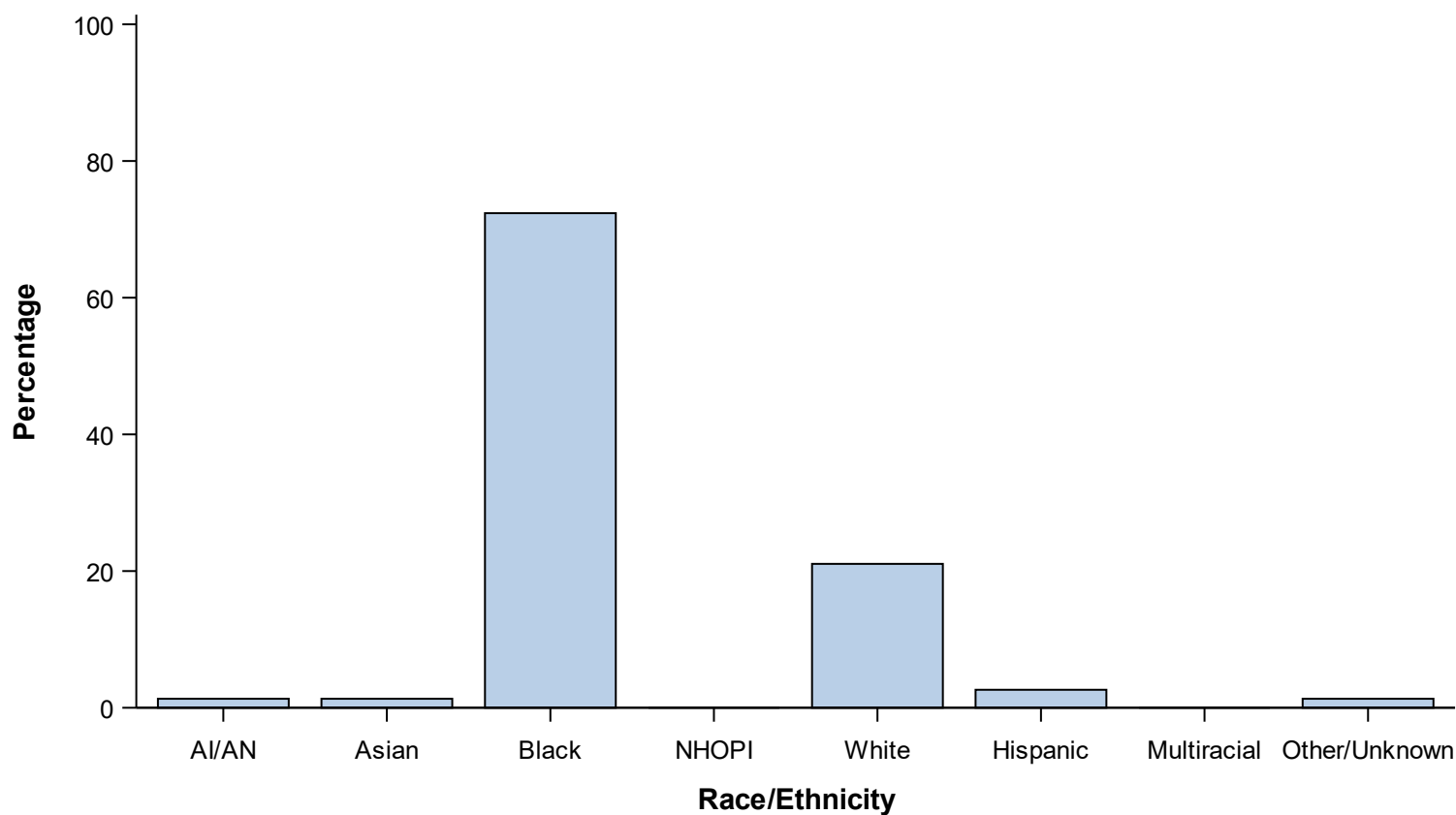
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
0 (0.0)	18 (23.7)	15 (19.7)	15 (19.7)	12 (15.8)	5 (6.6)	3 (3.9)	4 (5.3)	3 (3.9)	1 (1.3)	0 (0.0)	76

Note: Cases with unknown age were excluded.

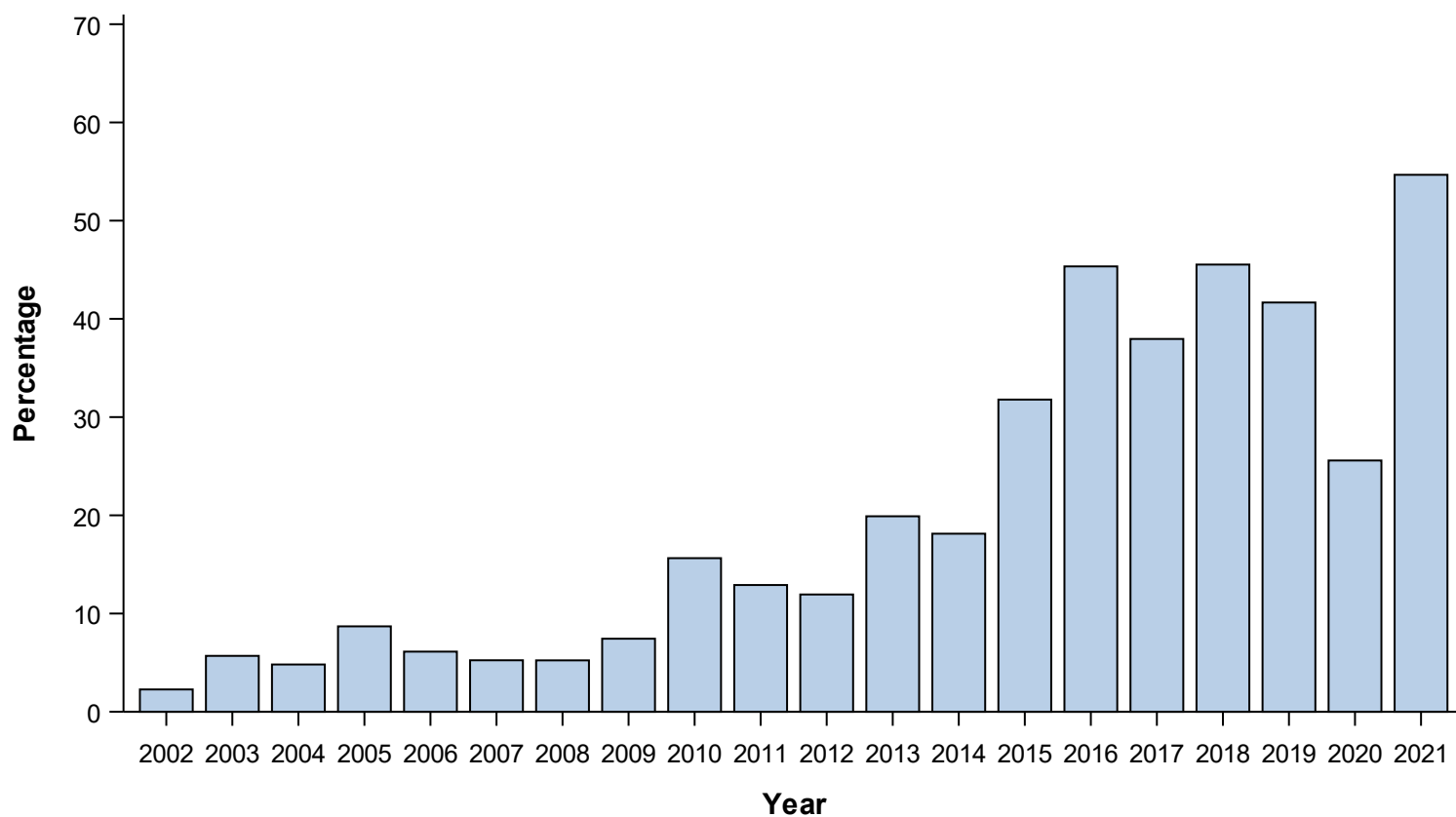
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
1 (1.3)	1 (1.3)	55 (72.4)	0 (0.0)	16 (21.1)	2 (2.6)	0 (0.0)	1 (1.3)	76

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
New Orleans, Louisiana, 2002-2021

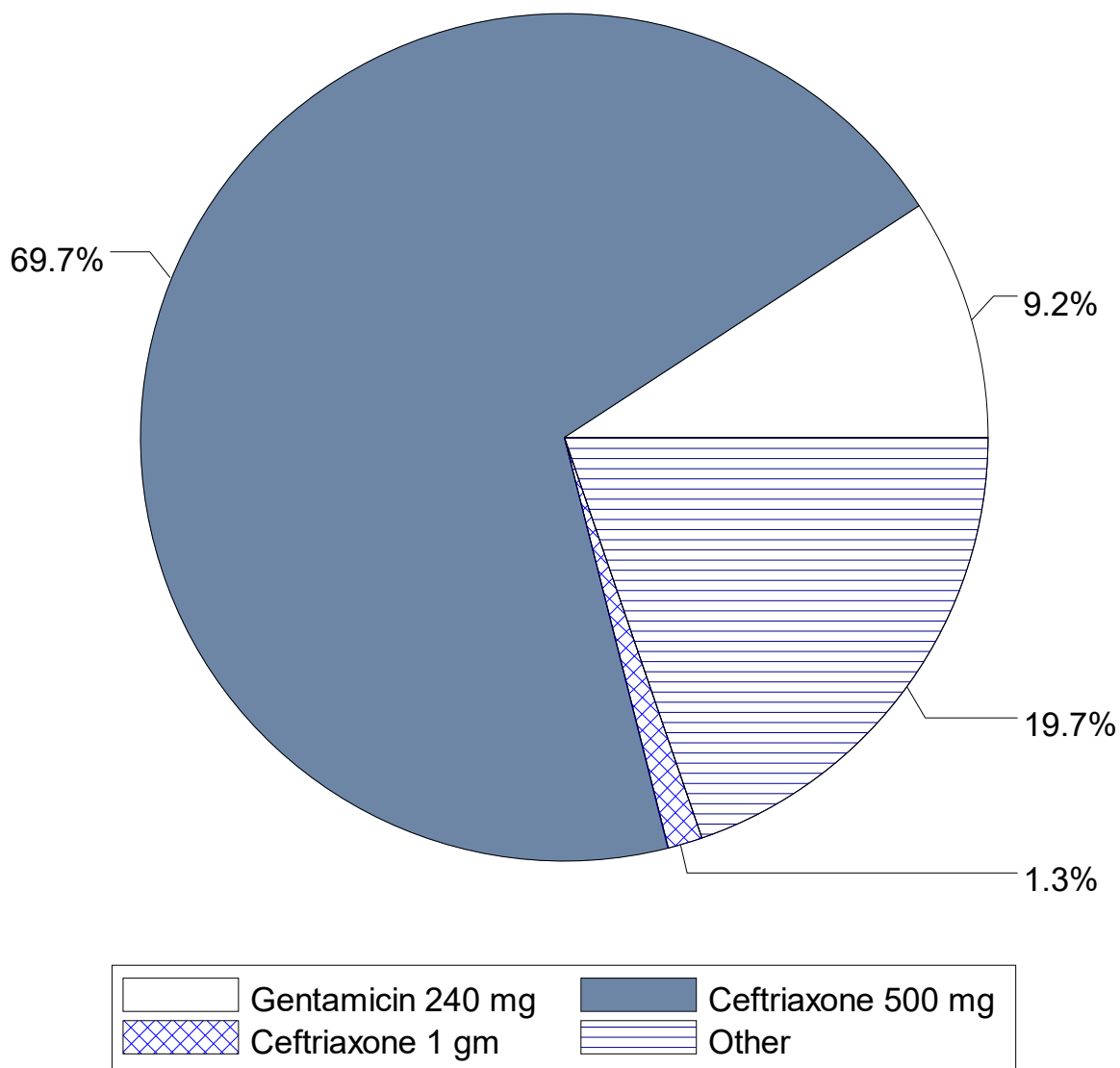


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
3 (2.3)	14 (5.7)	9 (4.8)	8 (8.7)	3 (6.1)	13 (5.2)	9 (5.2)	18 (7.4)	38 (15.6)	32 (12.9)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
24 (11.9)	41 (19.9)	31 (18.1)	41 (31.8)	73 (45.3)	52 (38.0)	56 (45.5)	50 (41.7)	22 (25.6)	41 (54.7)

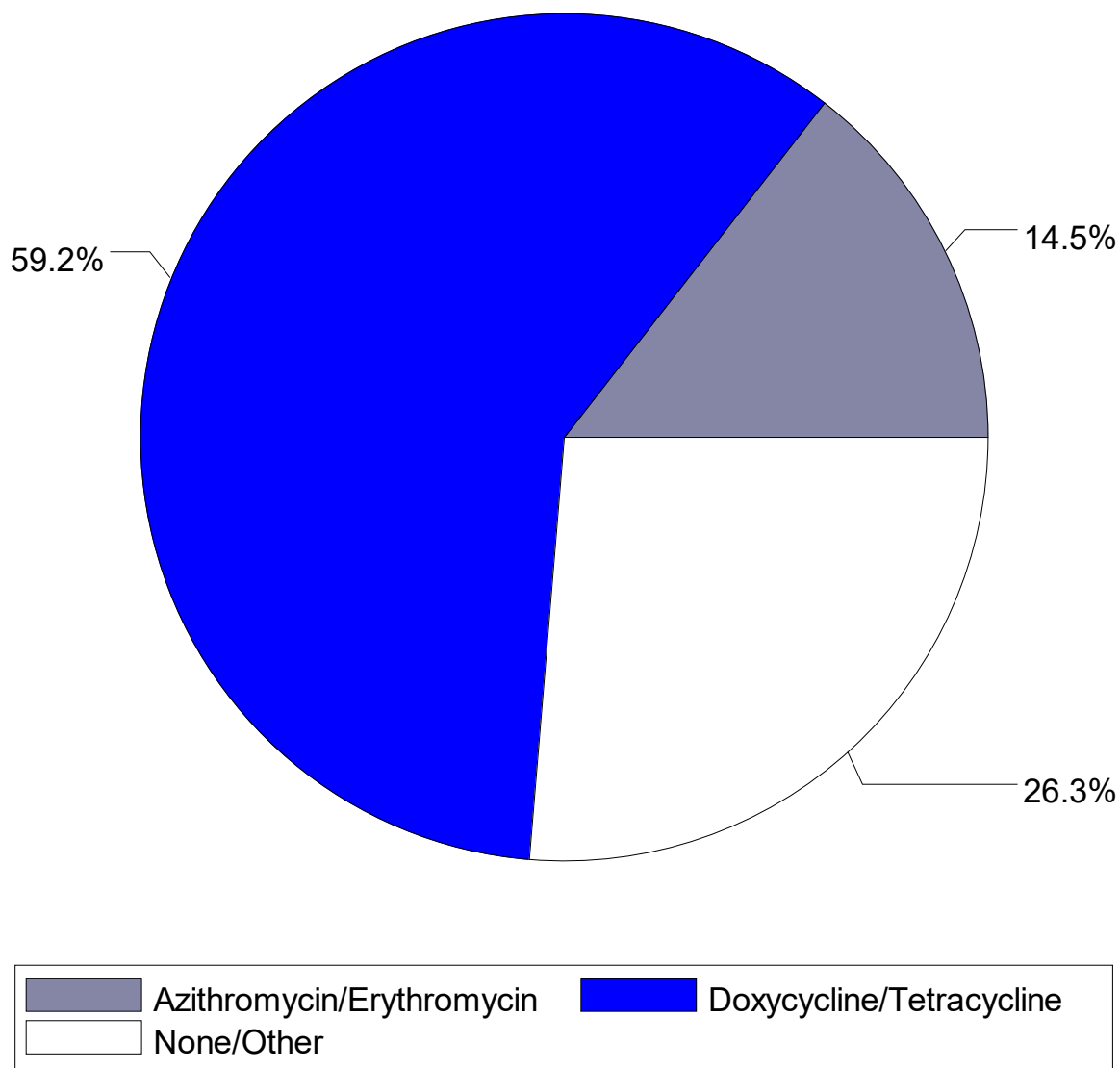
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2021



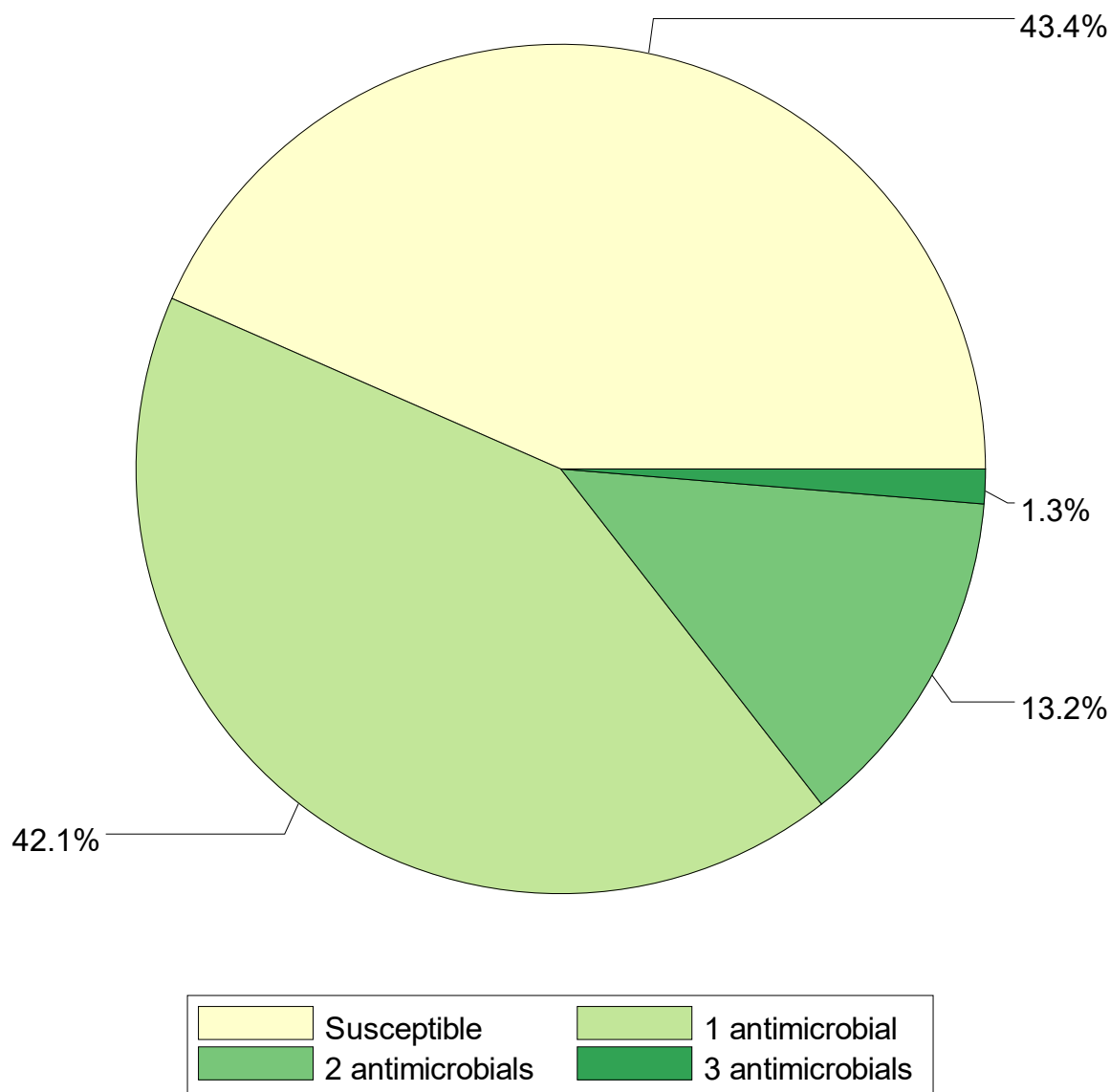
Primary Treatment	Count	Percentage
Gentamicin 240 mg	7	9.2
Ceftriaxone 500 mg	53	69.7
Ceftriaxone 1 gm	1	1.3
Other	15	19.7

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	11	14.5
Doxycycline/Tetracycline	45	59.2
None/Other	20	26.3

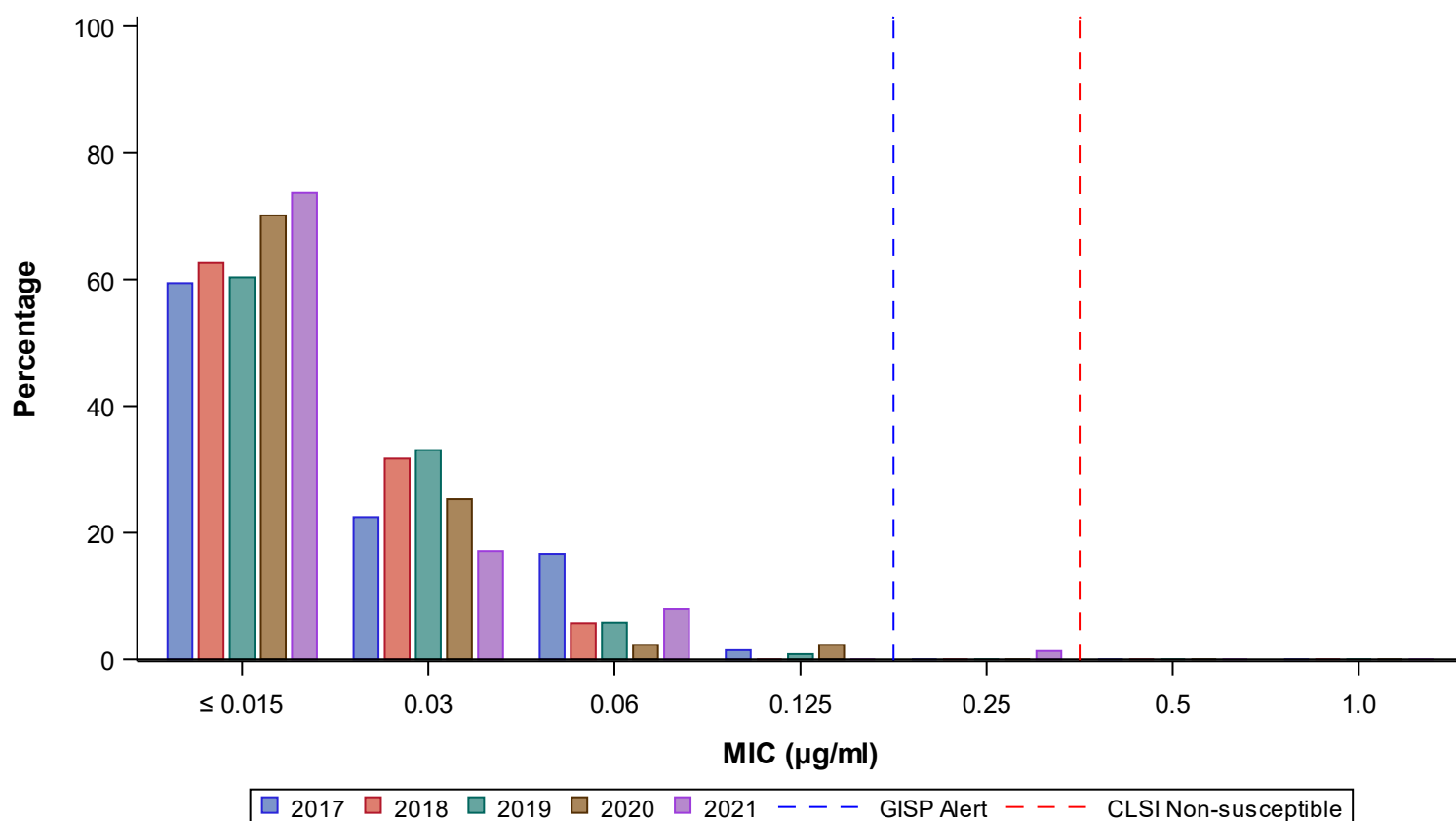
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	33	43.4
1 antimicrobial	32	42.1
2 antimicrobials	10	13.2
3 antimicrobials	1	1.3
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC $\geq$ 0.125 μ g/mL; Cefixime: MIC $\geq$ 0.25 μ g/mL; Azithromycin: MIC $\geq$ 2.0 μ g/ml; Resistance = Tetracycline: MIC $\geq$ 2.0 μ g/mL; Ciprofloxacin: MIC $\geq$ 1.0 μ g/mL; Penicillin: MIC $\geq$ 2.0 μ g/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2017-2021



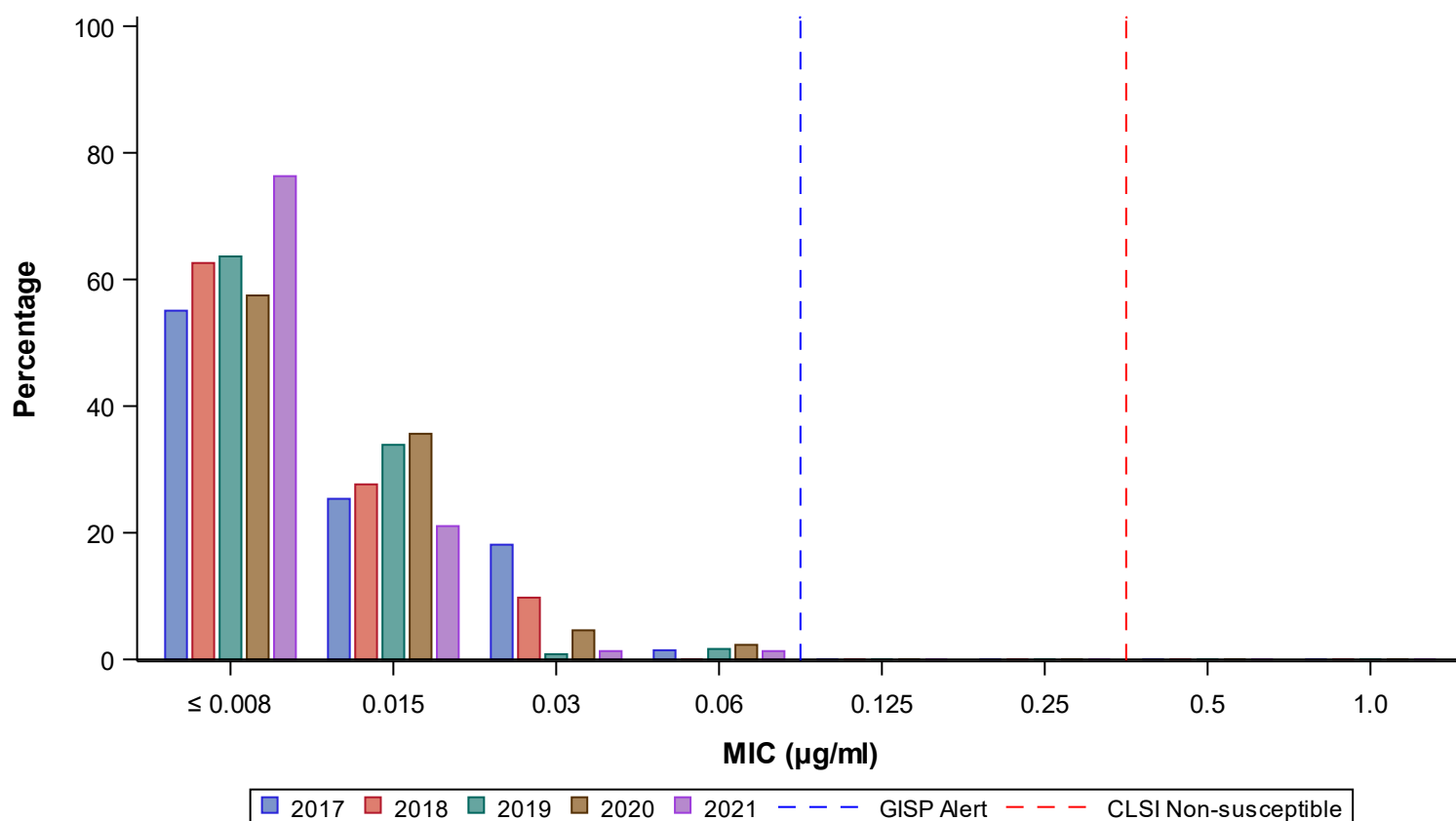
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	82 (59.4)	31 (22.5)	23 (16.7)	2 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	138
2018	77 (62.6)	39 (31.7)	7 (5.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	123
2019	73 (60.3)	40 (33.1)	7 (5.8)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	121
2020	61 (70.1)	22 (25.3)	2 (2.3)	2 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)	87
2021	56 (73.7)	13 (17.1)	6 (7.9)	0 (0.0)	1 (1.3)	0 (0.0)	0 (0.0)	76

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2017-2021



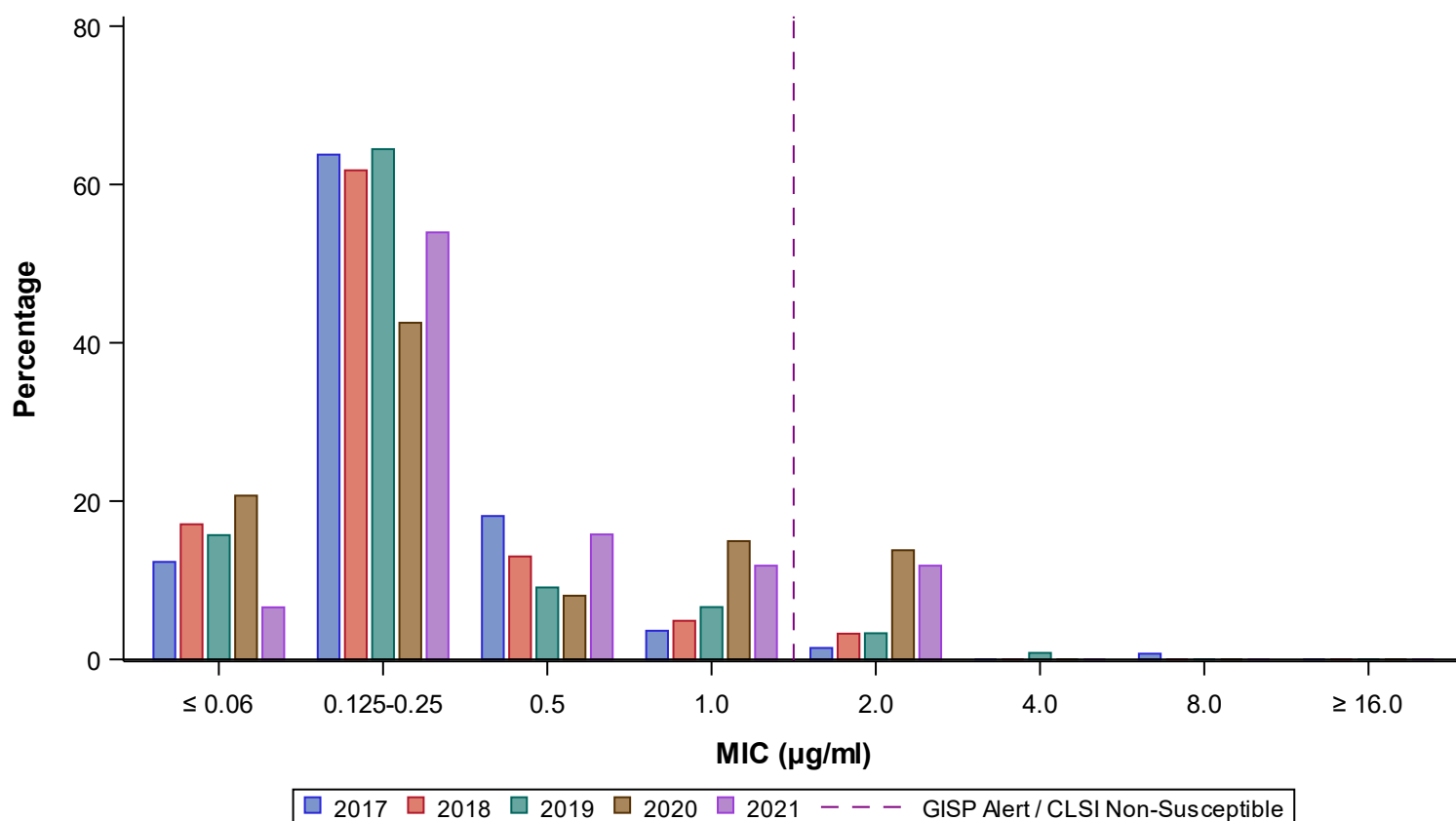
Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	76 (55.1)	35 (25.4)	25 (18.1)	2 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	138
2018	77 (62.6)	34 (27.6)	12 (9.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	123
2019	77 (63.6)	41 (33.9)	1 (0.8)	2 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	121
2020	50 (57.5)	31 (35.6)	4 (4.6)	2 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	87
2021	58 (76.3)	16 (21.1)	1 (1.3)	1 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	76

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	17 (12.3)	88 (63.8)	25 (18.1)	5 (3.6)	2 (1.4)	0 (0.0)	1 (0.7)	0 (0.0)	138
2018	21 (17.1)	76 (61.8)	16 (13.0)	6 (4.9)	4 (3.3)	0 (0.0)	0 (0.0)	0 (0.0)	123
2019	19 (15.7)	78 (64.5)	11 (9.1)	8 (6.6)	4 (3.3)	1 (0.8)	0 (0.0)	0 (0.0)	121
2020	18 (20.7)	37 (42.5)	7 (8.0)	13 (14.9)	12 (13.8)	0 (0.0)	0 (0.0)	0 (0.0)	87
2021	5 (6.6)	41 (53.9)	12 (15.8)	9 (11.8)	9 (11.8)	0 (0.0)	0 (0.0)	0 (0.0)	76

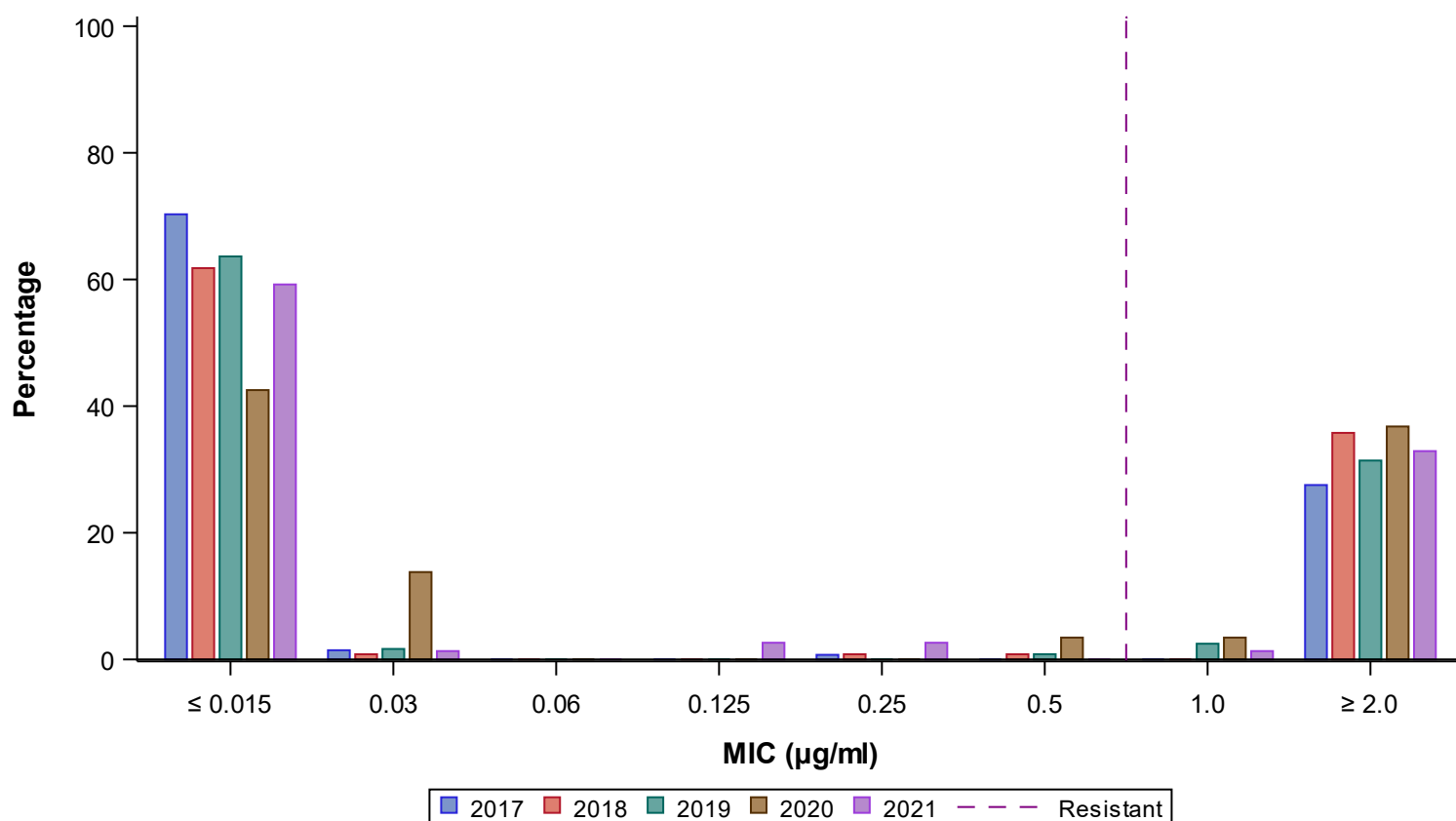
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

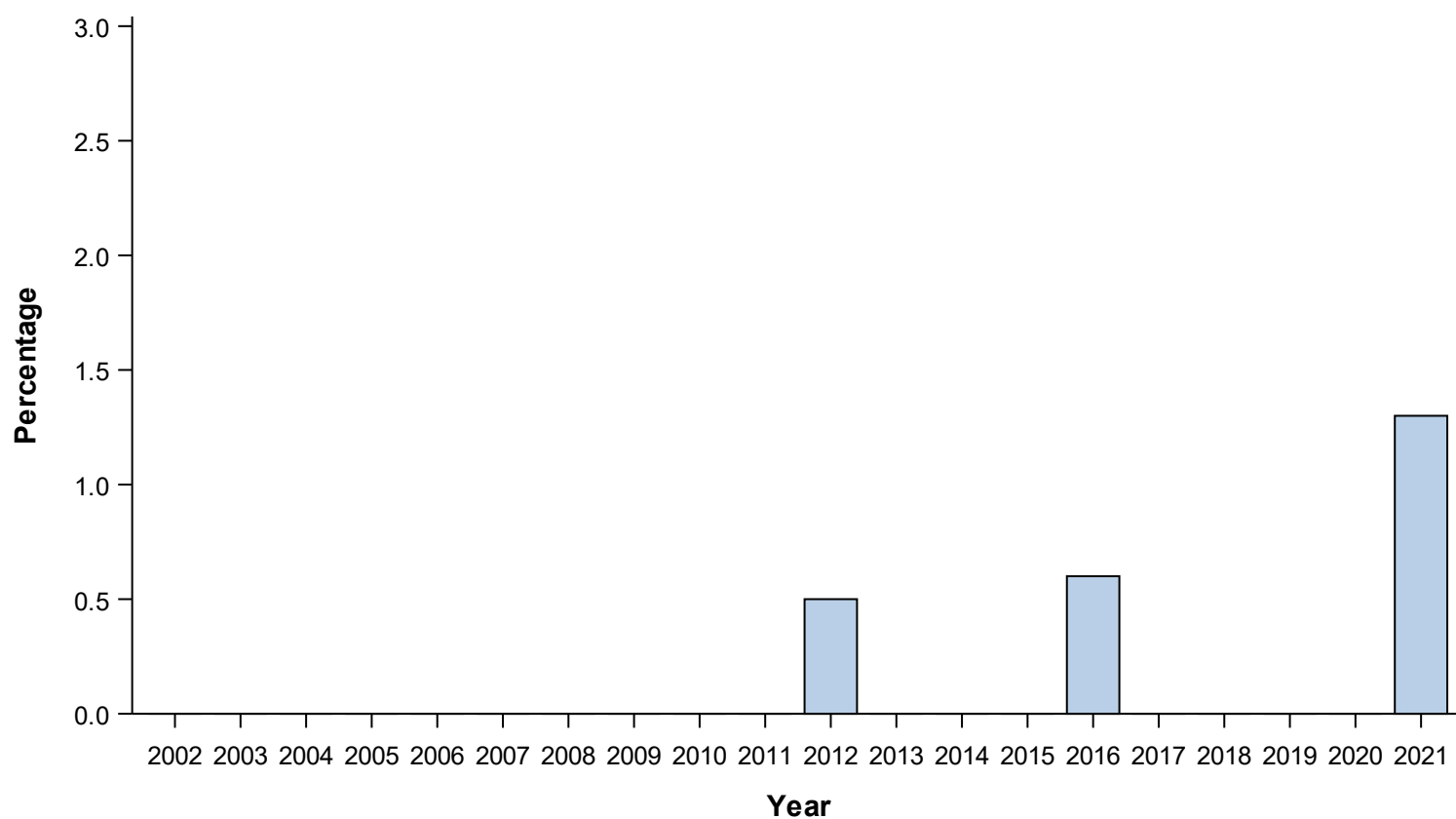
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	97 (70.3)	2 (1.4)	0 (0.0)	0 (0.0)	1 (0.7)	0 (0.0)	0 (0.0)	38 (27.5)	138
2018	76 (61.8)	1 (0.8)	0 (0.0)	0 (0.0)	1 (0.8)	1 (0.8)	0 (0.0)	44 (35.8)	123
2019	77 (63.6)	2 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	3 (2.5)	38 (31.4)	121
2020	37 (42.5)	12 (13.8)	0 (0.0)	0 (0.0)	0 (0.0)	3 (3.4)	3 (3.4)	32 (36.8)	87
2021	45 (59.2)	1 (1.3)	0 (0.0)	2 (2.6)	2 (2.6)	0 (0.0)	1 (1.3)	25 (32.9)	76

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2002-2021

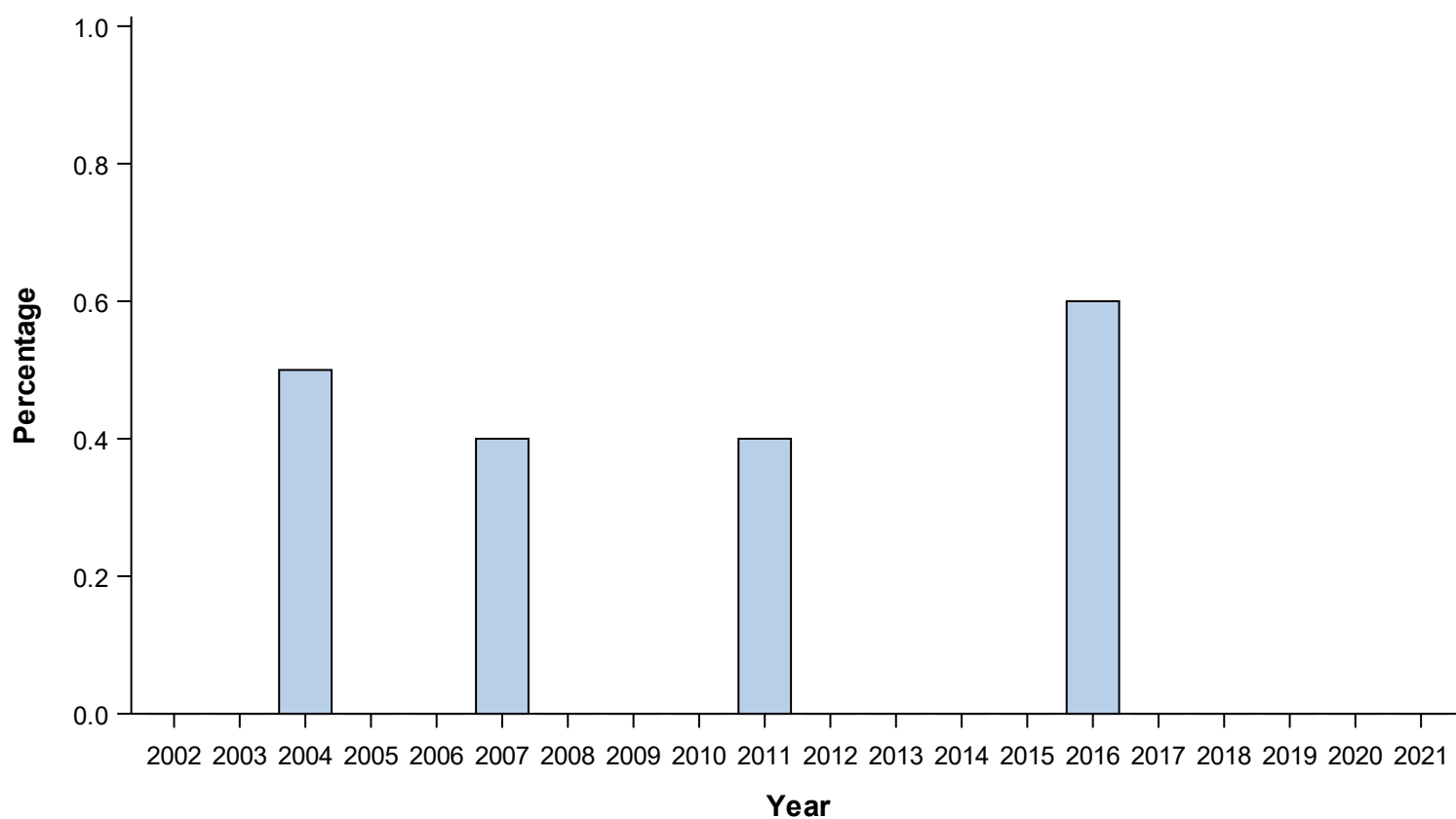


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)

Note: Cefixime elevated MIC $\geq$ 0.25 μ g/ml.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2002-2021

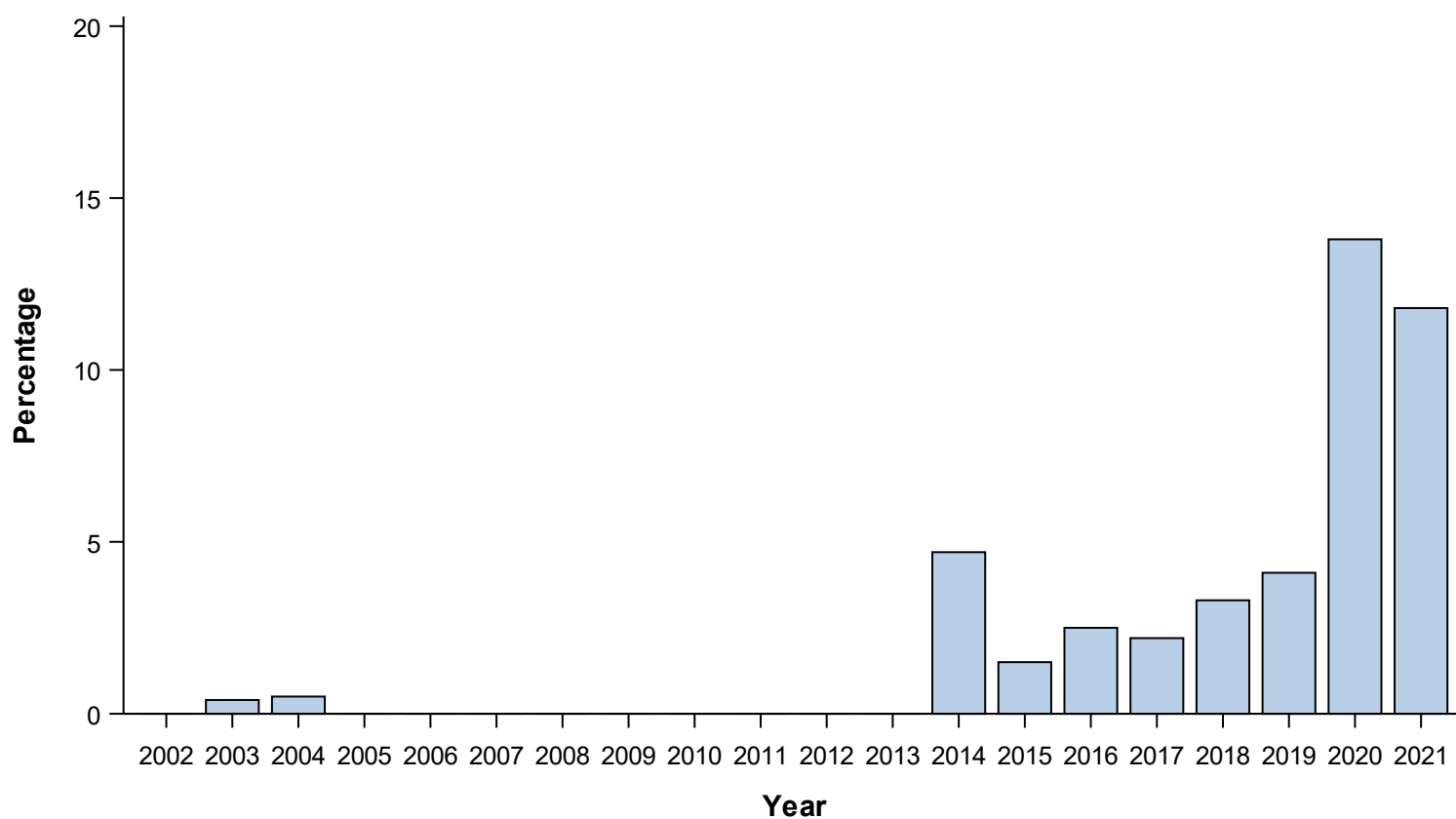


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), New Orleans, Louisiana, 2002-2021

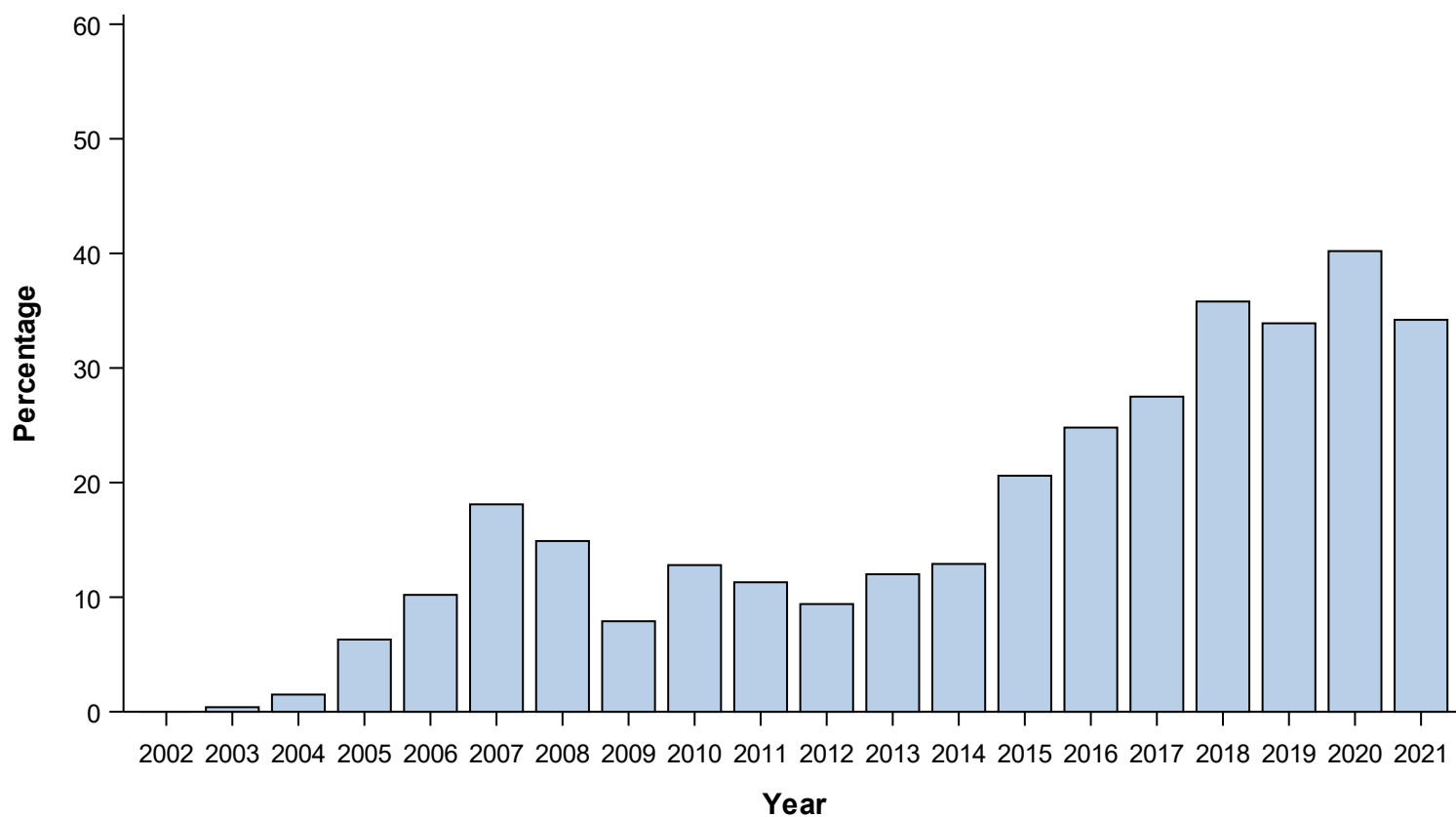


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	1 (0.4)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	8 (4.7)	2 (1.5)	4 (2.5)	3 (2.2)	4 (3.3)	5 (4.1)	12 (13.8)	9 (11.8)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
New Orleans, Louisiana, 2002-2021

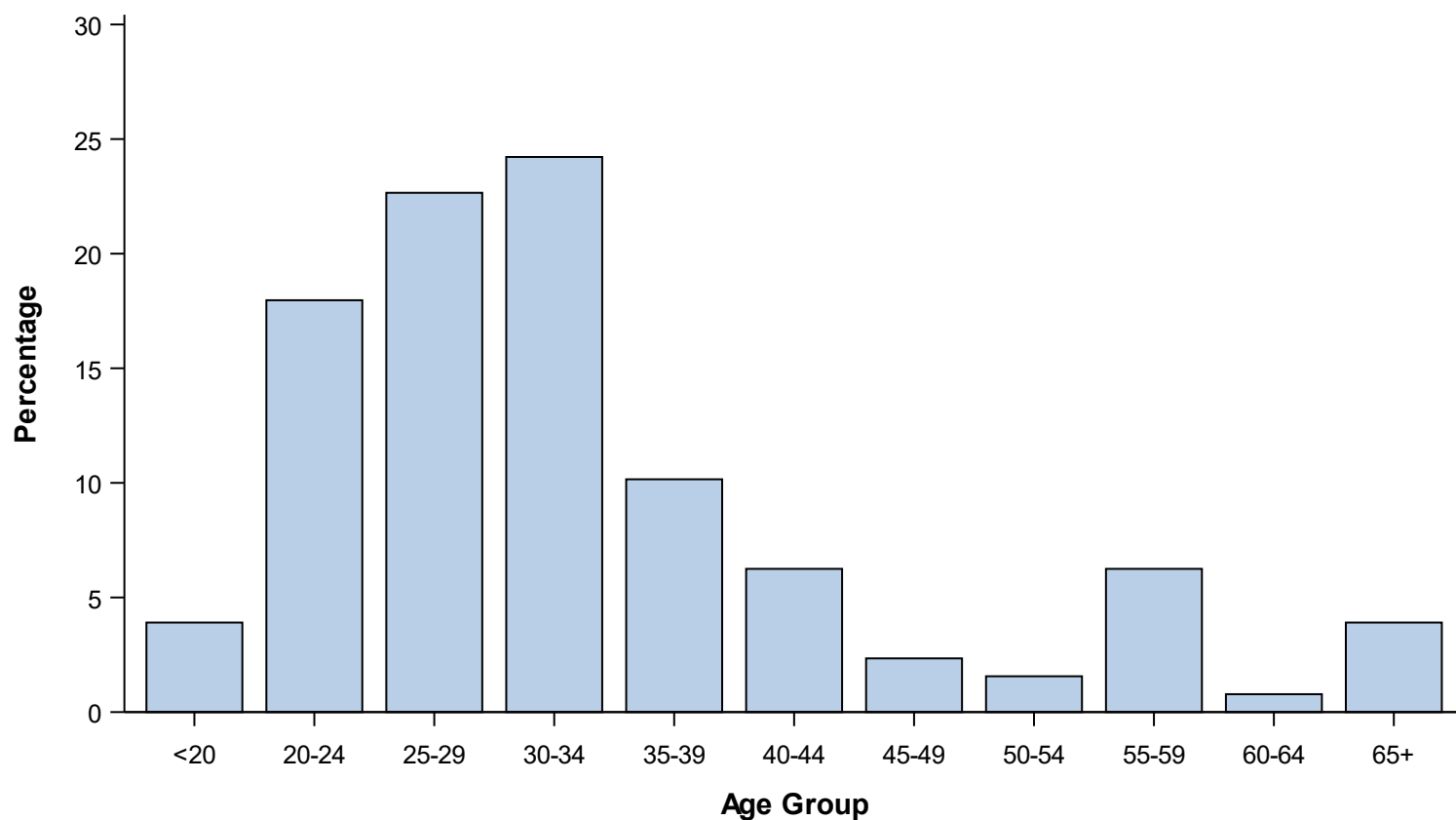


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	1 (0.4)	3 (1.5)	6 (6.3)	5 (10.2)	45 (18.1)	26 (14.9)	19 (7.9)	31 (12.8)	28 (11.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
19 (9.4)	25 (12.0)	22 (12.9)	27 (20.6)	40 (24.8)	38 (27.5)	44 (35.8)	41 (33.9)	35 (40.2)	26 (34.2)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

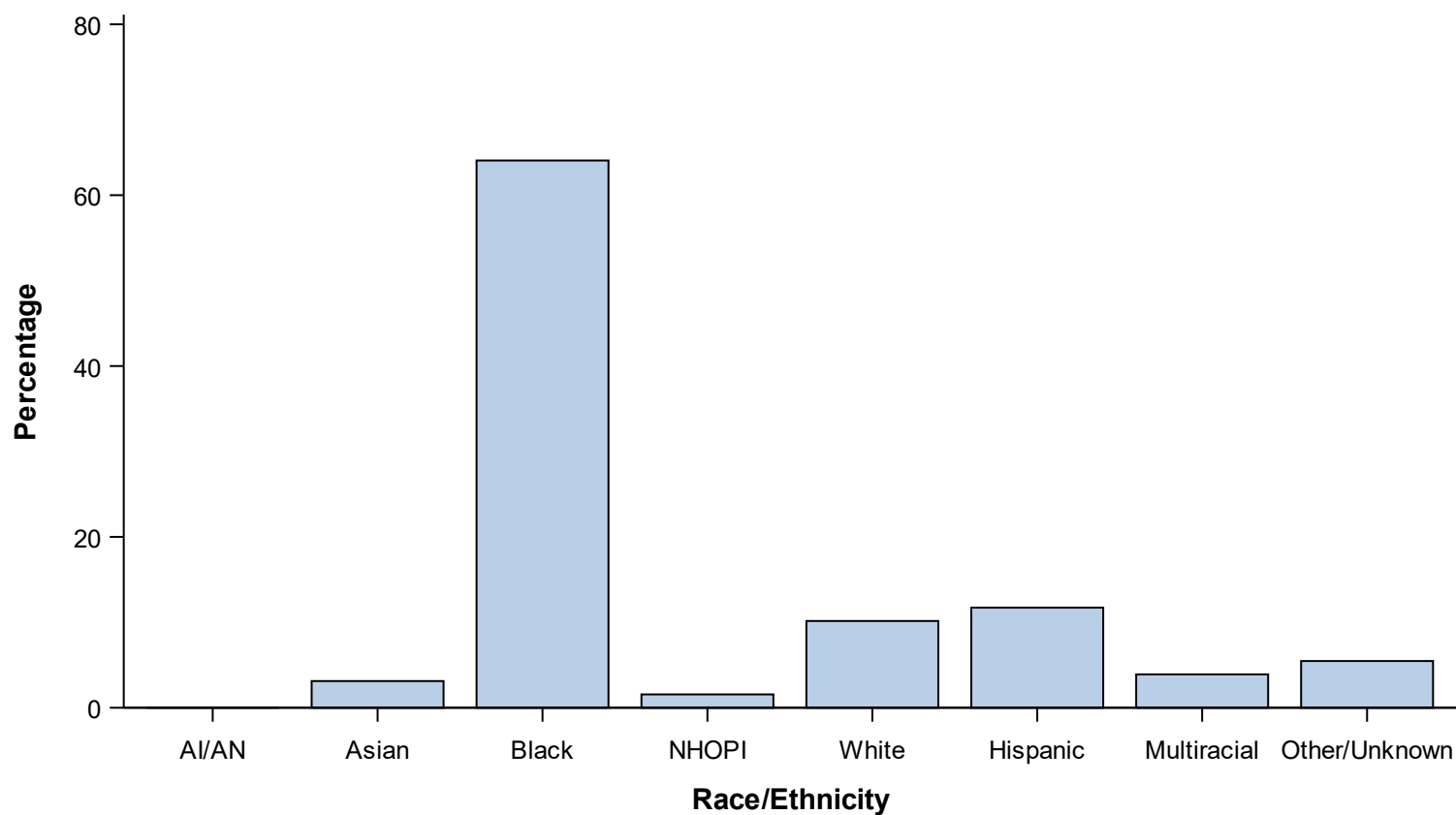
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
5 (3.9)	23 (18.0)	29 (22.7)	31 (24.2)	13 (10.2)	8 (6.3)	3 (2.3)	2 (1.6)	8 (6.3)	1 (0.8)	5 (3.9)	128

Note: Cases with unknown age were excluded.

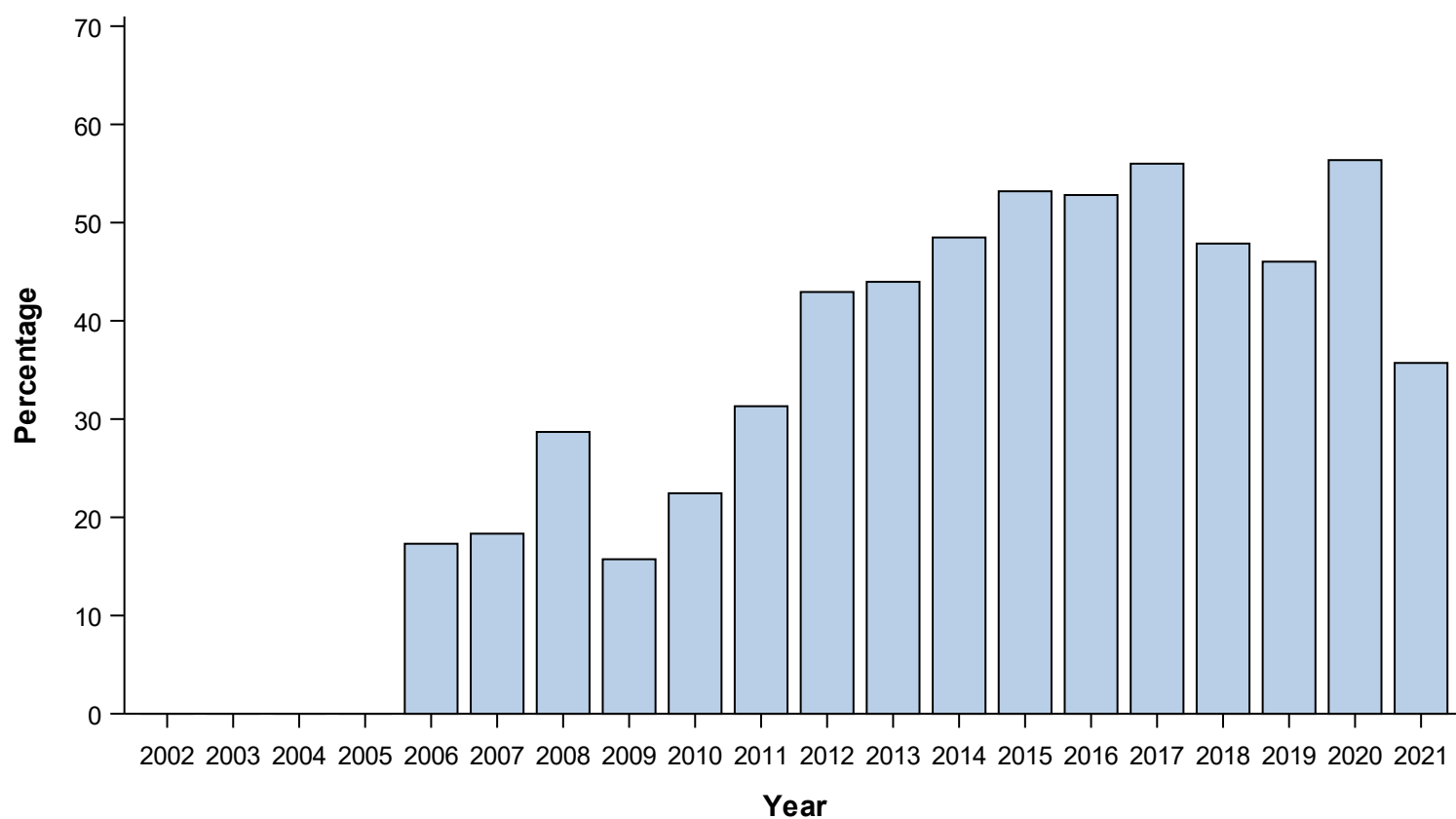
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	4 (3.1)	82 (64.1)	2 (1.6)	13 (10.2)	15 (11.7)	5 (3.9)	7 (5.5)	128

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
New York City, New York, 2002-2021

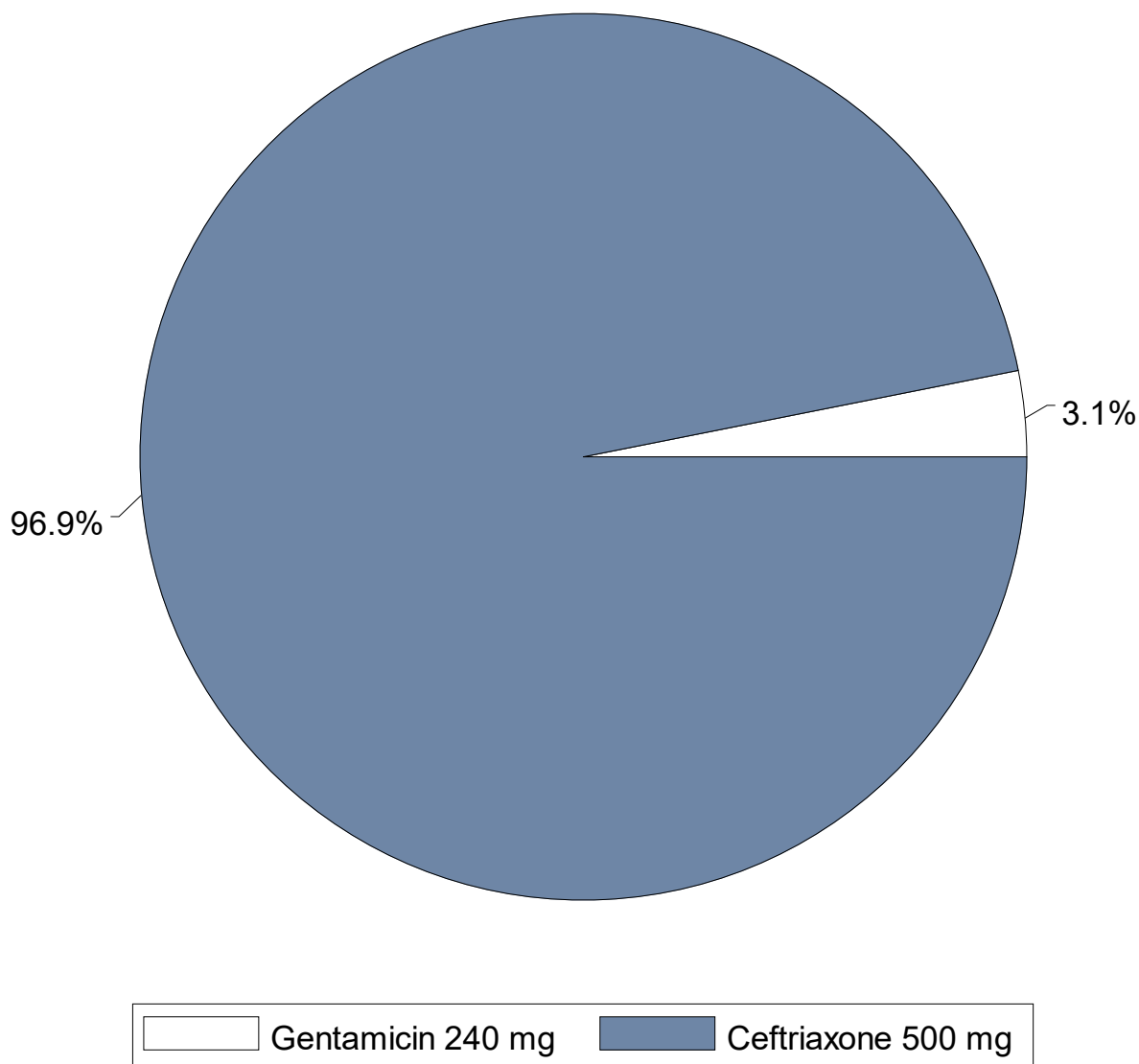


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	9 (17.3)	33 (18.3)	35 (28.7)	28 (15.7)	44 (22.4)	67 (31.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
76 (42.9)	62 (44.0)	64 (48.5)	75 (53.2)	94 (52.8)	112 (56.0)	101 (47.9)	110 (46.0)	31 (56.4)	45 (35.7)

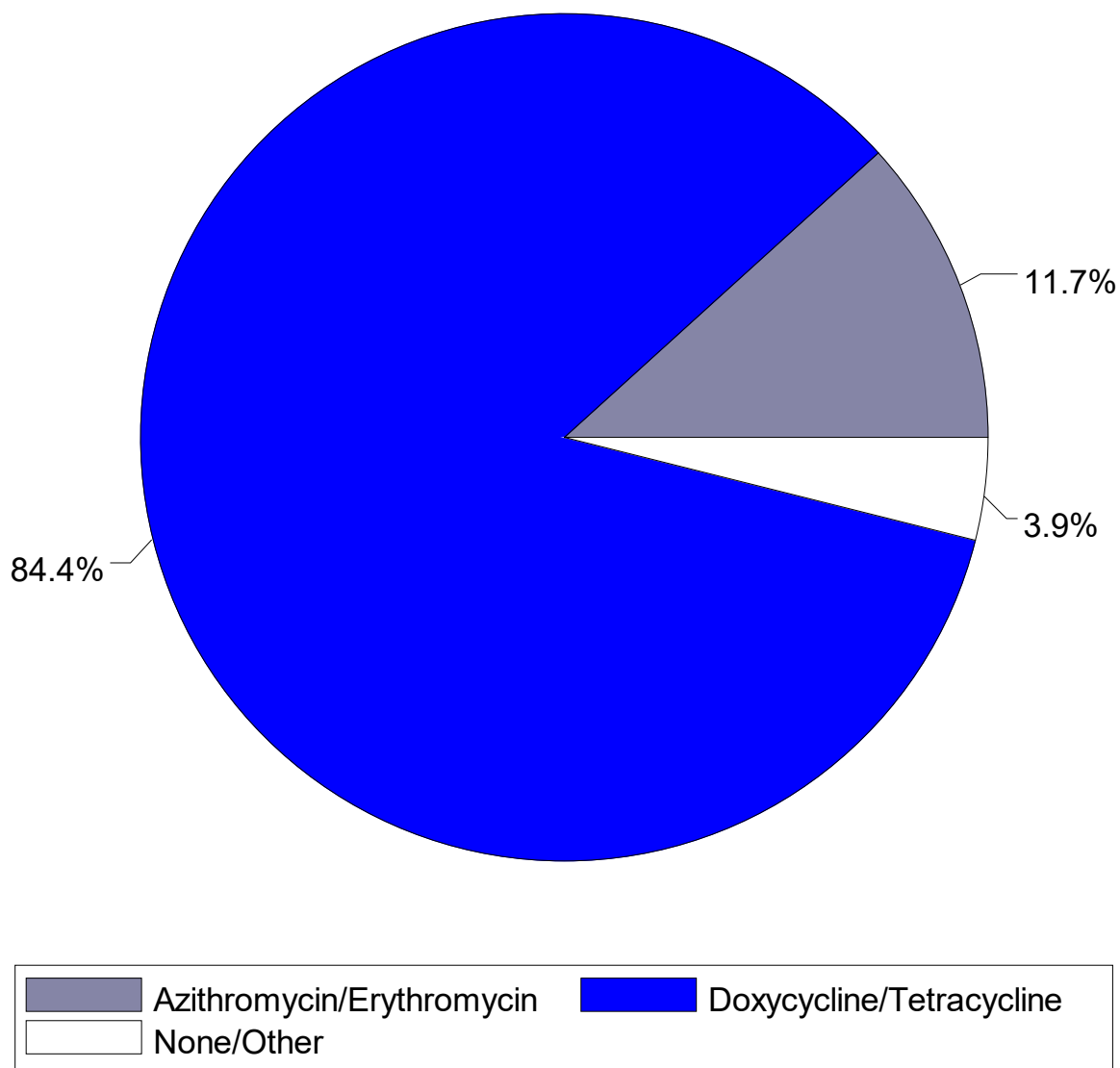
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.
Site participated in GISP during 2006-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2021



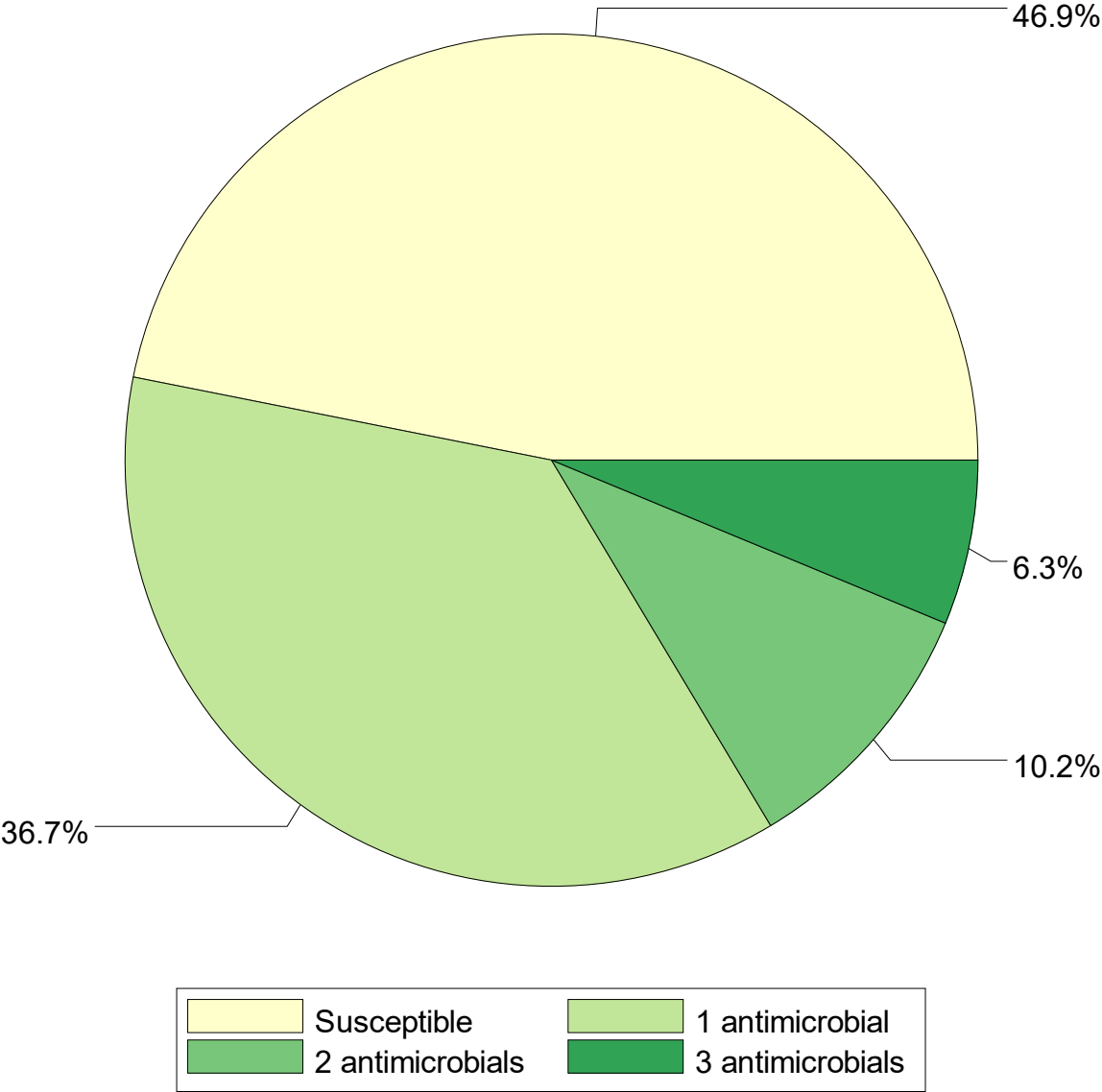
Primary Treatment	Count	Percentage
Gentamicin 240 mg	4	3.1
Ceftriaxone 500 mg	124	96.9

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	15	11.7
Doxycycline/Tetracycline	108	84.4
None/Other	5	3.9

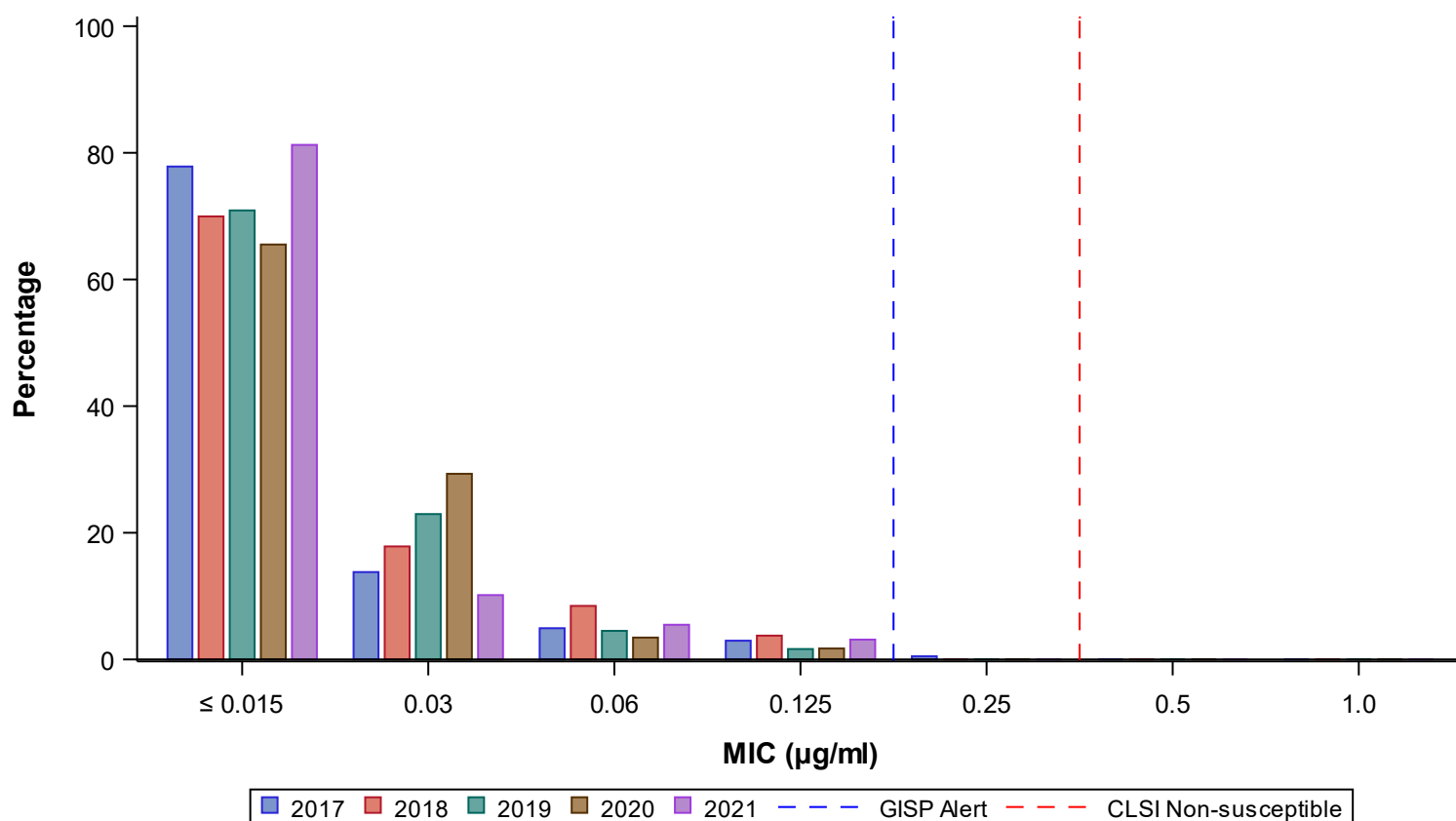
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	60	46.9
1 antimicrobial	47	36.7
2 antimicrobials	13	10.2
3 antimicrobials	8	6.3
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 µg/mL; Cefixime: MIC ≥ 0.25 µg/mL; Azithromycin: MIC ≥ 2.0 µg/ml; Resistance = Tetracycline: MIC ≥ 2.0 µg/mL; Ciprofloxacin: MIC ≥ 1.0 µg/mL; Penicillin: MIC ≥ 2.0 µg/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2017-2021



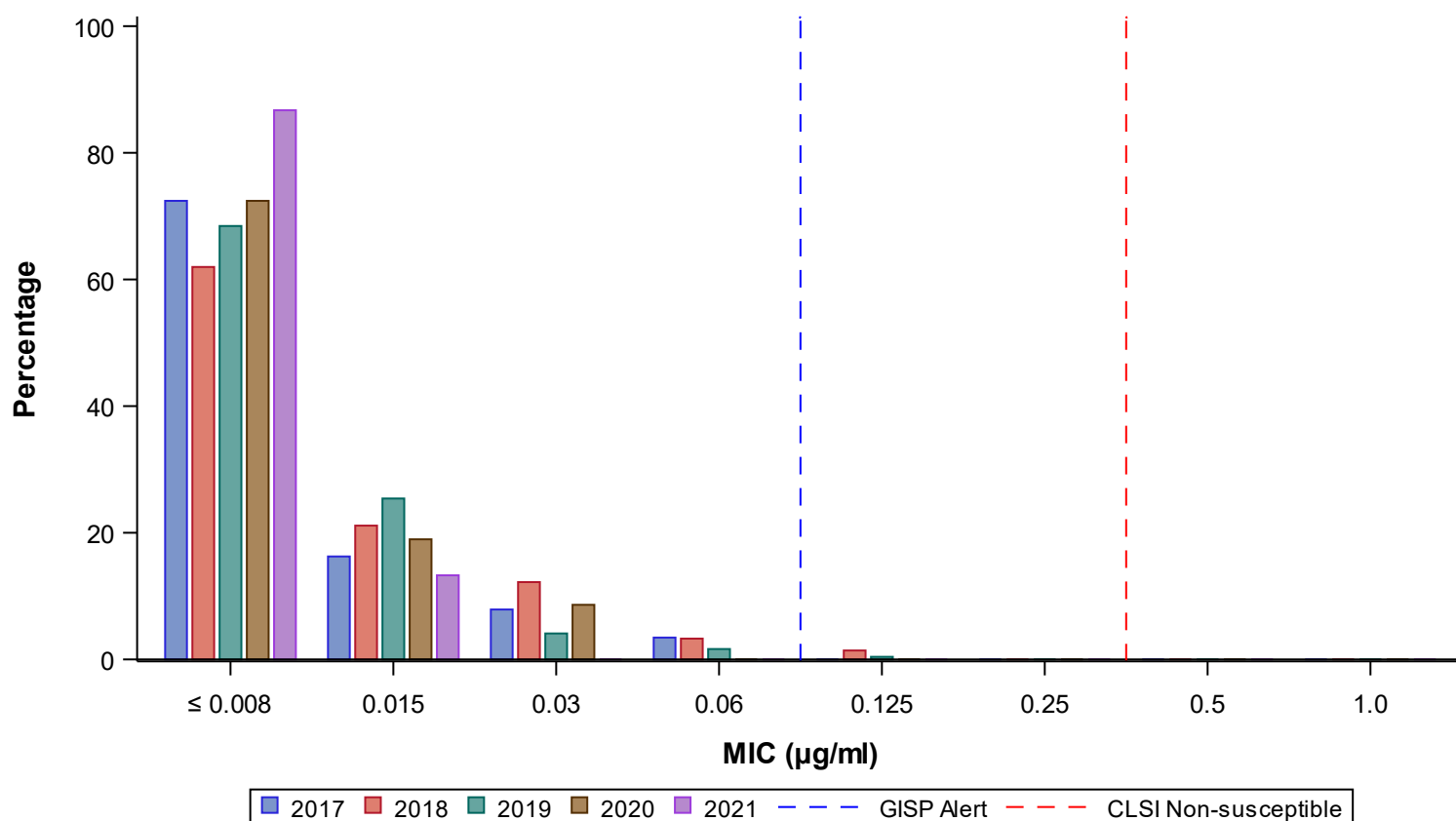
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	158 (77.8)	28 (13.8)	10 (4.9)	6 (3.0)	1 (0.5)	0 (0.0)	0 (0.0)	203
2018	149 (70.0)	38 (17.8)	18 (8.5)	8 (3.8)	0 (0.0)	0 (0.0)	0 (0.0)	213
2019	173 (70.9)	56 (23.0)	11 (4.5)	4 (1.6)	0 (0.0)	0 (0.0)	0 (0.0)	244
2020	38 (65.5)	17 (29.3)	2 (3.4)	1 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	58
2021	104 (81.3)	13 (10.2)	7 (5.5)	4 (3.1)	0 (0.0)	0 (0.0)	0 (0.0)	128

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	147 (72.4)	33 (16.3)	16 (7.9)	7 (3.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	203
2018	132 (62.0)	45 (21.1)	26 (12.2)	7 (3.3)	3 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	213
2019	167 (68.4)	62 (25.4)	10 (4.1)	4 (1.6)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	244
2020	42 (72.4)	11 (19.0)	5 (8.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	58
2021	111 (86.7)	17 (13.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	128

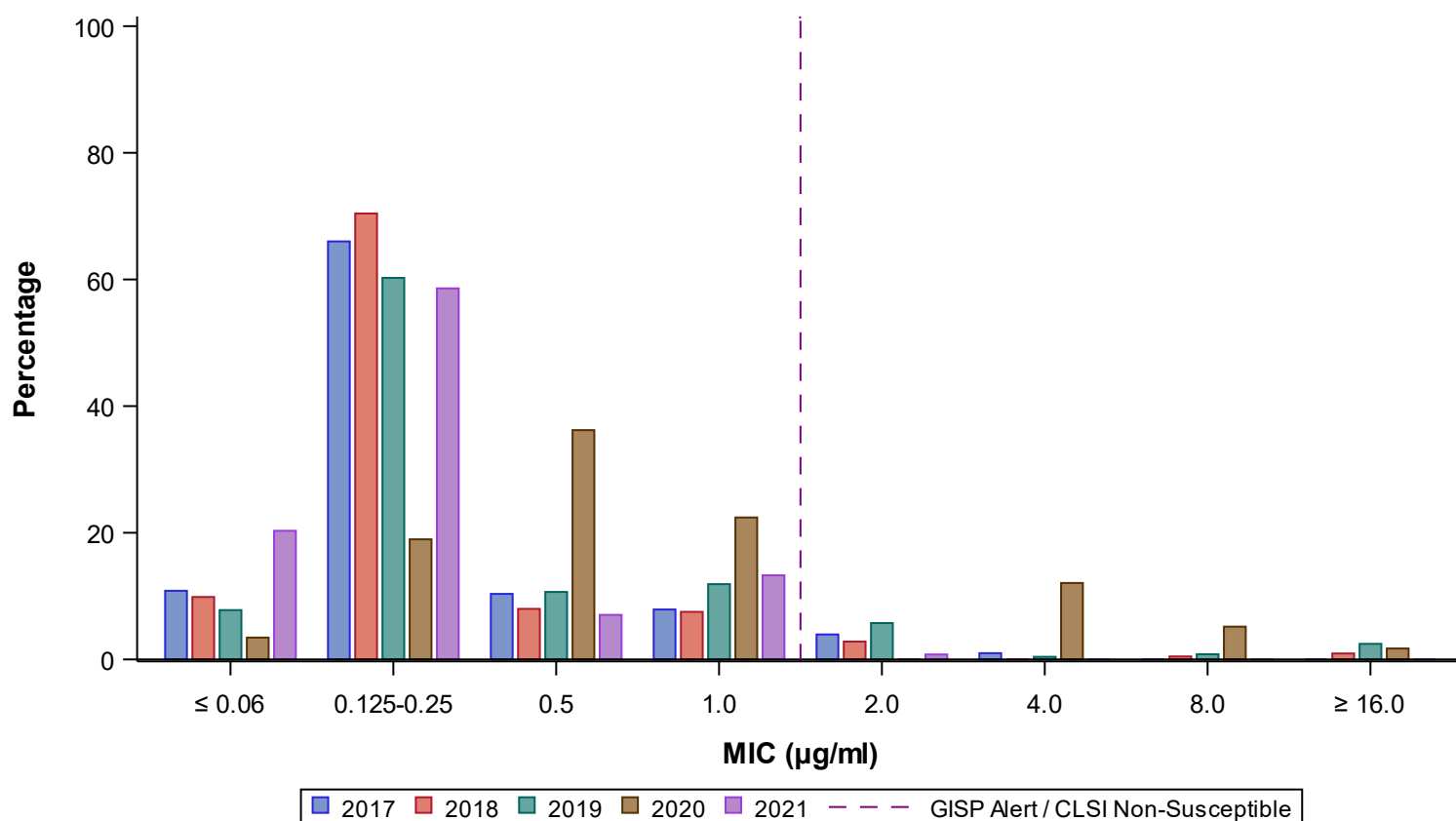
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	22 (10.8)	134 (66.0)	21 (10.3)	16 (7.9)	8 (3.9)	2 (1.0)	0 (0.0)	0 (0.0)	203
2018	21 (9.9)	150 (70.4)	17 (8.0)	16 (7.5)	6 (2.8)	0 (0.0)	1 (0.5)	2 (0.9)	213
2019	19 (7.8)	147 (60.2)	26 (10.7)	29 (11.9)	14 (5.7)	1 (0.4)	2 (0.8)	6 (2.5)	244
2020	2 (3.4)	11 (19.0)	21 (36.2)	13 (22.4)	0 (0.0)	7 (12.1)	3 (5.2)	1 (1.7)	58
2021	26 (20.3)	75 (58.6)	9 (7.0)	17 (13.3)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	128

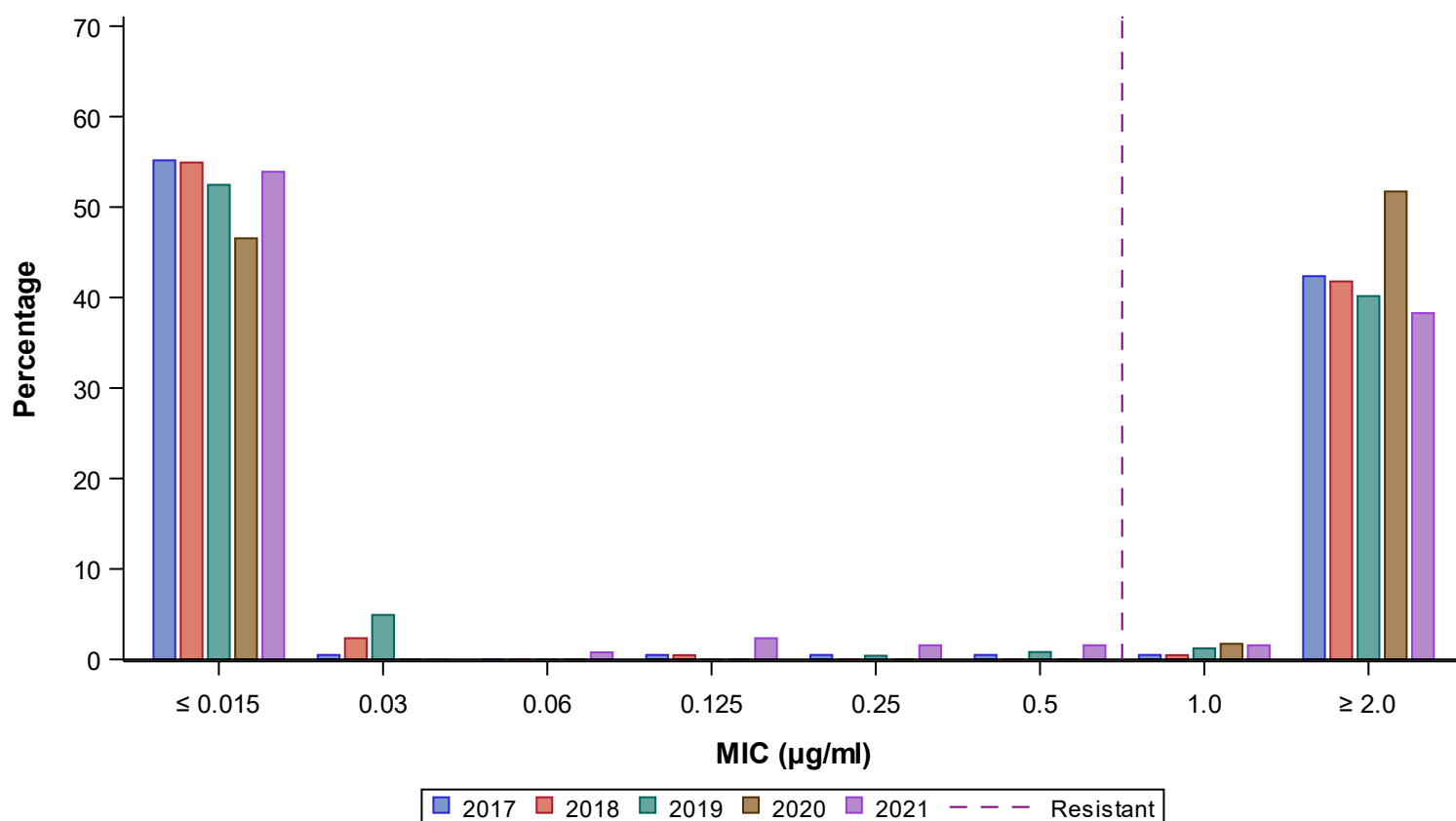
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

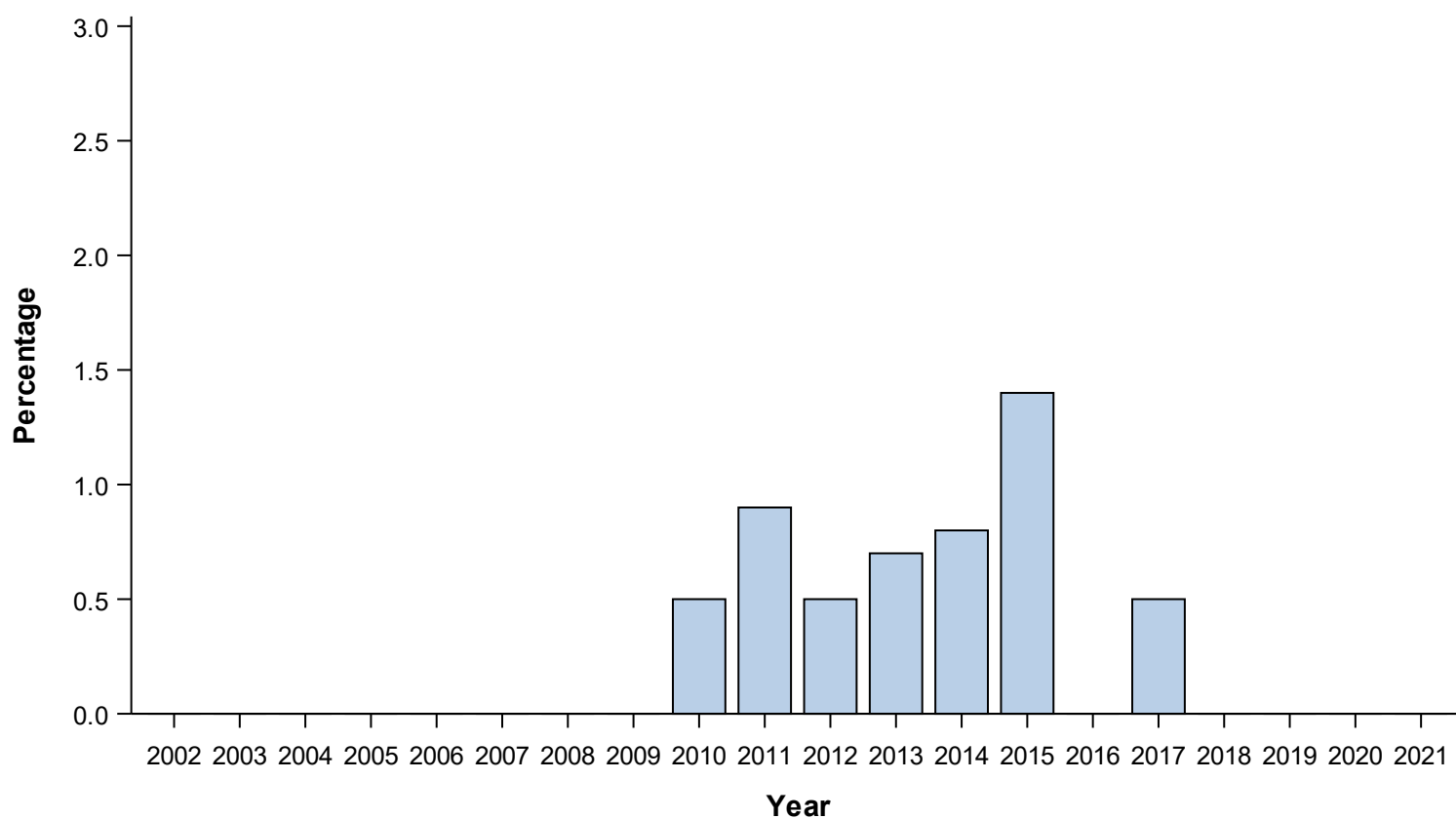
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	112 (55.2)	1 (0.5)	0 (0.0)	1 (0.5)	1 (0.5)	1 (0.5)	1 (0.5)	86 (42.4)	203
2018	117 (54.9)	5 (2.3)	0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)	1 (0.5)	89 (41.8)	213
2019	128 (52.5)	12 (4.9)	0 (0.0)	0 (0.0)	1 (0.4)	2 (0.8)	3 (1.2)	98 (40.2)	244
2020	27 (46.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.7)	30 (51.7)	58
2021	69 (53.9)	0 (0.0)	1 (0.8)	3 (2.3)	2 (1.6)	2 (1.6)	2 (1.6)	49 (38.3)	128

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2002-2021



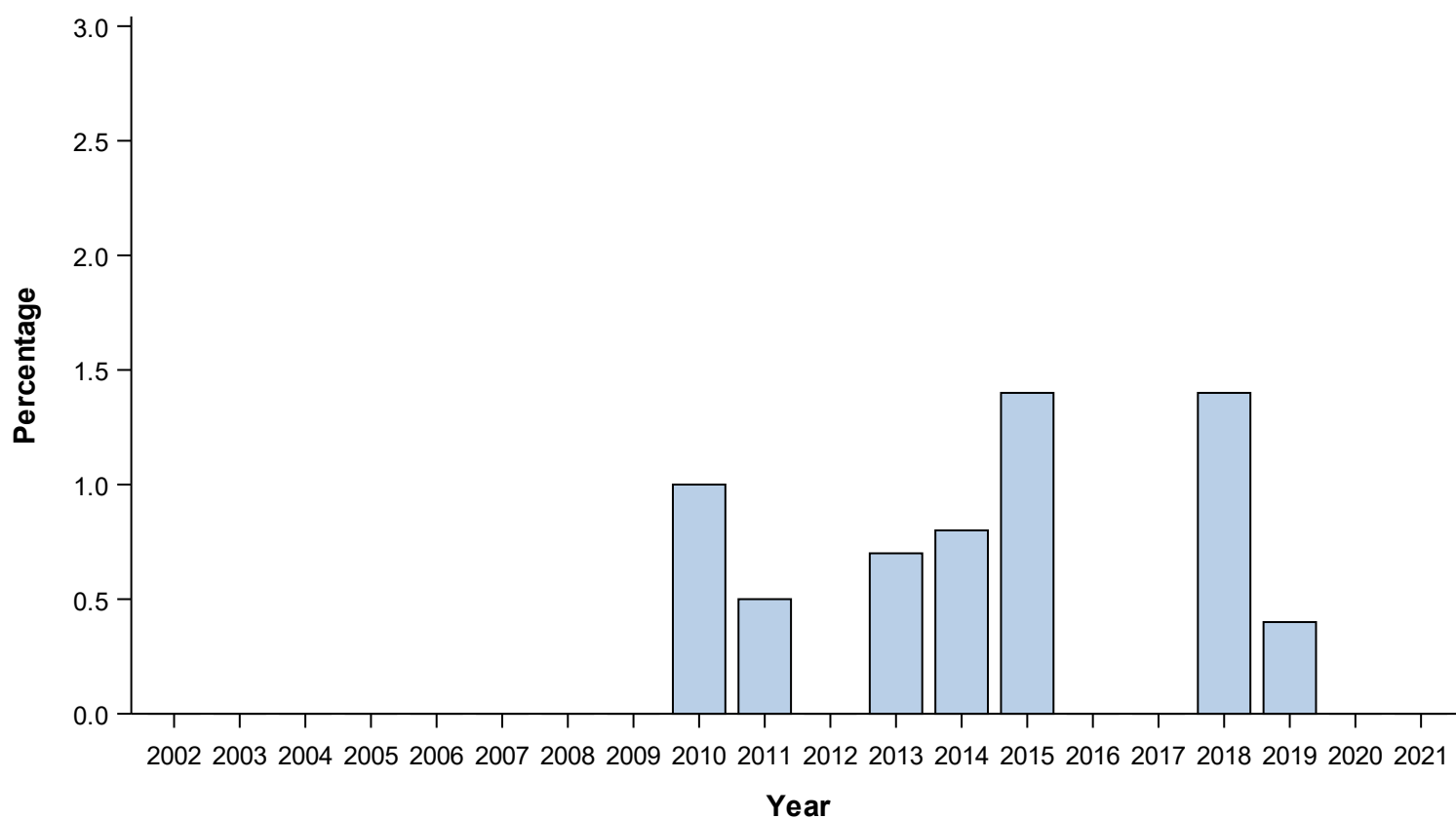
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)	2 (0.9)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.5)	1 (0.7)	1 (0.8)	2 (1.4)	0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2006-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2002-2021



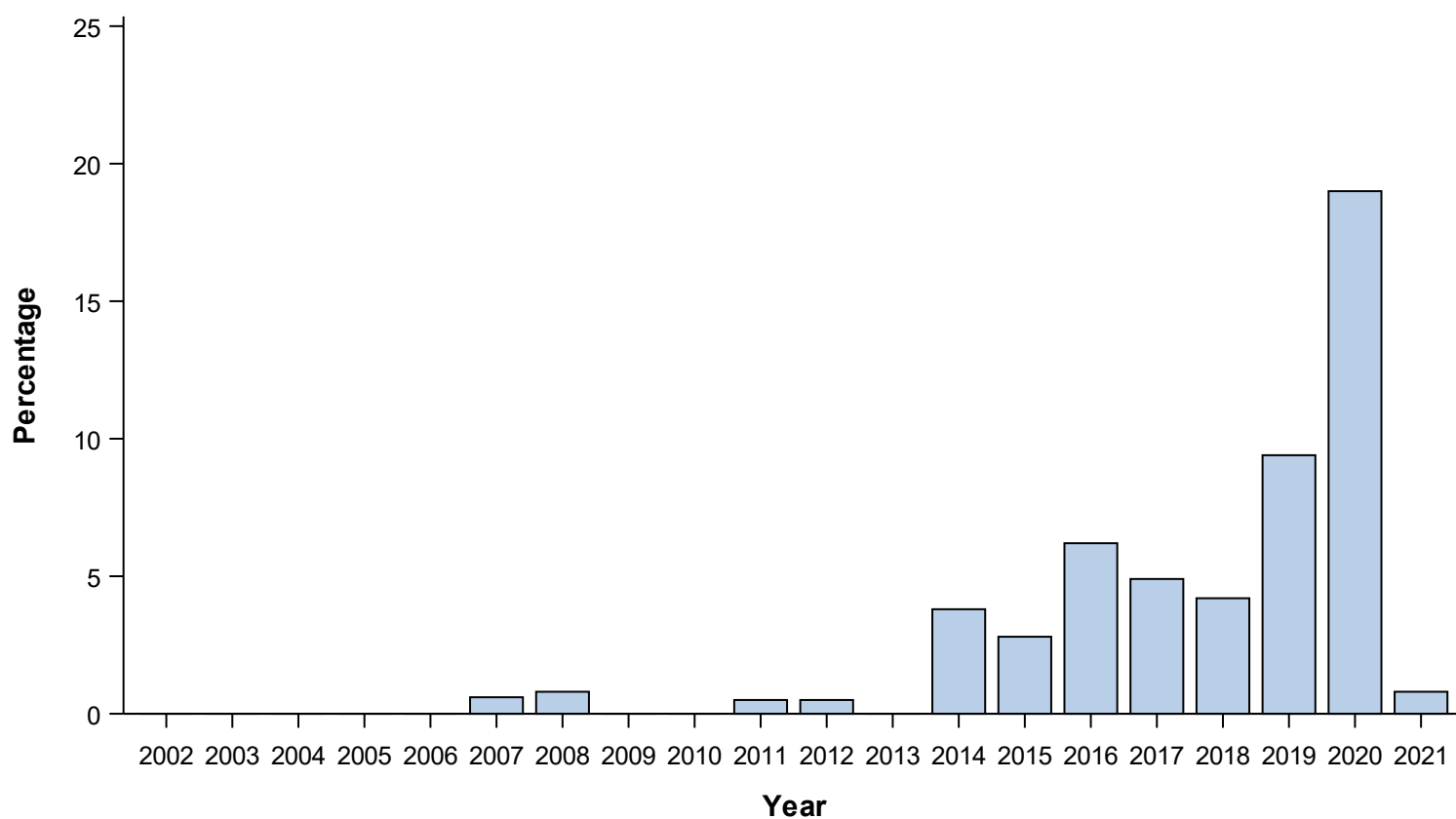
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.0)	1 (0.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	1 (0.7)	1 (0.8)	2 (1.4)	0 (0.0)	0 (0.0)	3 (1.4)	1 (0.4)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2006-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), New York City, New York, 2002-2021



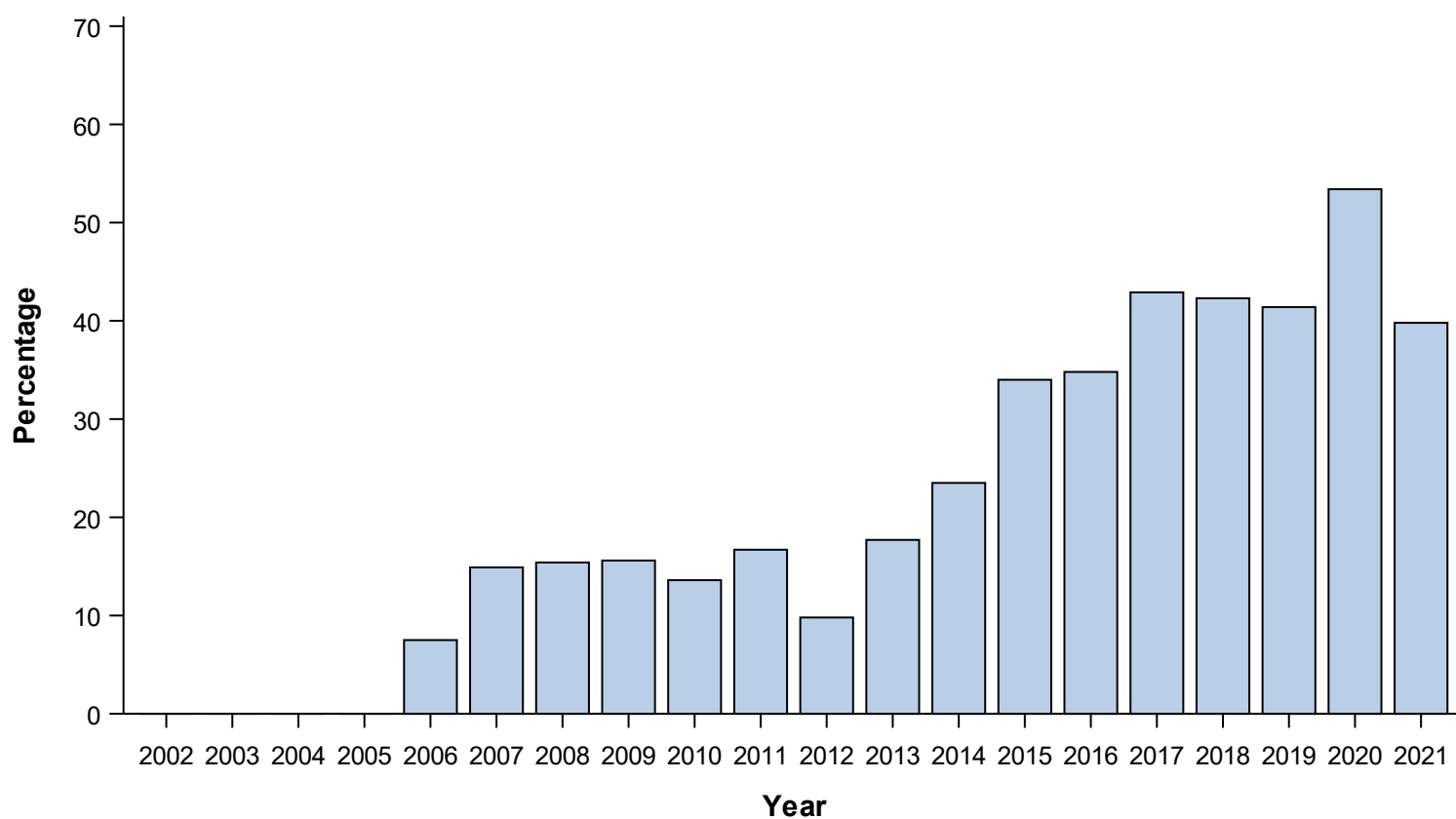
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)	1 (0.8)	0 (0.0)	0 (0.0)	1 (0.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.5)	0 (0.0)	5 (3.8)	4 (2.8)	11 (6.2)	10 (4.9)	9 (4.2)	23 (9.4)	11 (19.0)	1 (0.8)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2006-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
New York City, New York, 2002-2021



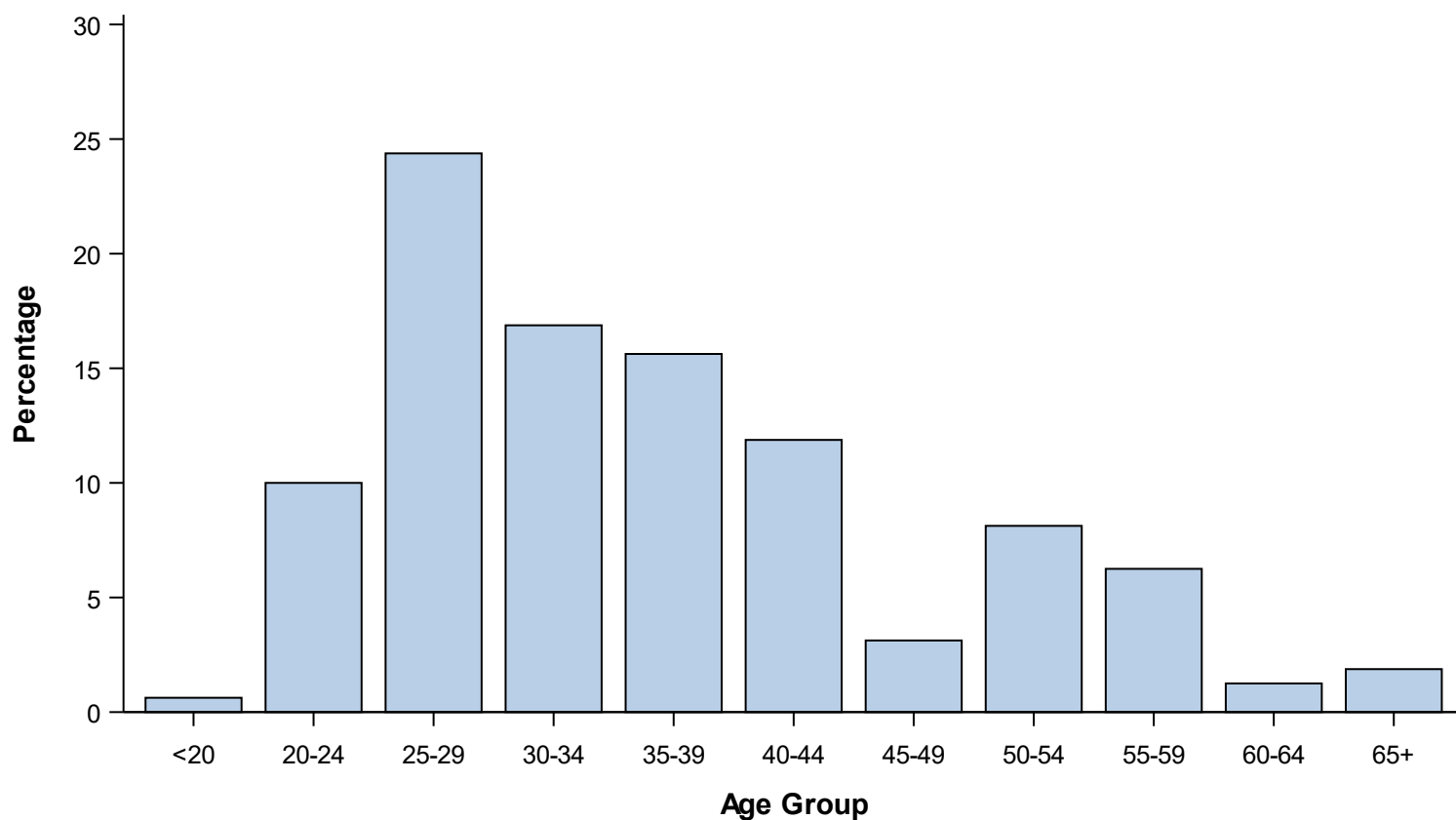
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (7.5)	27 (14.9)	19 (15.4)	28 (15.6)	27 (13.6)	36 (16.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
18 (9.8)	25 (17.7)	31 (23.5)	48 (34.0)	62 (34.8)	87 (42.9)	90 (42.3)	101 (41.4)	31 (53.4)	51 (39.8)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2006-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

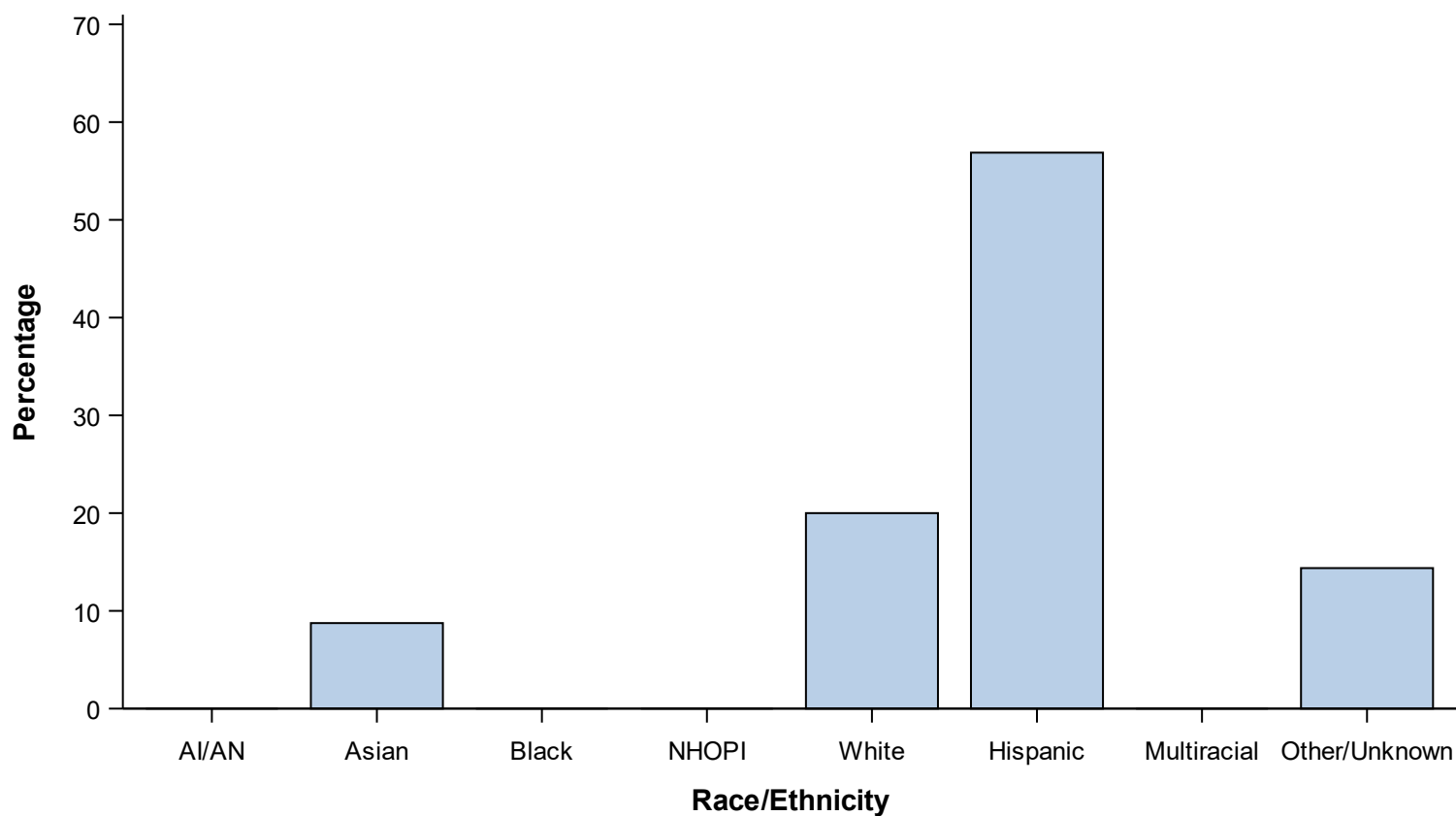
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
1 (0.6)	16 (10.0)	39 (24.4)	27 (16.9)	25 (15.6)	19 (11.9)	5 (3.1)	13 (8.1)	10 (6.3)	2 (1.3)	3 (1.9)	160

Note: Cases with unknown age were excluded.

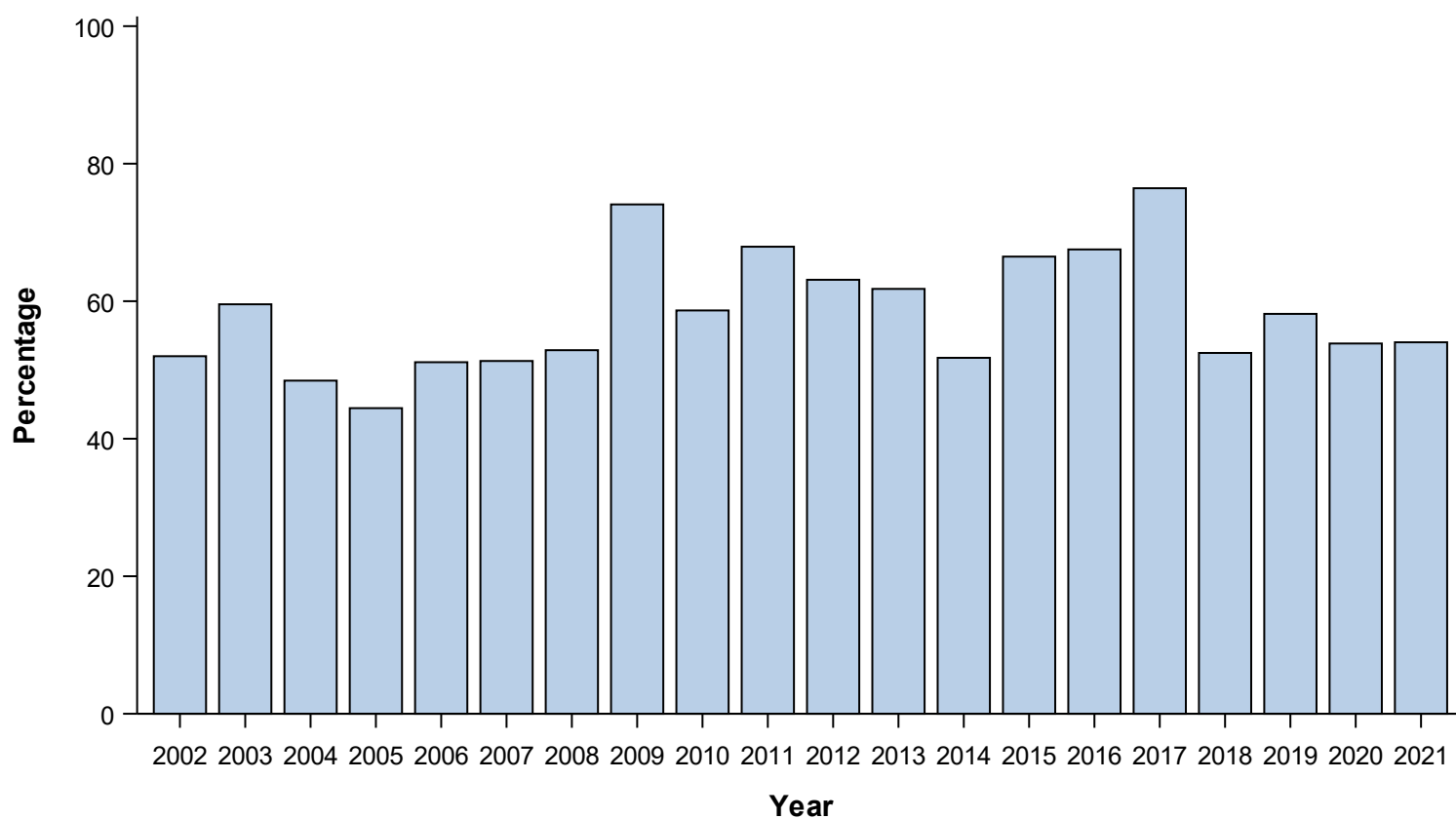
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	14 (8.8)	0 (0.0)	0 (0.0)	32 (20.0)	91 (56.9)	0 (0.0)	23 (14.4)	160

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Orange County, California, 2002-2021

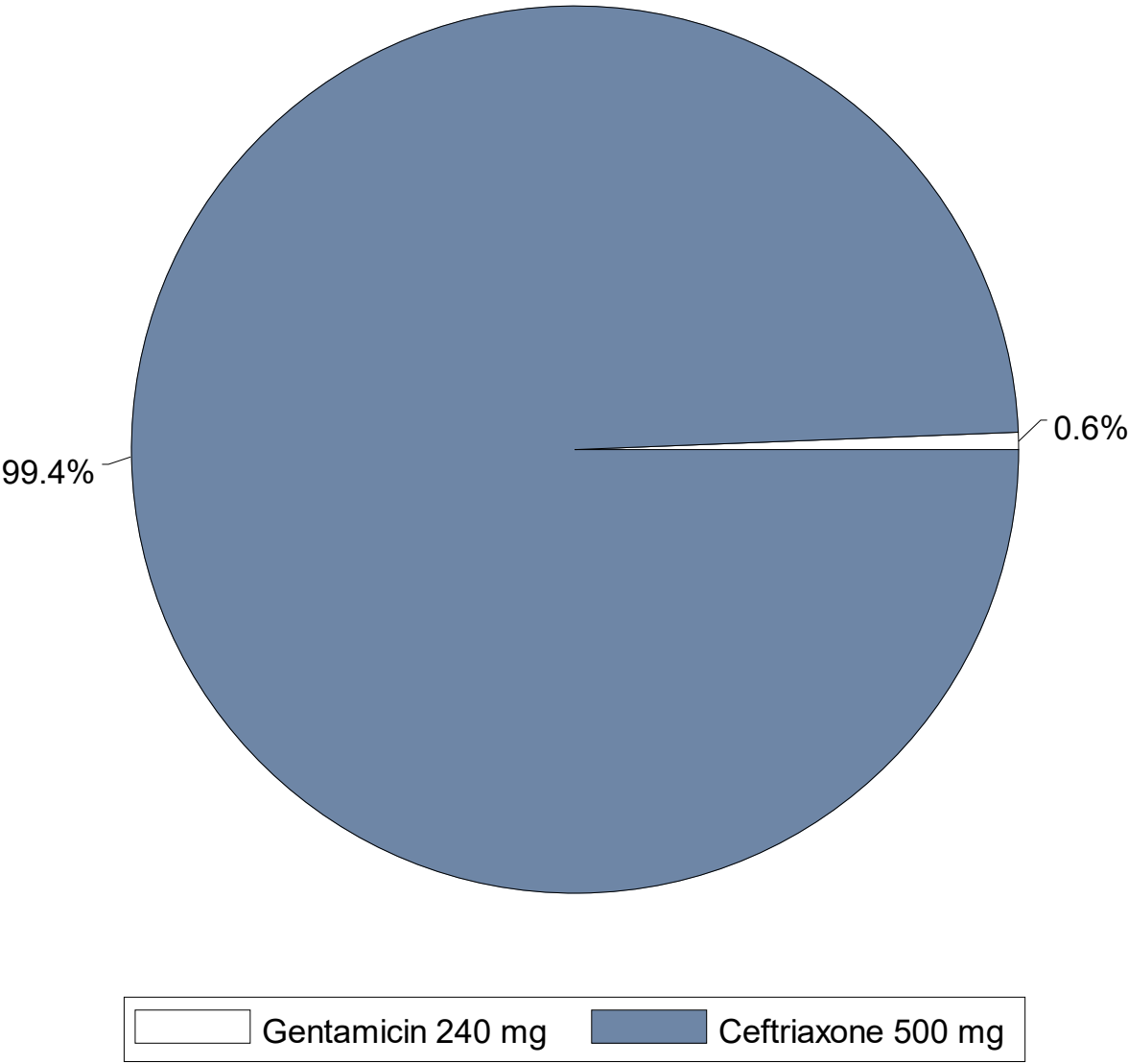


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
91 (52.0)	106 (59.6)	78 (48.4)	52 (44.4)	68 (51.1)	59 (51.3)	46 (52.9)	60 (74.1)	61 (58.7)	72 (67.9)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
77 (63.1)	76 (61.8)	88 (51.8)	121 (66.5)	131 (67.5)	107 (76.4)	53 (52.5)	82 (58.2)	84 (53.8)	47 (54.0)

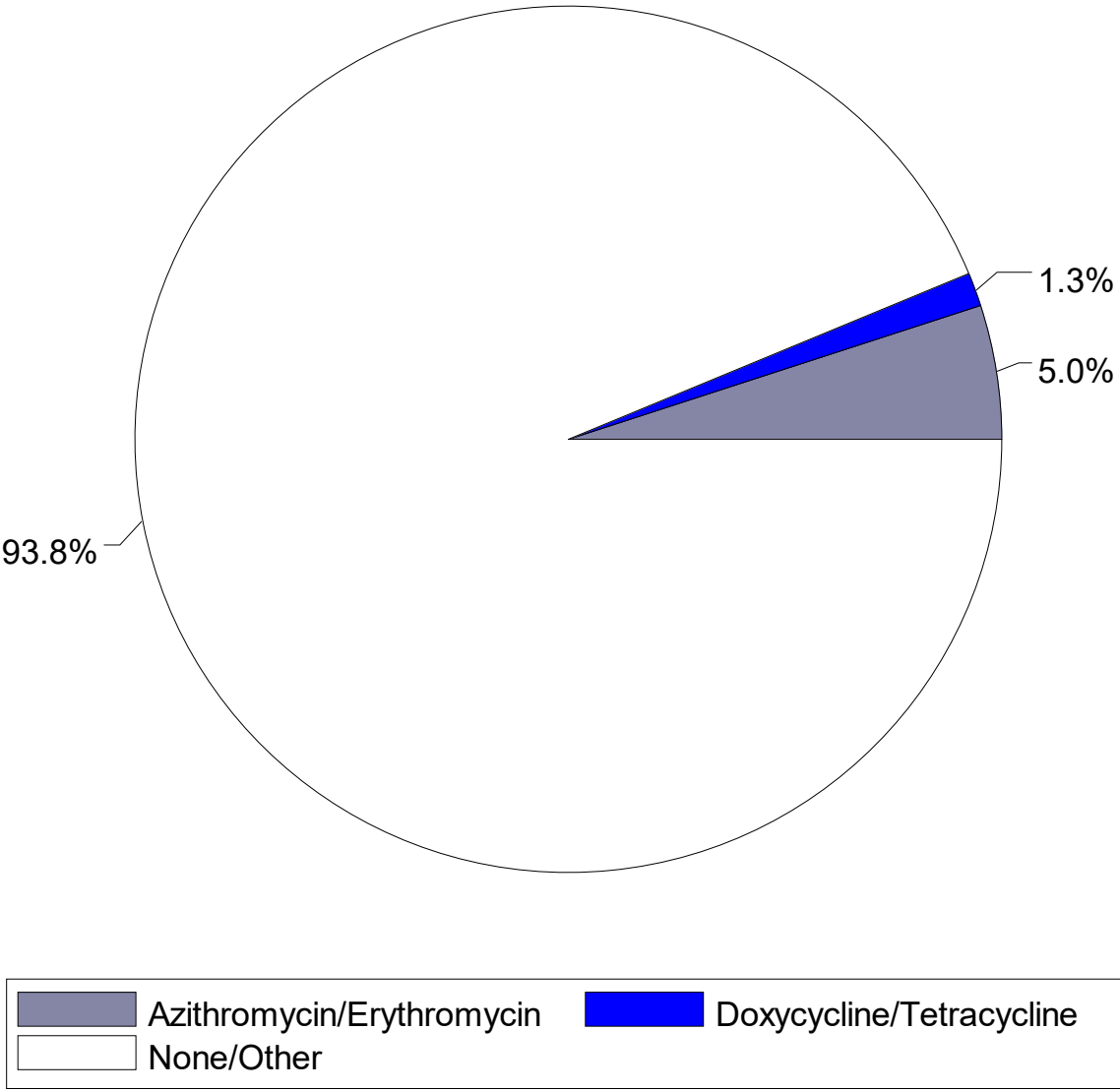
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2021



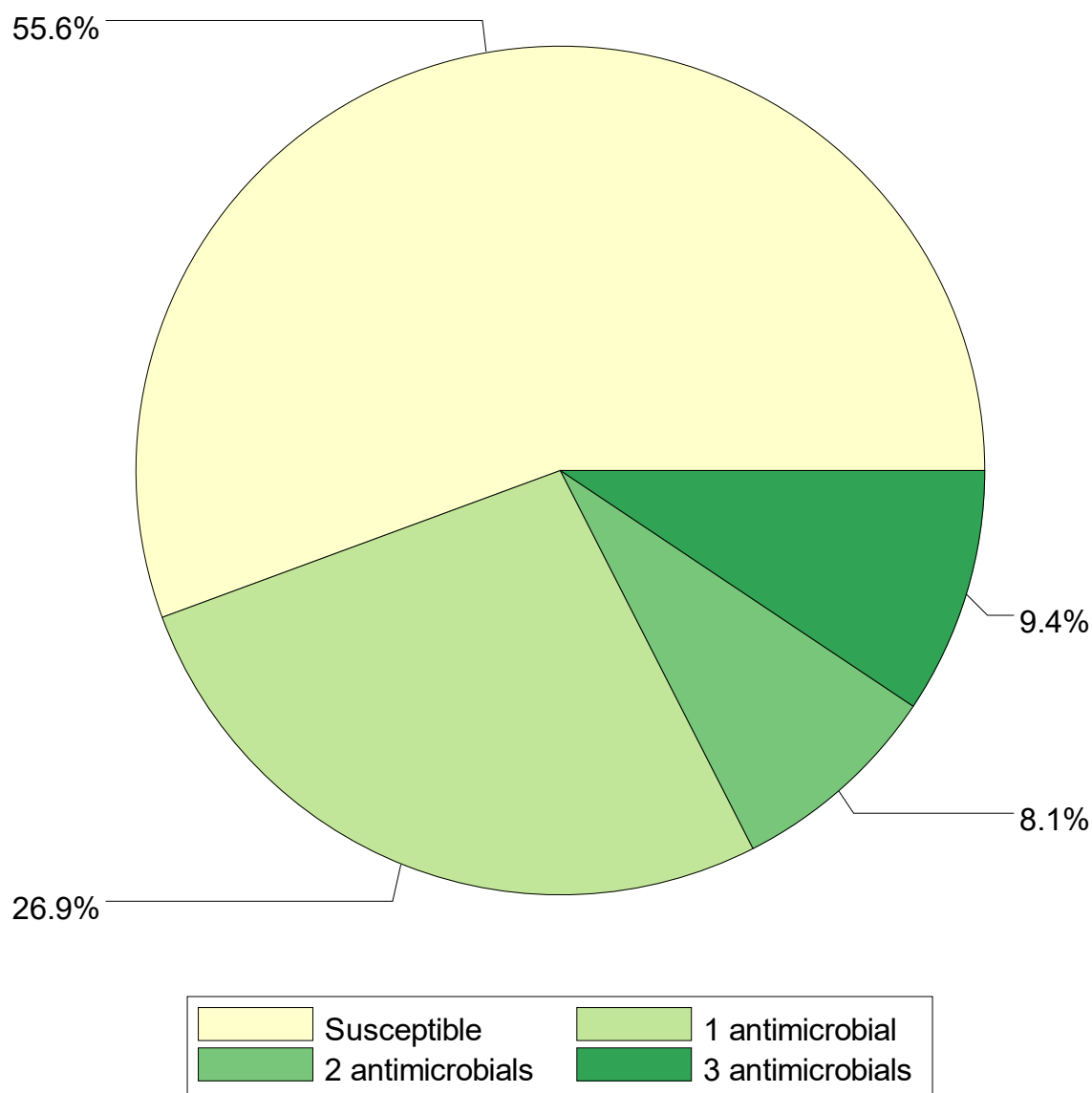
Primary Treatment	Count	Percentage
Gentamicin 240 mg	1	0.6
Ceftriaxone 500 mg	159	99.4

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	8	5.0
Doxycycline/Tetracycline	2	1.3
None/Other	150	93.8

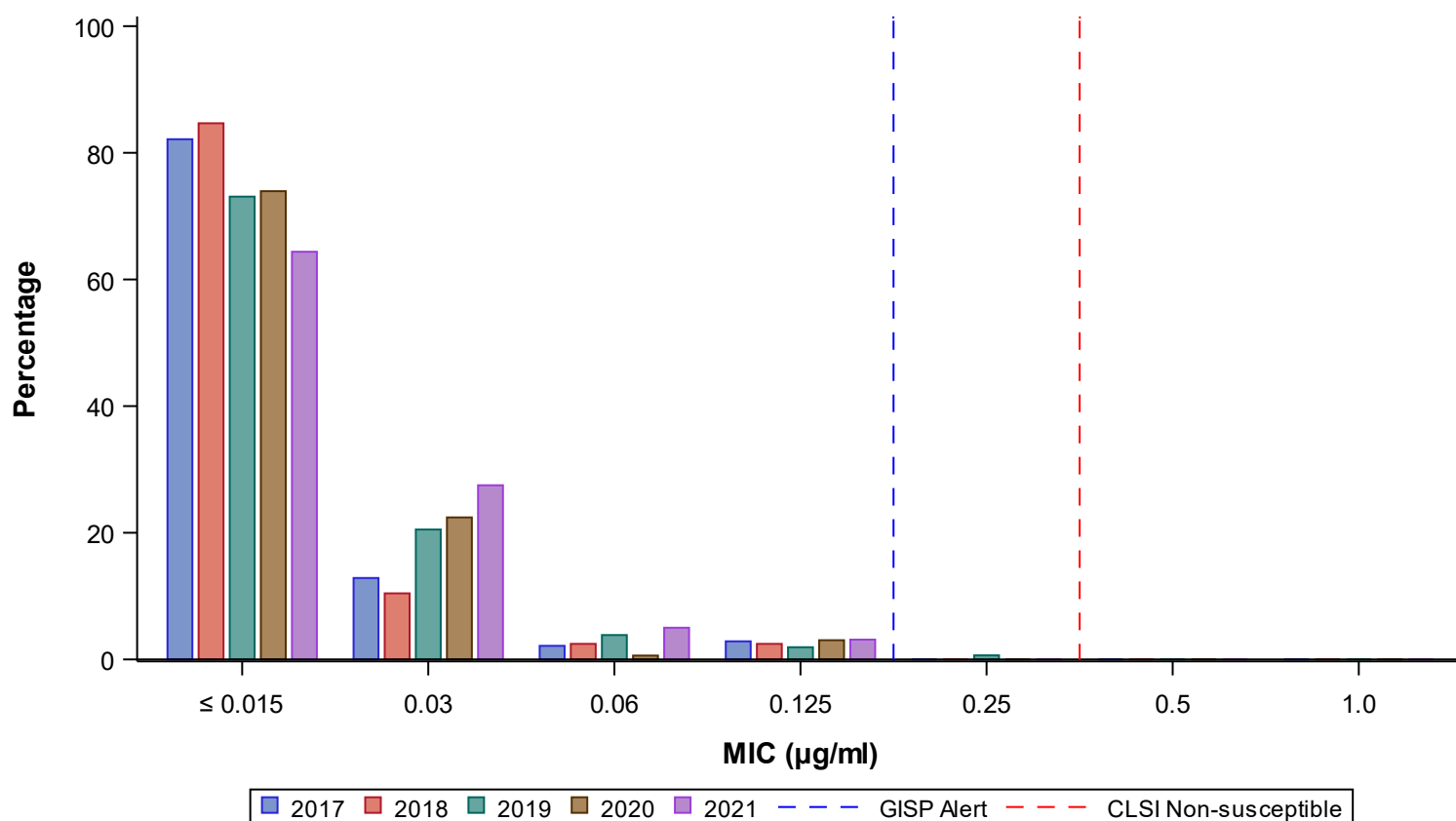
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	89	55.6
1 antimicrobial	43	26.9
2 antimicrobials	13	8.1
3 antimicrobials	15	9.4
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2017-2021



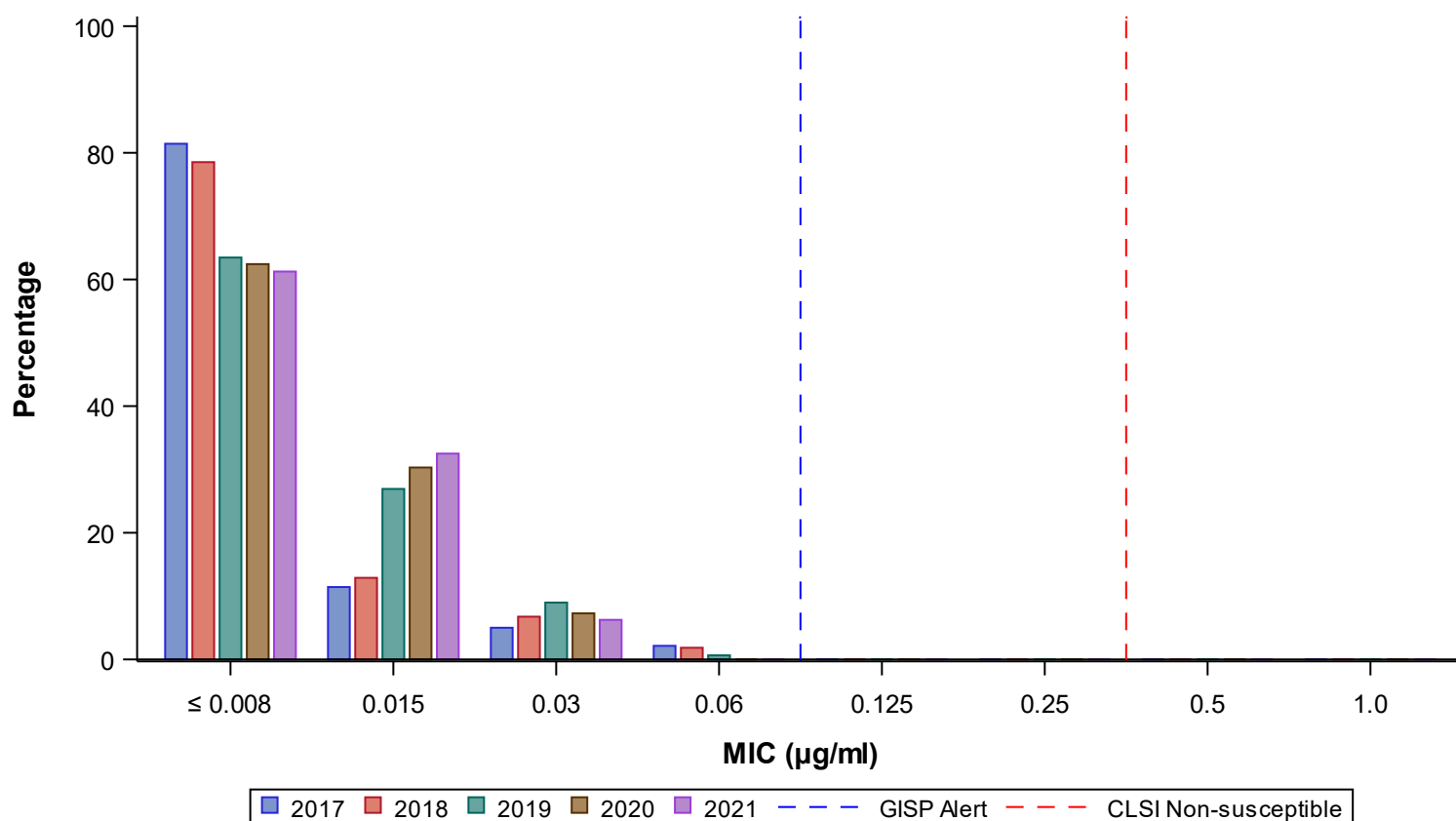
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	115 (82.1)	18 (12.9)	3 (2.1)	4 (2.9)	0 (0.0)	0 (0.0)	0 (0.0)	140
2018	138 (84.7)	17 (10.4)	4 (2.5)	4 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	163
2019	114 (73.1)	32 (20.5)	6 (3.8)	3 (1.9)	1 (0.6)	0 (0.0)	0 (0.0)	156
2020	122 (73.9)	37 (22.4)	1 (0.6)	5 (3.0)	0 (0.0)	0 (0.0)	0 (0.0)	165
2021	103 (64.4)	44 (27.5)	8 (5.0)	5 (3.1)	0 (0.0)	0 (0.0)	0 (0.0)	160

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2017-2021



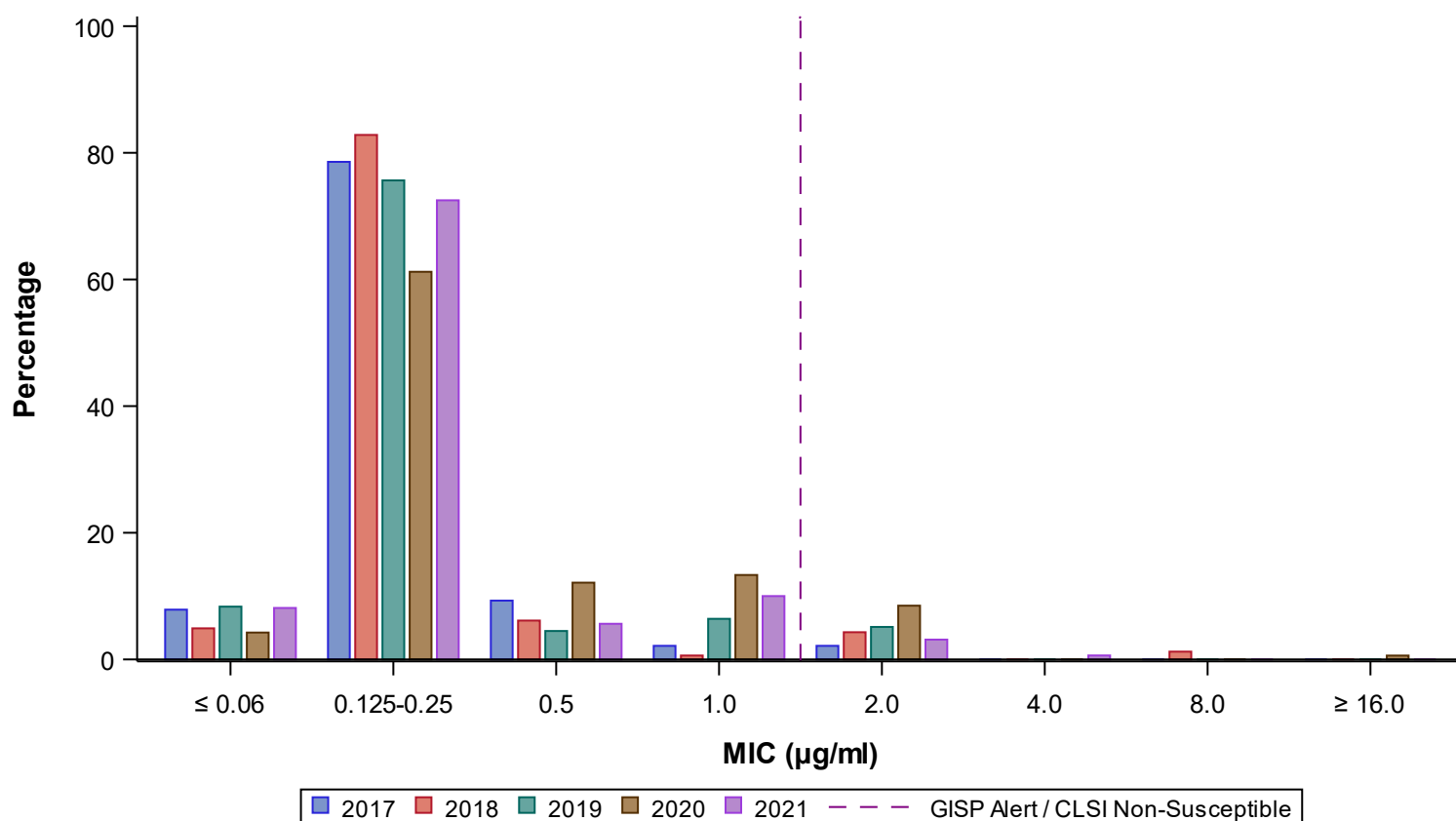
Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	114 (81.4)	16 (11.4)	7 (5.0)	3 (2.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	140
2018	128 (78.5)	21 (12.9)	11 (6.7)	3 (1.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	163
2019	99 (63.5)	42 (26.9)	14 (9.0)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	156
2020	103 (62.4)	50 (30.3)	12 (7.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	165
2021	98 (61.3)	52 (32.5)	10 (6.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	160

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	11 (7.9)	110 (78.6)	13 (9.3)	3 (2.1)	3 (2.1)	0 (0.0)	0 (0.0)	0 (0.0)	140
2018	8 (4.9)	135 (82.8)	10 (6.1)	1 (0.6)	7 (4.3)	0 (0.0)	2 (1.2)	0 (0.0)	163
2019	13 (8.3)	118 (75.6)	7 (4.5)	10 (6.4)	8 (5.1)	0 (0.0)	0 (0.0)	0 (0.0)	156
2020	7 (4.2)	101 (61.2)	20 (12.1)	22 (13.3)	14 (8.5)	0 (0.0)	0 (0.0)	1 (0.6)	165
2021	13 (8.1)	116 (72.5)	9 (5.6)	16 (10.0)	5 (3.1)	1 (0.6)	0 (0.0)	0 (0.0)	160

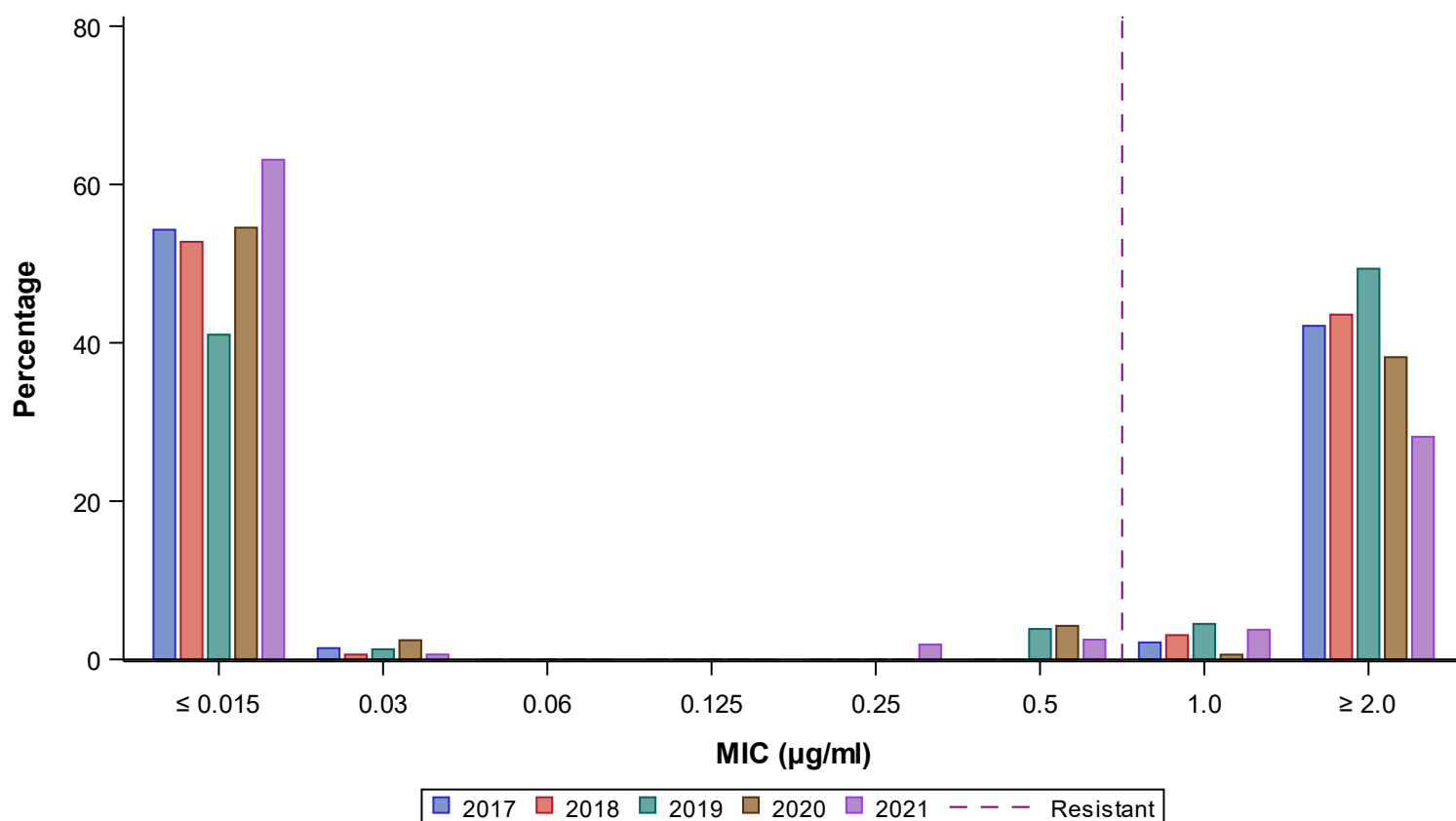
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

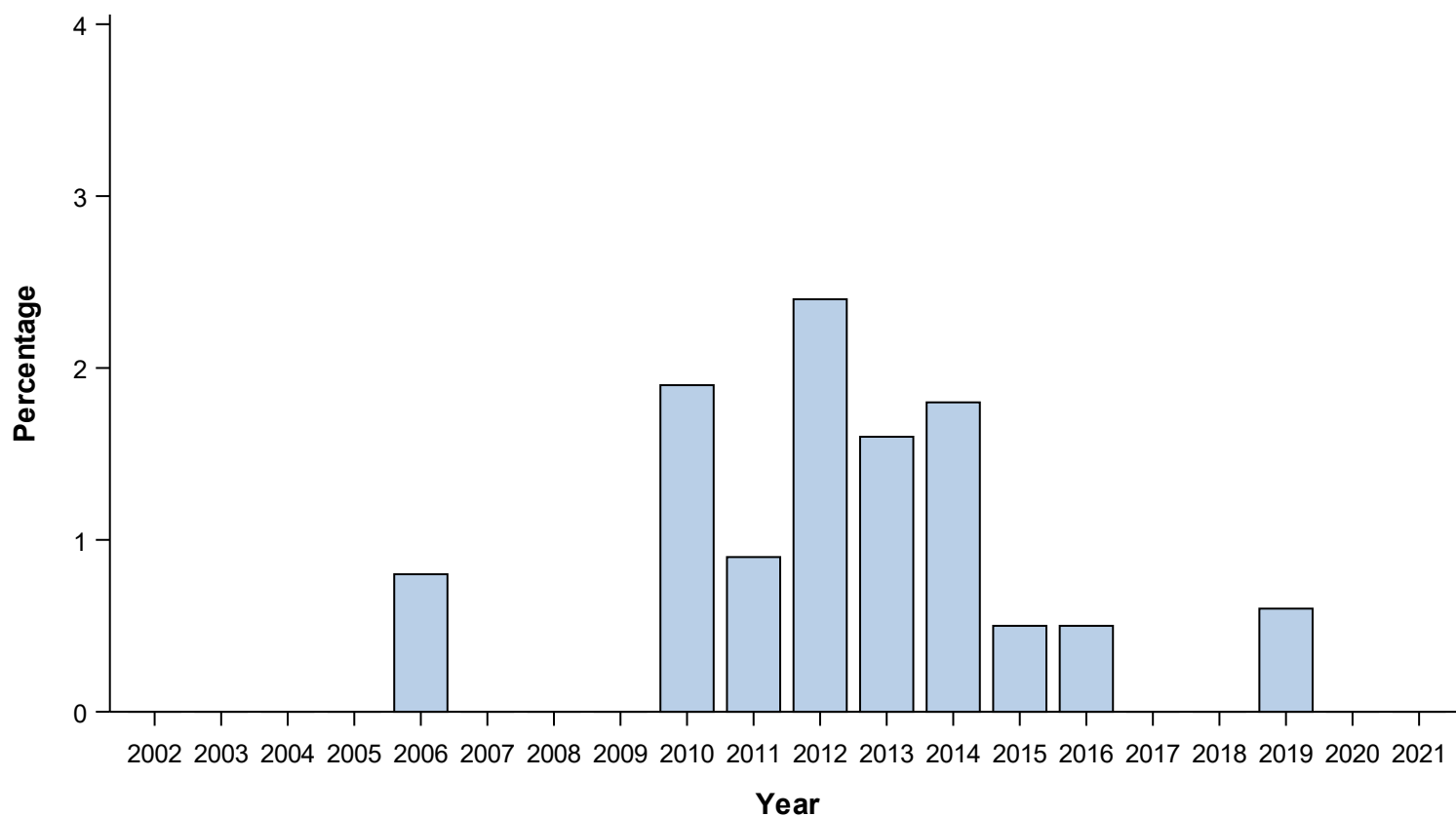
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	76 (54.3)	2 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (2.1)	59 (42.1)	140
2018	86 (52.8)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (3.1)	71 (43.6)	163
2019	64 (41.0)	2 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	6 (3.8)	7 (4.5)	77 (49.4)	156
2020	90 (54.5)	4 (2.4)	0 (0.0)	0 (0.0)	0 (0.0)	7 (4.2)	1 (0.6)	63 (38.2)	165
2021	101 (63.1)	1 (0.6)	0 (0.0)	0 (0.0)	3 (1.9)	4 (2.5)	6 (3.8)	45 (28.1)	160

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2002-2021

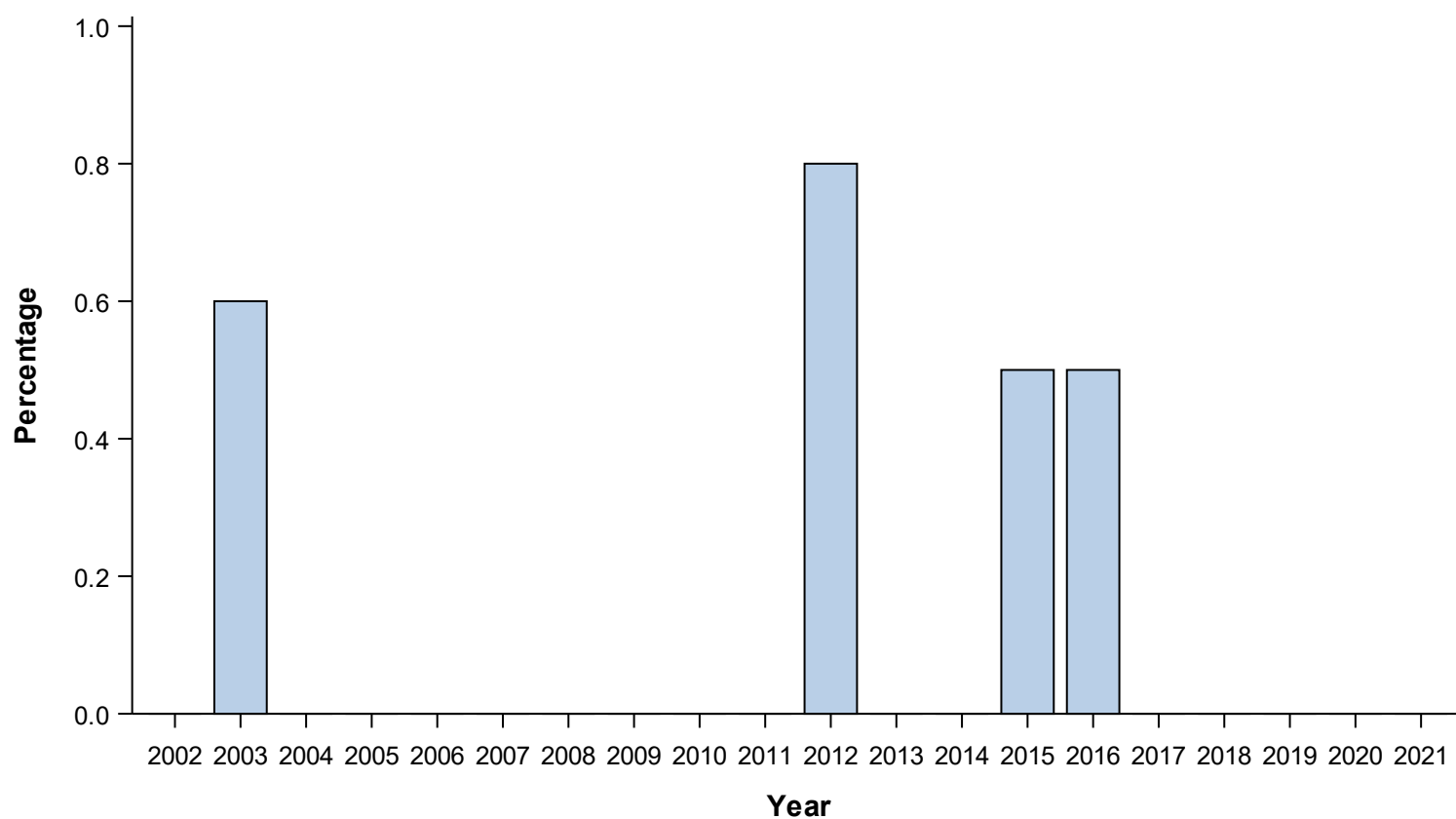


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.9)	1 (0.9)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
3 (2.4)	2 (1.6)	3 (1.8)	1 (0.5)	1 (0.5)	0 (0.0)	0 (0.0)	1 (0.6)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 μ g/ml.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2002-2021

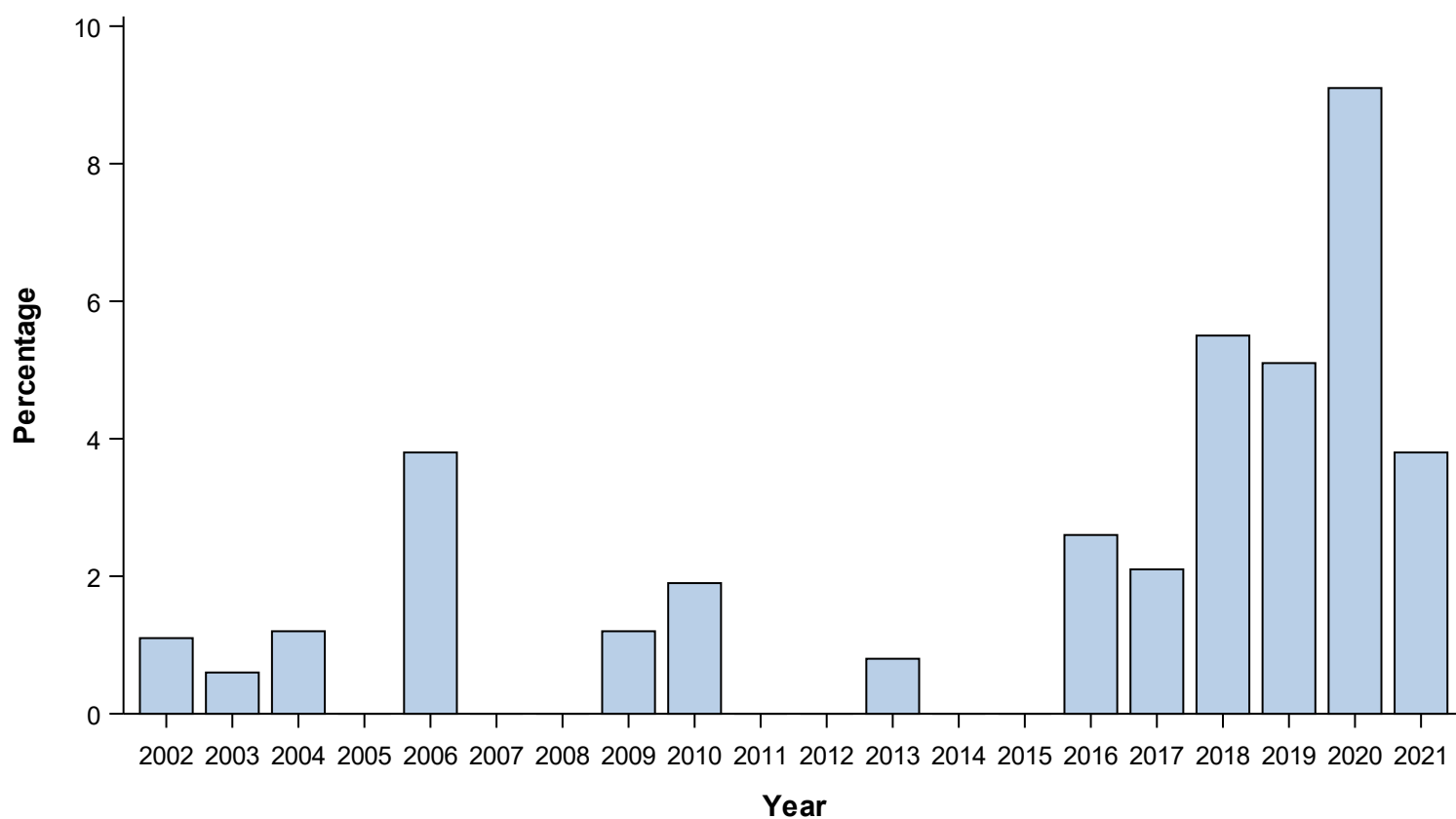


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.8)	0 (0.0)	0 (0.0)	1 (0.5)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Orange County, California, 2002-2021

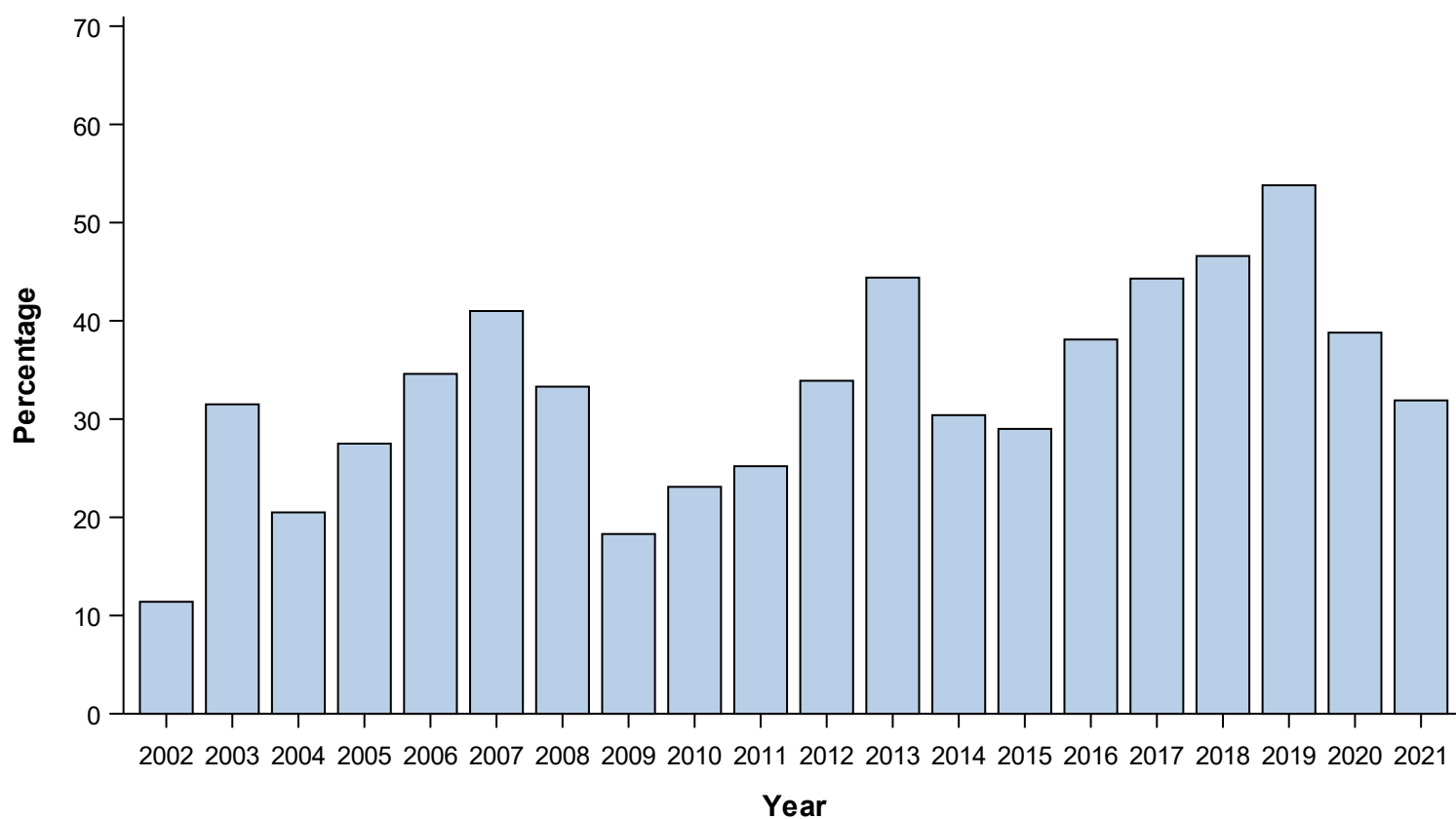


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
2 (1.1)	1 (0.6)	2 (1.2)	0 (0.0)	5 (3.8)	0 (0.0)	0 (0.0)	1 (1.2)	2 (1.9)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	1 (0.8)	0 (0.0)	0 (0.0)	5 (2.6)	3 (2.1)	9 (5.5)	8 (5.1)	15 (9.1)	6 (3.8)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Orange County, California, 2002-2021

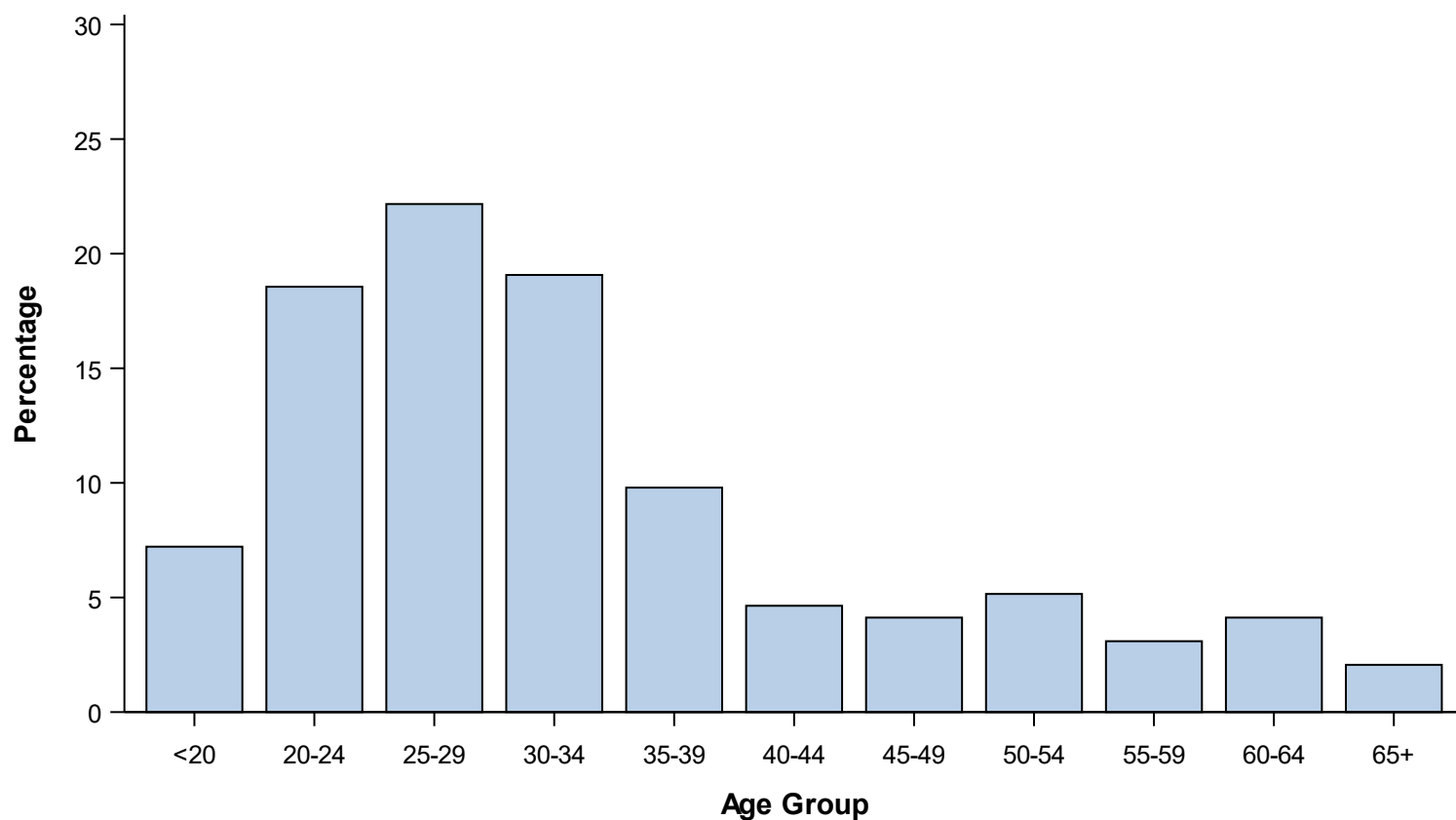


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
20 (11.4)	56 (31.5)	33 (20.5)	33 (27.5)	46 (34.6)	48 (41.0)	29 (33.3)	15 (18.3)	24 (23.1)	27 (25.2)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
42 (33.9)	55 (44.4)	52 (30.4)	53 (29.0)	74 (38.1)	62 (44.3)	76 (46.6)	84 (53.8)	64 (38.8)	51 (31.9)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

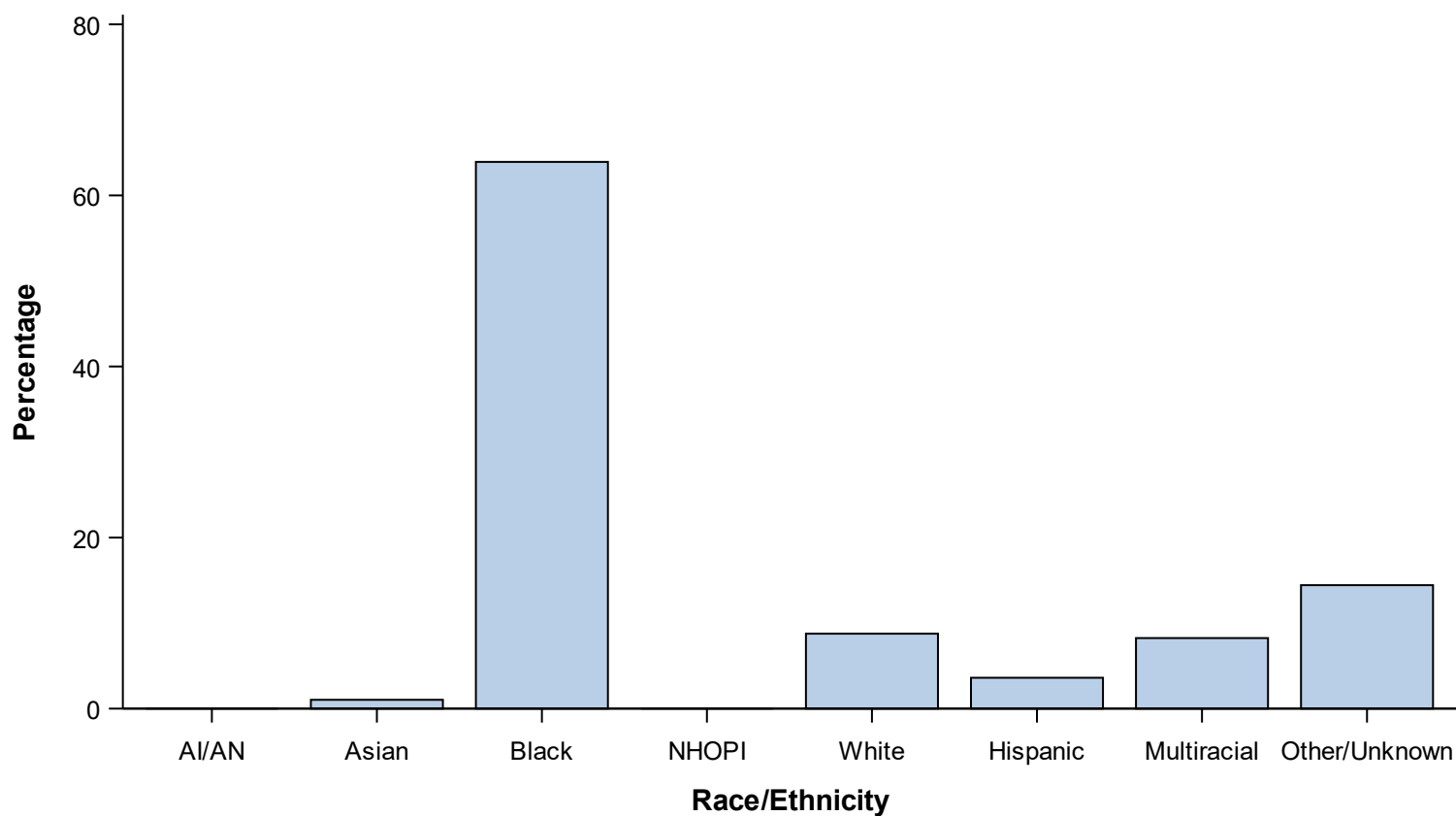
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
14 (7.2)	36 (18.6)	43 (22.2)	37 (19.1)	19 (9.8)	9 (4.6)	8 (4.1)	10 (5.2)	6 (3.1)	8 (4.1)	4 (2.1)	194

Note: Cases with unknown age were excluded.

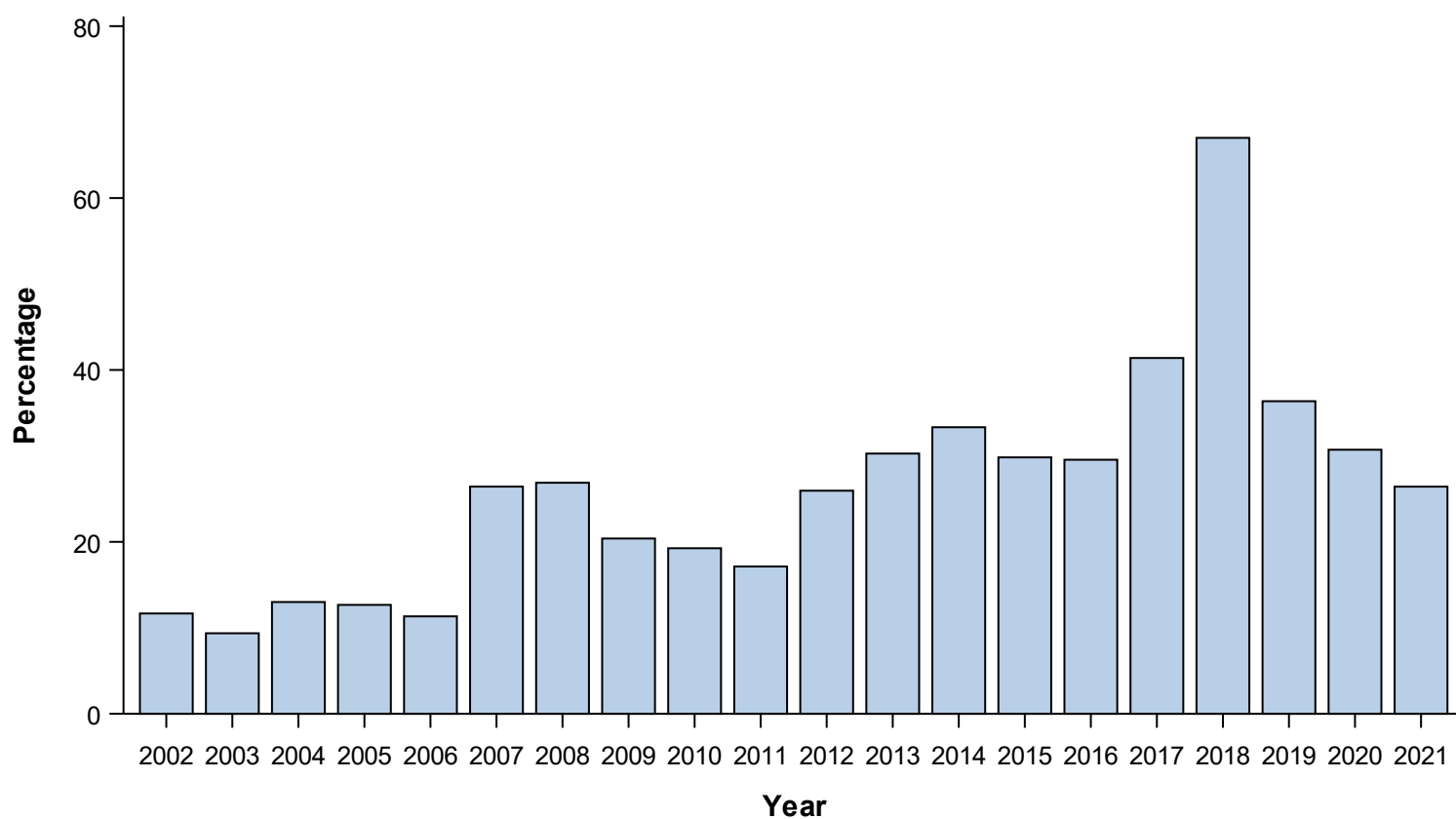
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	2 (1.0)	124 (63.9)	0 (0.0)	17 (8.8)	7 (3.6)	16 (8.2)	28 (14.4)	194

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Philadelphia, Pennsylvania, 2002-2021

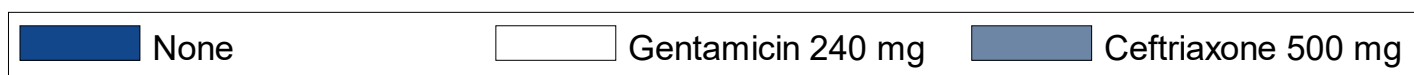
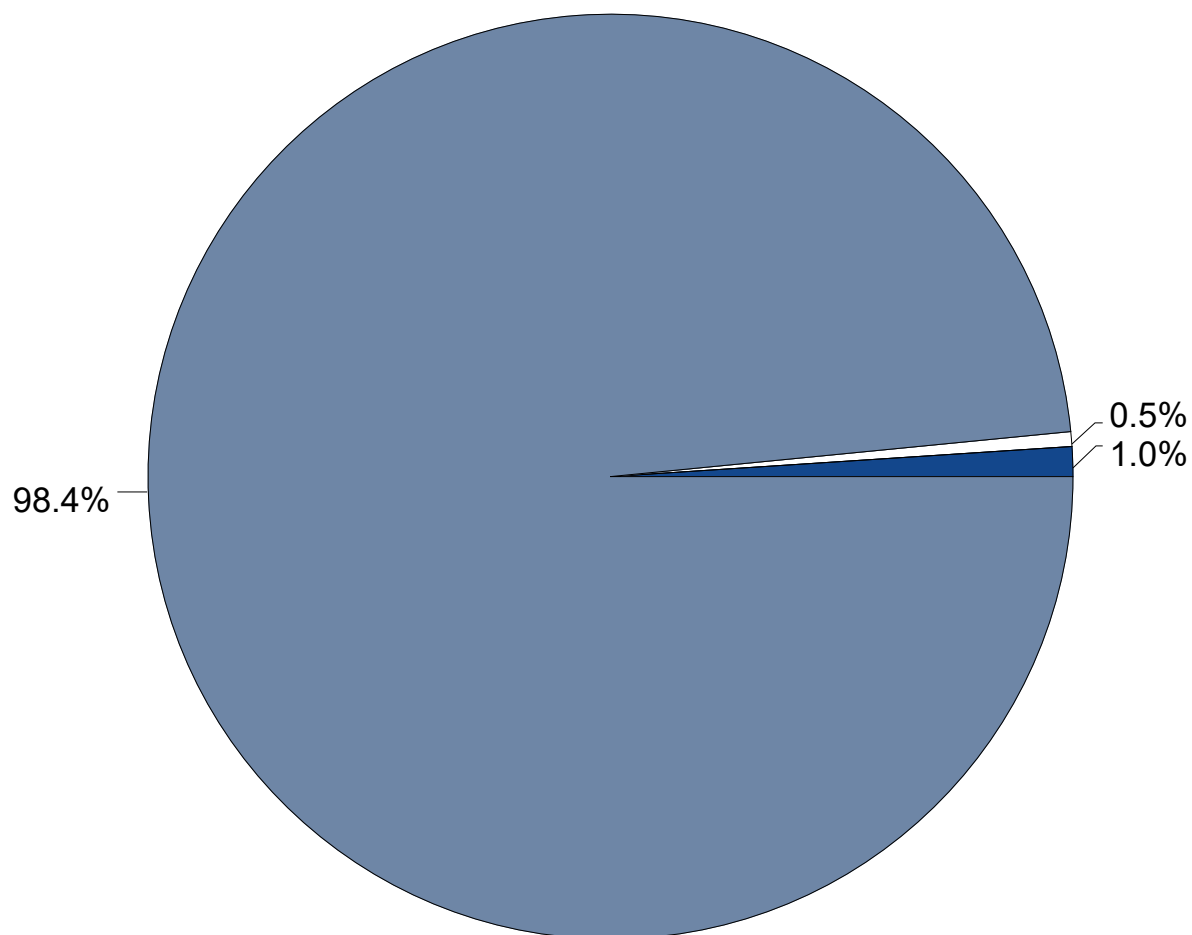


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
35 (11.7)	28 (9.4)	39 (13.0)	38 (12.7)	34 (11.3)	74 (26.4)	68 (26.9)	42 (20.4)	57 (19.3)	49 (17.1)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
75 (26.0)	89 (30.3)	99 (33.3)	88 (29.8)	86 (29.6)	113 (41.4)	199 (67.0)	108 (36.4)	47 (30.7)	51 (26.4)

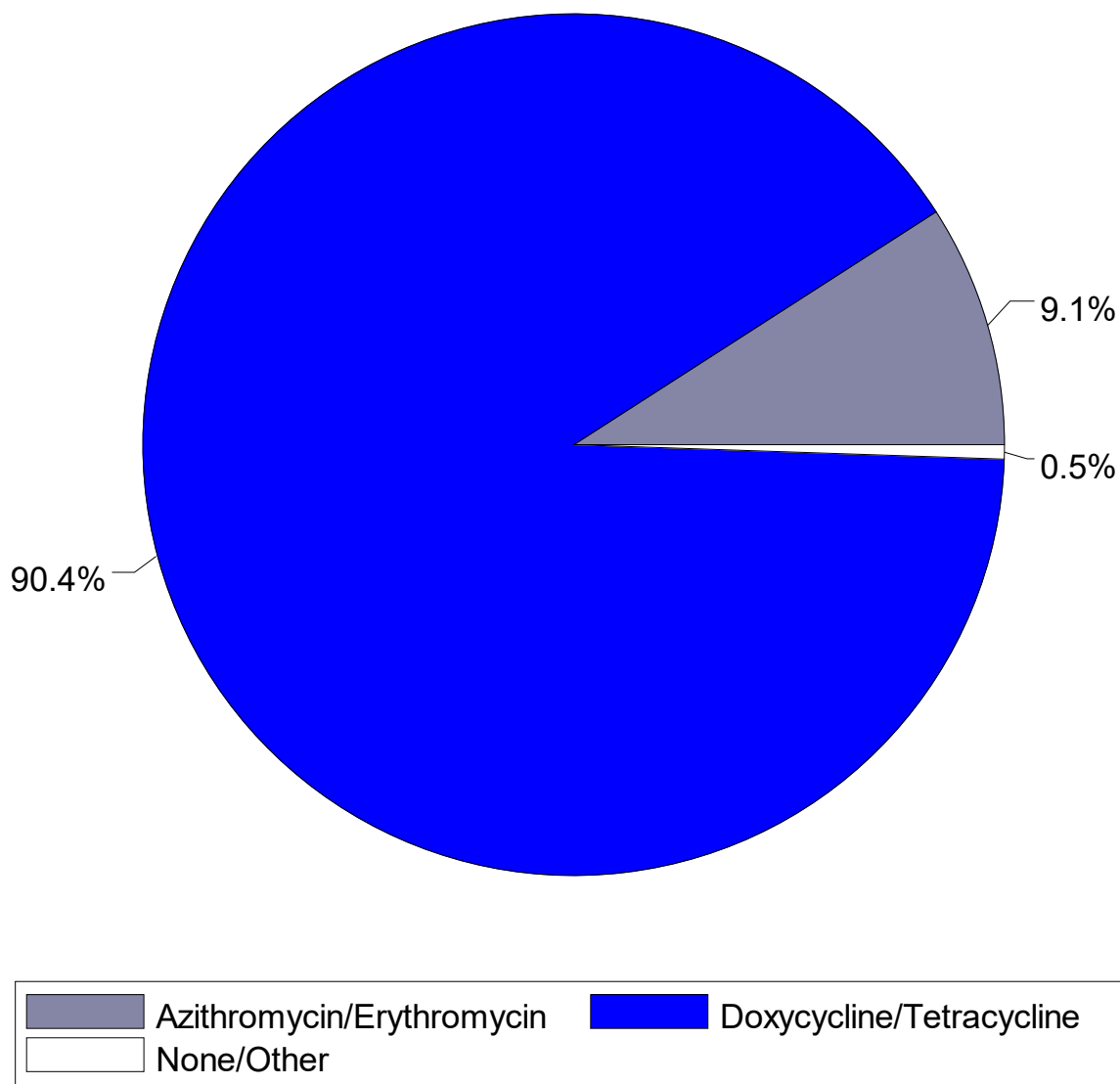
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2021



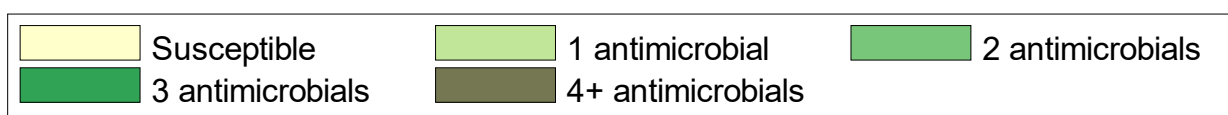
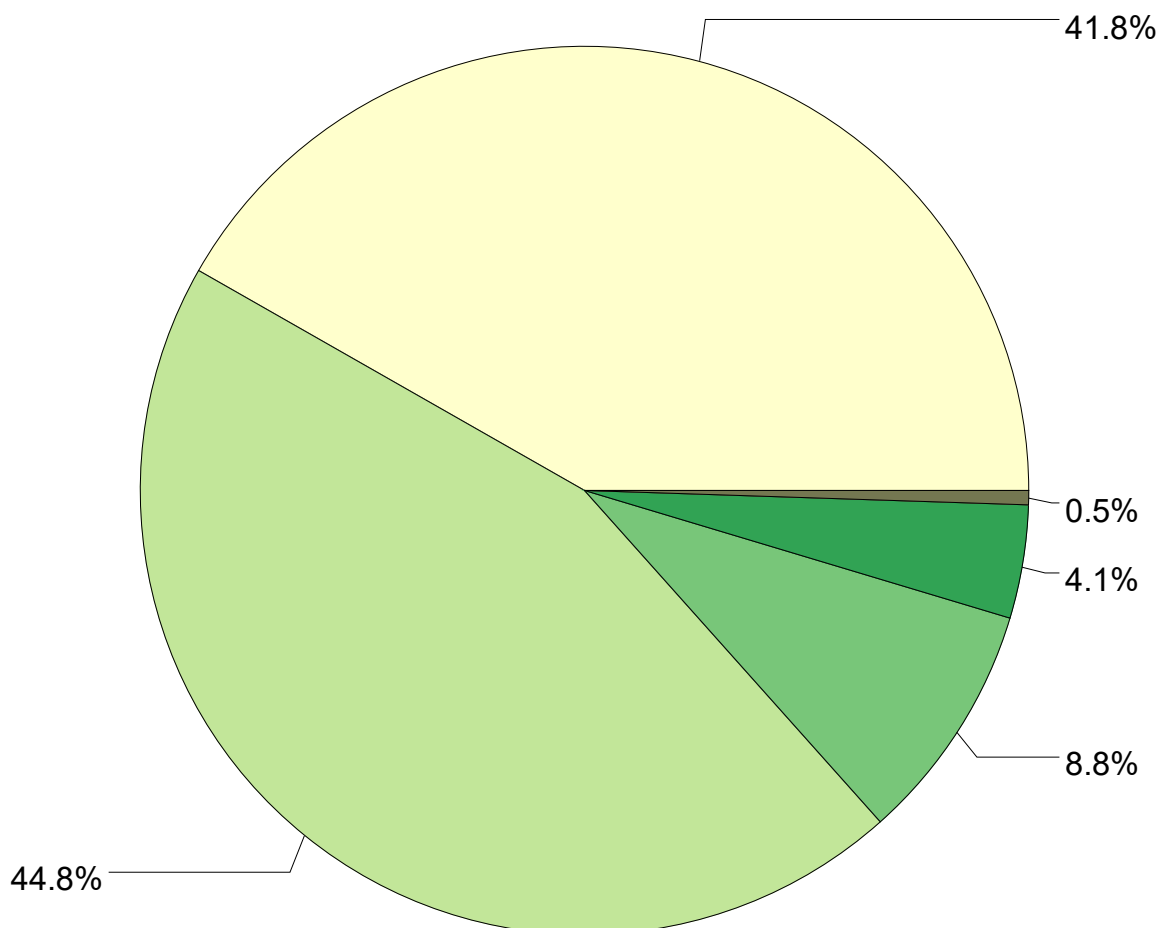
Primary Treatment	Count	Percentage
None	2	1.0
Gentamicin 240 mg	1	0.5
Ceftriaxone 500 mg	190	98.4

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	17	9.1
Doxycycline/Tetracycline	169	90.4
None/Other	1	0.5

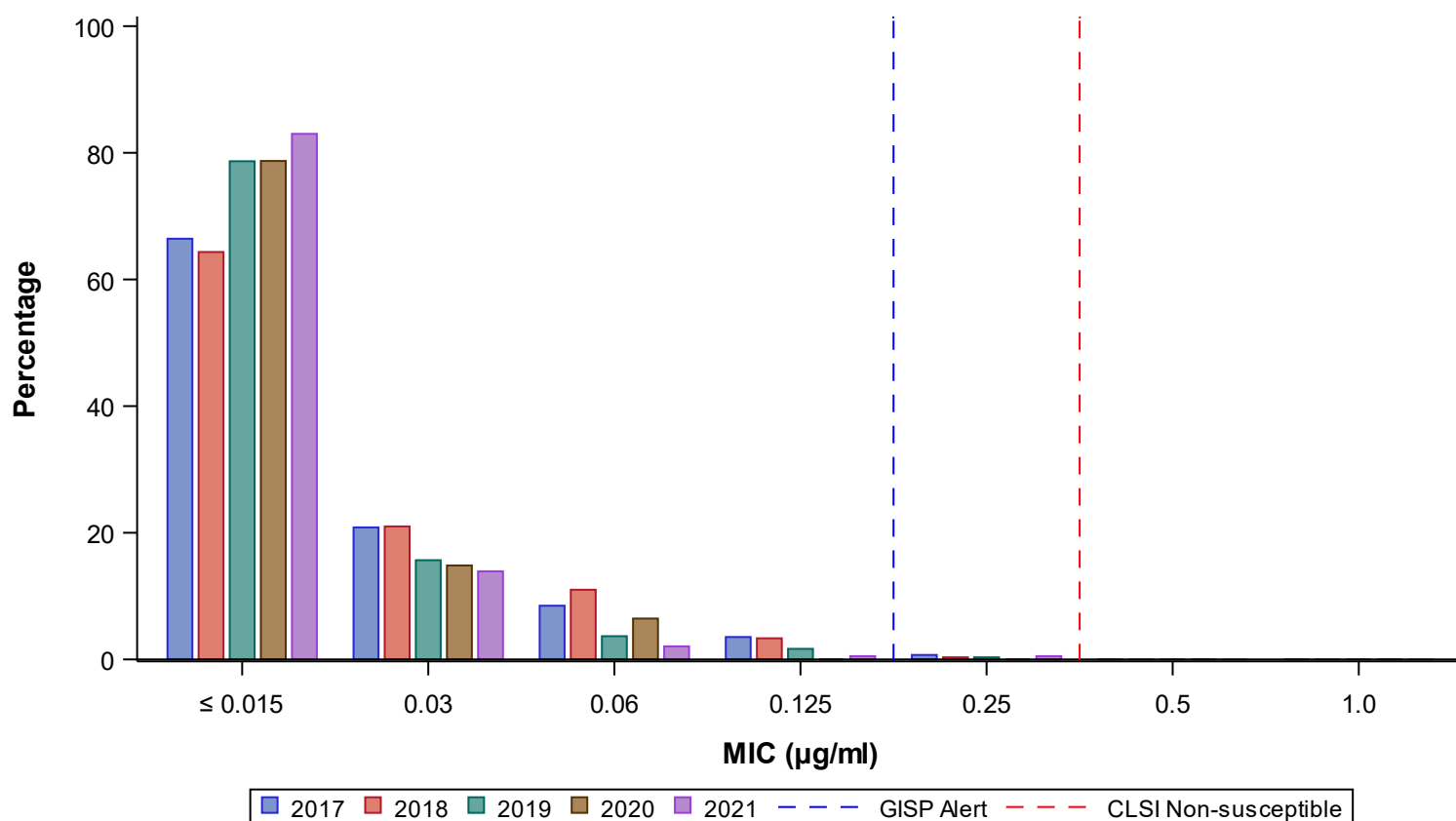
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	81	41.8
1 antimicrobial	87	44.8
2 antimicrobials	17	8.8
3 antimicrobials	8	4.1
4+ antimicrobials	1	0.5

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2017-2021



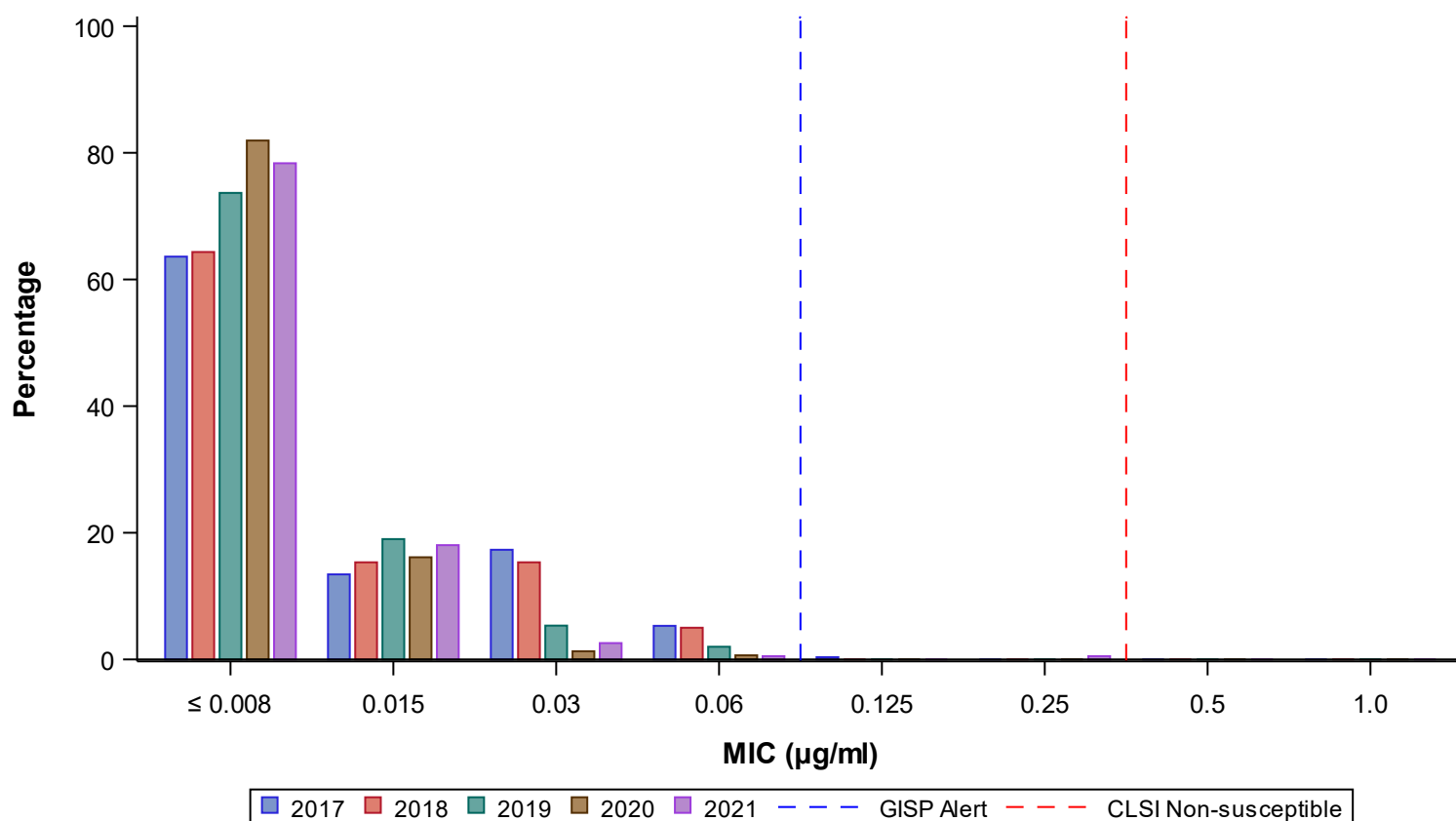
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	188 (66.4)	59 (20.8)	24 (8.5)	10 (3.5)	2 (0.7)	0 (0.0)	0 (0.0)	283
2018	193 (64.3)	63 (21.0)	33 (11.0)	10 (3.3)	1 (0.3)	0 (0.0)	0 (0.0)	300
2019	236 (78.7)	47 (15.7)	11 (3.7)	5 (1.7)	1 (0.3)	0 (0.0)	0 (0.0)	300
2020	122 (78.7)	23 (14.8)	10 (6.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	155
2021	161 (83.0)	27 (13.9)	4 (2.1)	1 (0.5)	1 (0.5)	0 (0.0)	0 (0.0)	194

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	180 (63.6)	38 (13.4)	49 (17.3)	15 (5.3)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	283
2018	193 (64.3)	46 (15.3)	46 (15.3)	15 (5.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2019	221 (73.7)	57 (19.0)	16 (5.3)	6 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2020	127 (81.9)	25 (16.1)	2 (1.3)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	155
2021	152 (78.4)	35 (18.0)	5 (2.6)	1 (0.5)	0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)	194

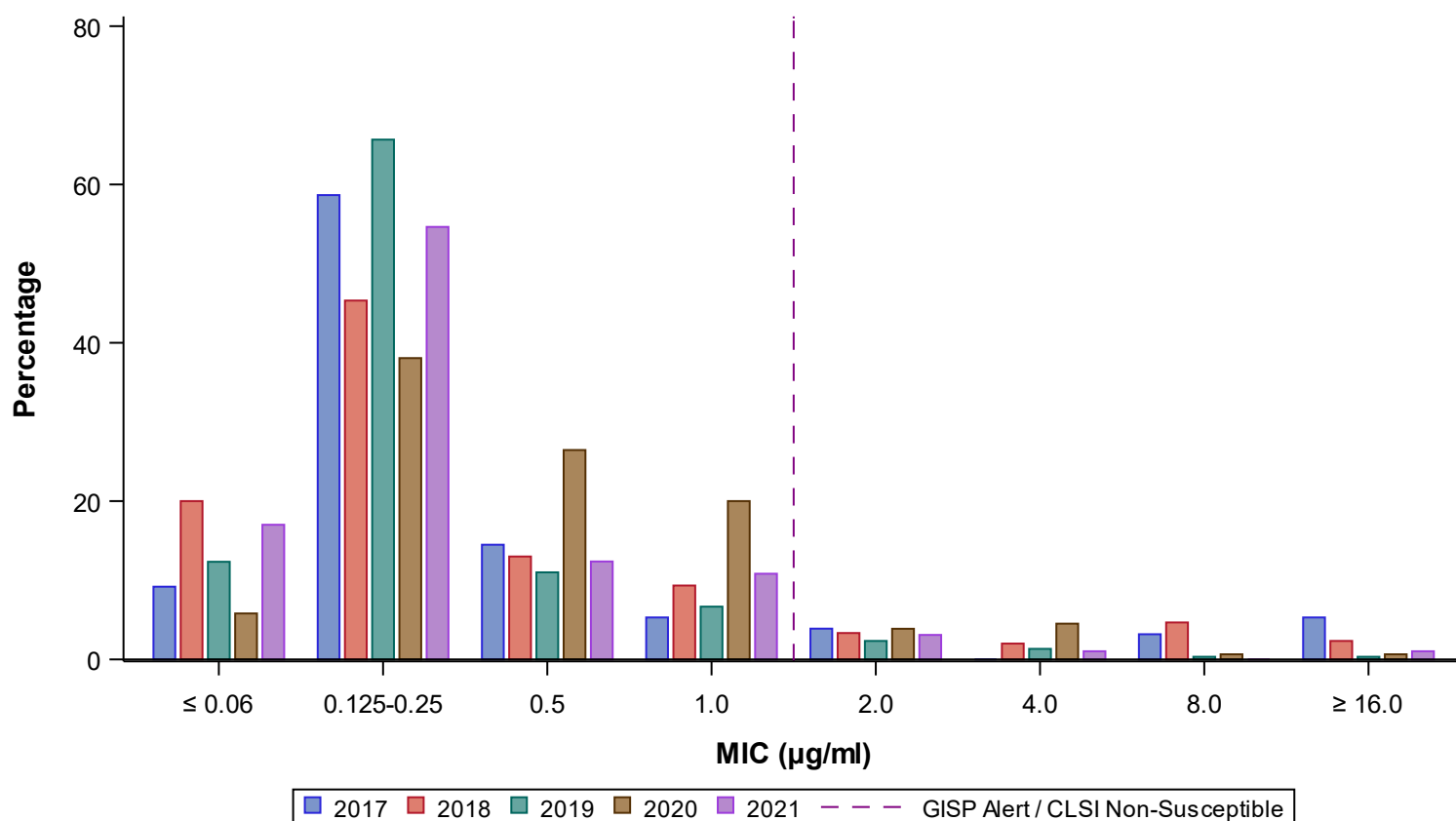
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	26 (9.2)	166 (58.7)	41 (14.5)	15 (5.3)	11 (3.9)	0 (0.0)	9 (3.2)	15 (5.3)	283
2018	60 (20.0)	136 (45.3)	39 (13.0)	28 (9.3)	10 (3.3)	6 (2.0)	14 (4.7)	7 (2.3)	300
2019	37 (12.3)	197 (65.7)	33 (11.0)	20 (6.7)	7 (2.3)	4 (1.3)	1 (0.3)	1 (0.3)	300
2020	9 (5.8)	59 (38.1)	41 (26.5)	31 (20.0)	6 (3.9)	7 (4.5)	1 (0.6)	1 (0.6)	155
2021	33 (17.0)	106 (54.6)	24 (12.4)	21 (10.8)	6 (3.1)	2 (1.0)	0 (0.0)	2 (1.0)	194

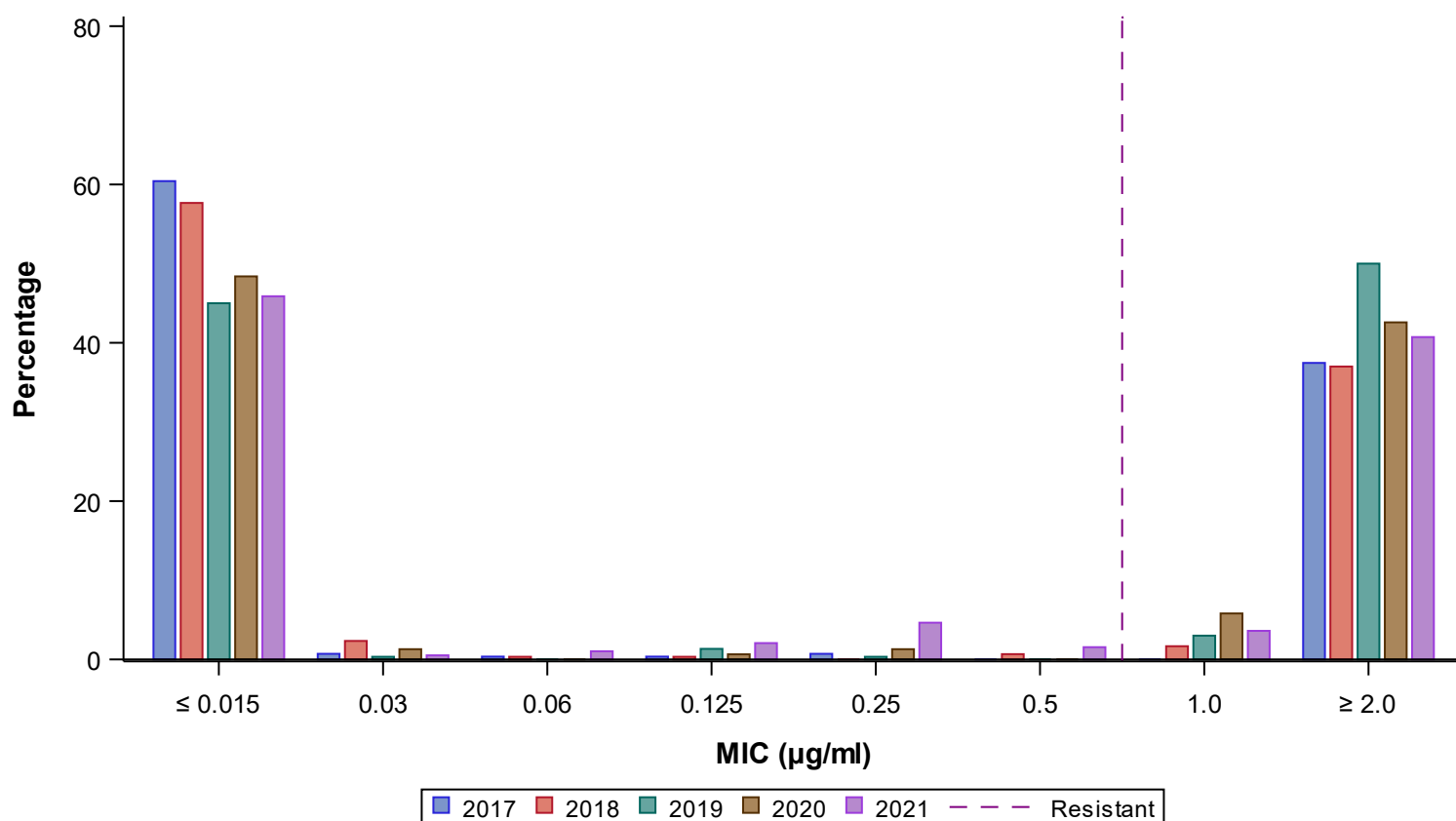
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

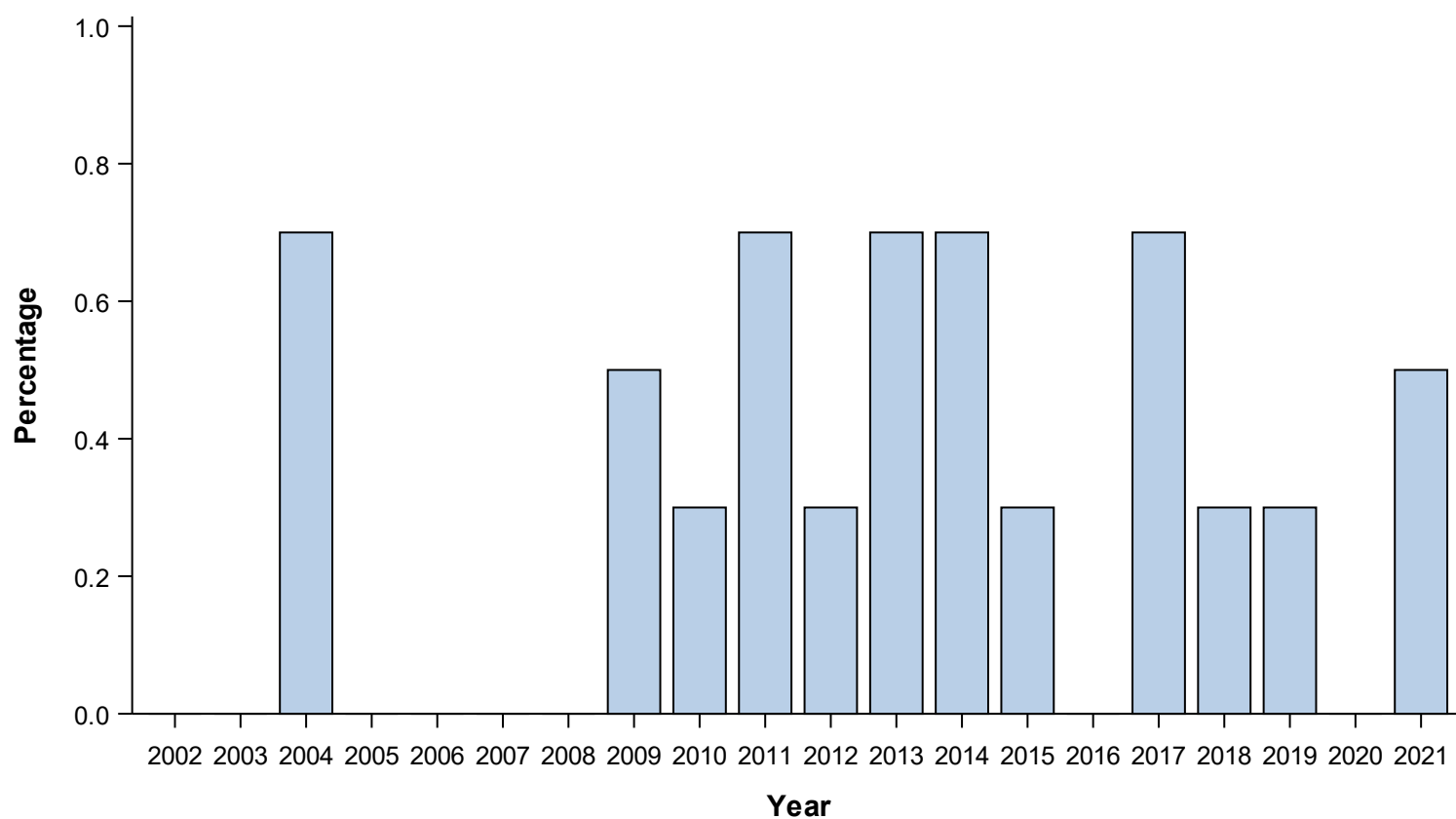
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	171 (60.4)	2 (0.7)	1 (0.4)	1 (0.4)	2 (0.7)	0 (0.0)	0 (0.0)	106 (37.5)	283
2018	173 (57.7)	7 (2.3)	1 (0.3)	1 (0.3)	0 (0.0)	2 (0.7)	5 (1.7)	111 (37.0)	300
2019	135 (45.0)	1 (0.3)	0 (0.0)	4 (1.3)	1 (0.3)	0 (0.0)	9 (3.0)	150 (50.0)	300
2020	75 (48.4)	2 (1.3)	0 (0.0)	1 (0.6)	2 (1.3)	0 (0.0)	9 (5.8)	66 (42.6)	155
2021	89 (45.9)	1 (0.5)	2 (1.0)	4 (2.1)	9 (4.6)	3 (1.5)	7 (3.6)	79 (40.7)	194

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2002-2021

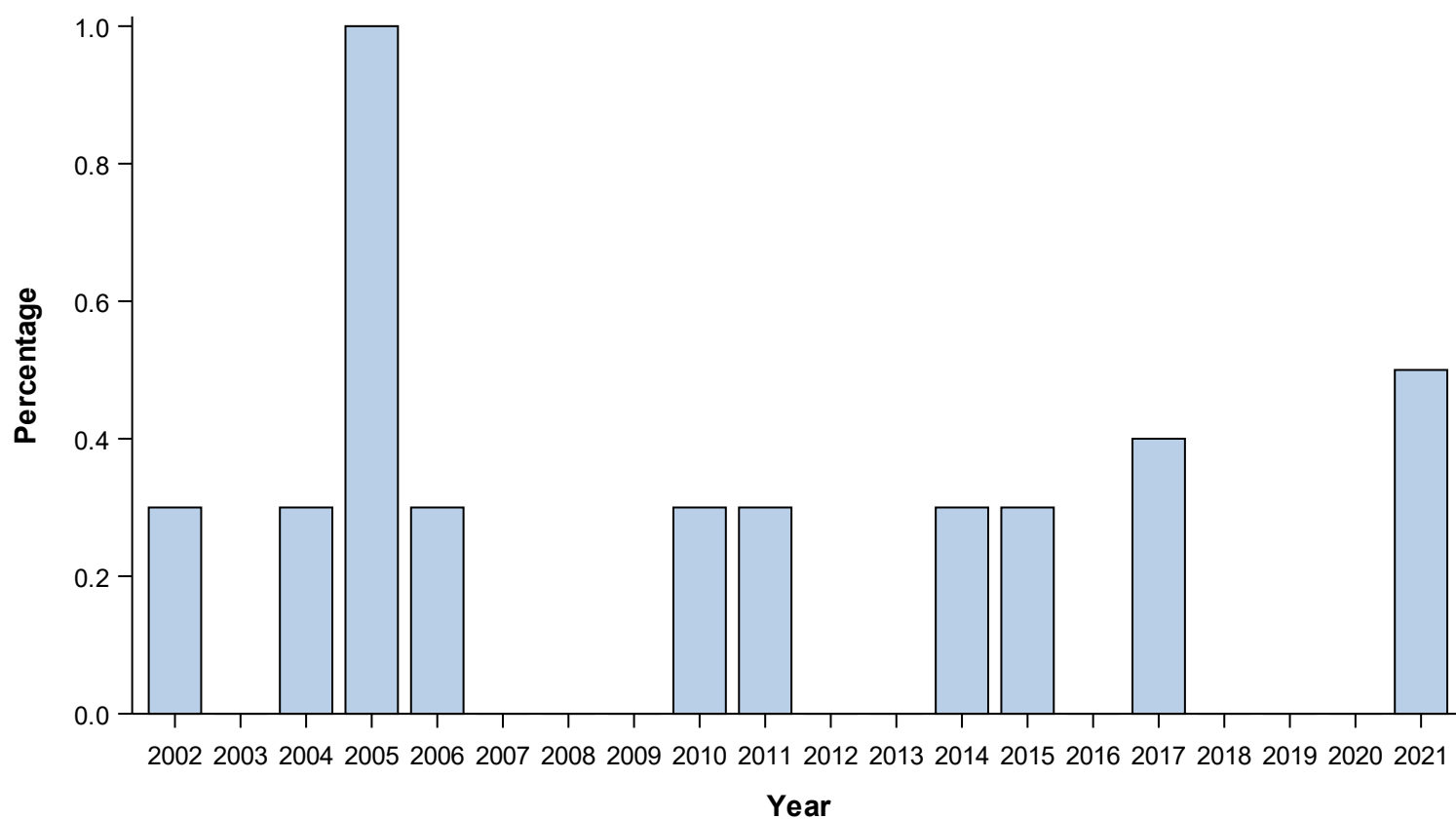


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)	1 (0.3)	2 (0.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.3)	2 (0.7)	2 (0.7)	1 (0.3)	0 (0.0)	2 (0.7)	1 (0.3)	1 (0.3)	0 (0.0)	1 (0.5)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2002-2021

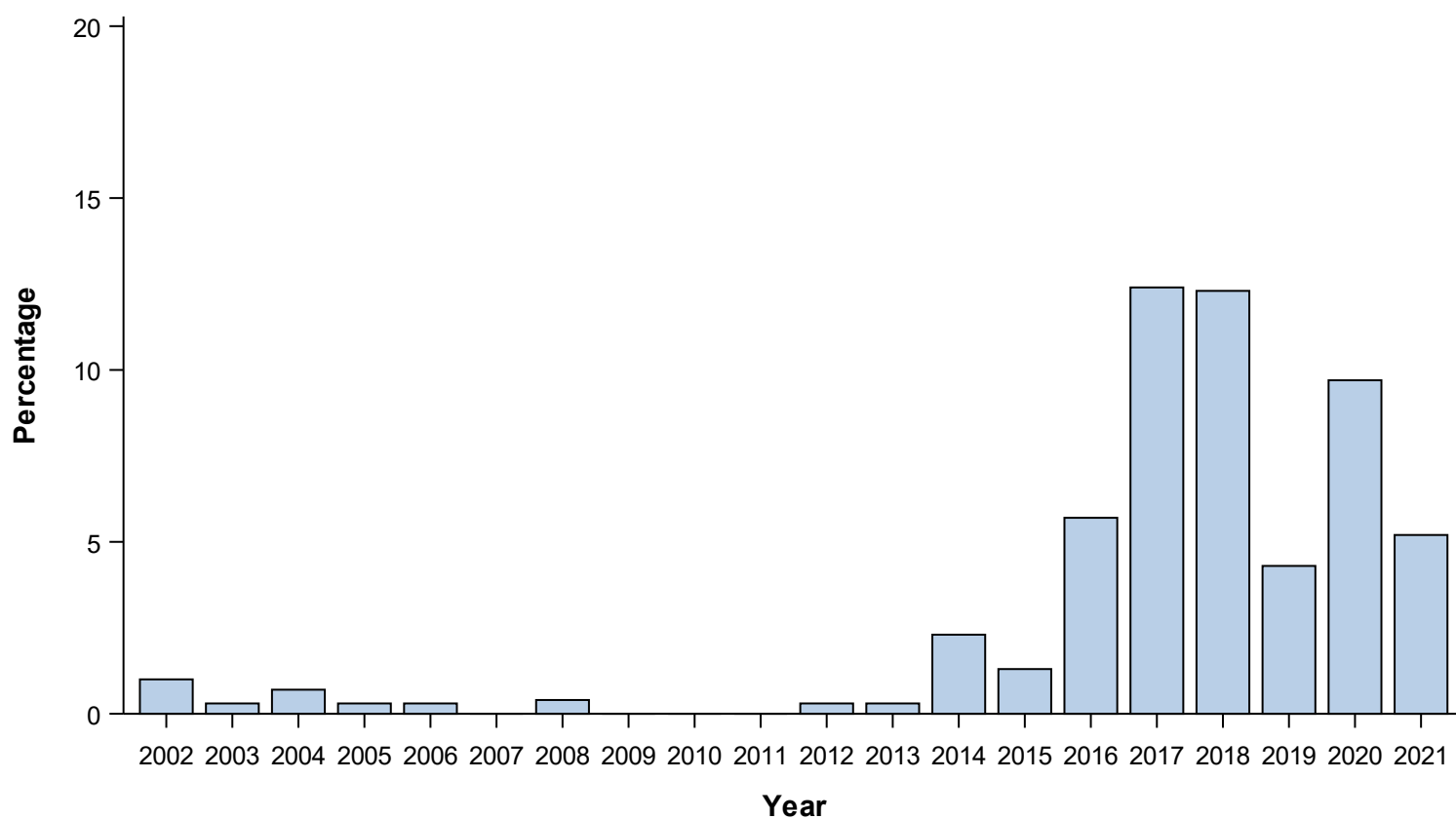


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (0.3)	0 (0.0)	1 (0.3)	3 (1.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.3)	1 (0.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	1 (0.3)	1 (0.3)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Philadelphia, Pennsylvania, 2002-2021

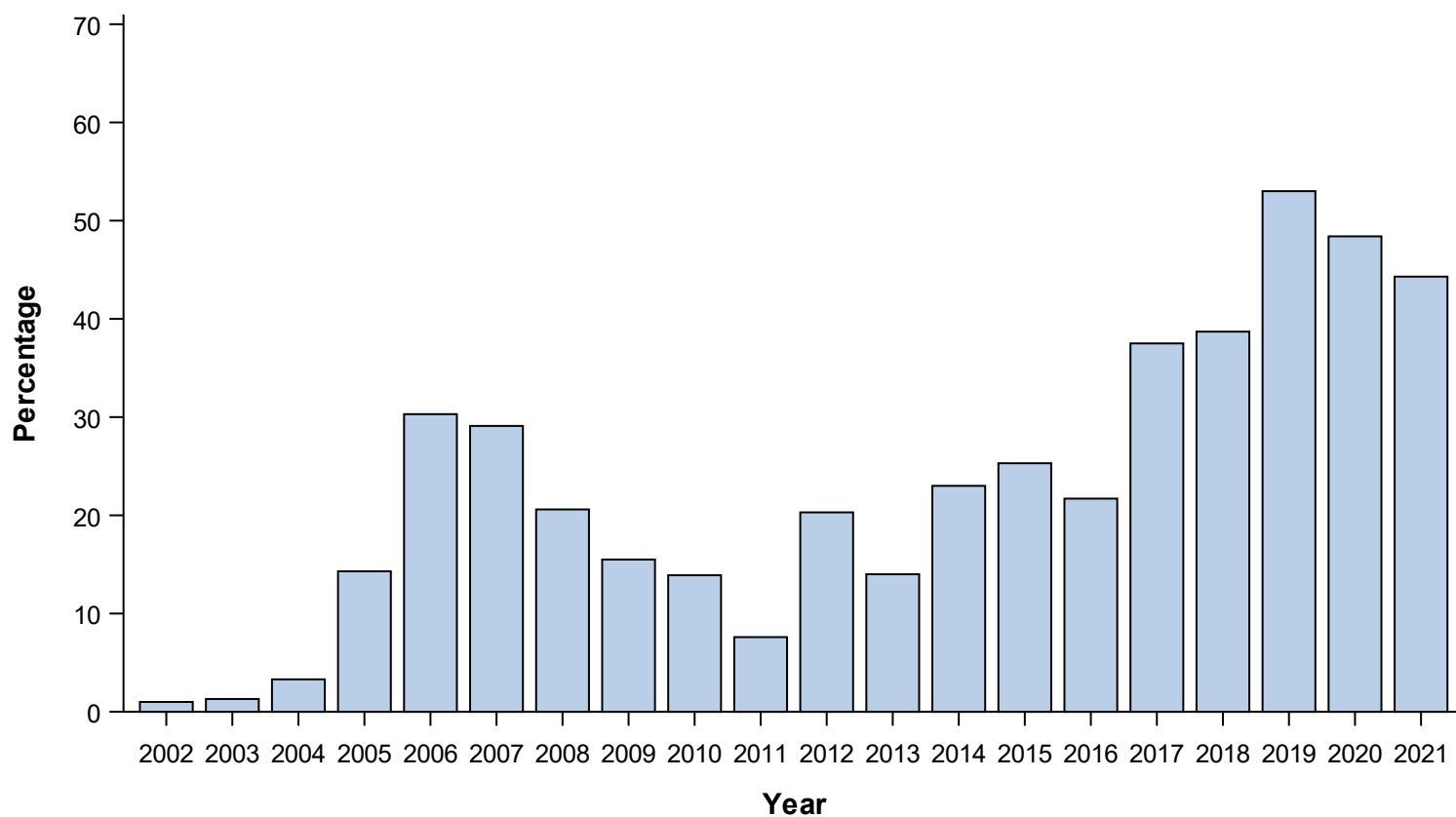


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
3 (1.0)	1 (0.3)	2 (0.7)	1 (0.3)	1 (0.3)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.3)	1 (0.3)	7 (2.3)	4 (1.3)	17 (5.7)	35 (12.4)	37 (12.3)	13 (4.3)	15 (9.7)	10 (5.2)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Philadelphia, Pennsylvania, 2002-2021

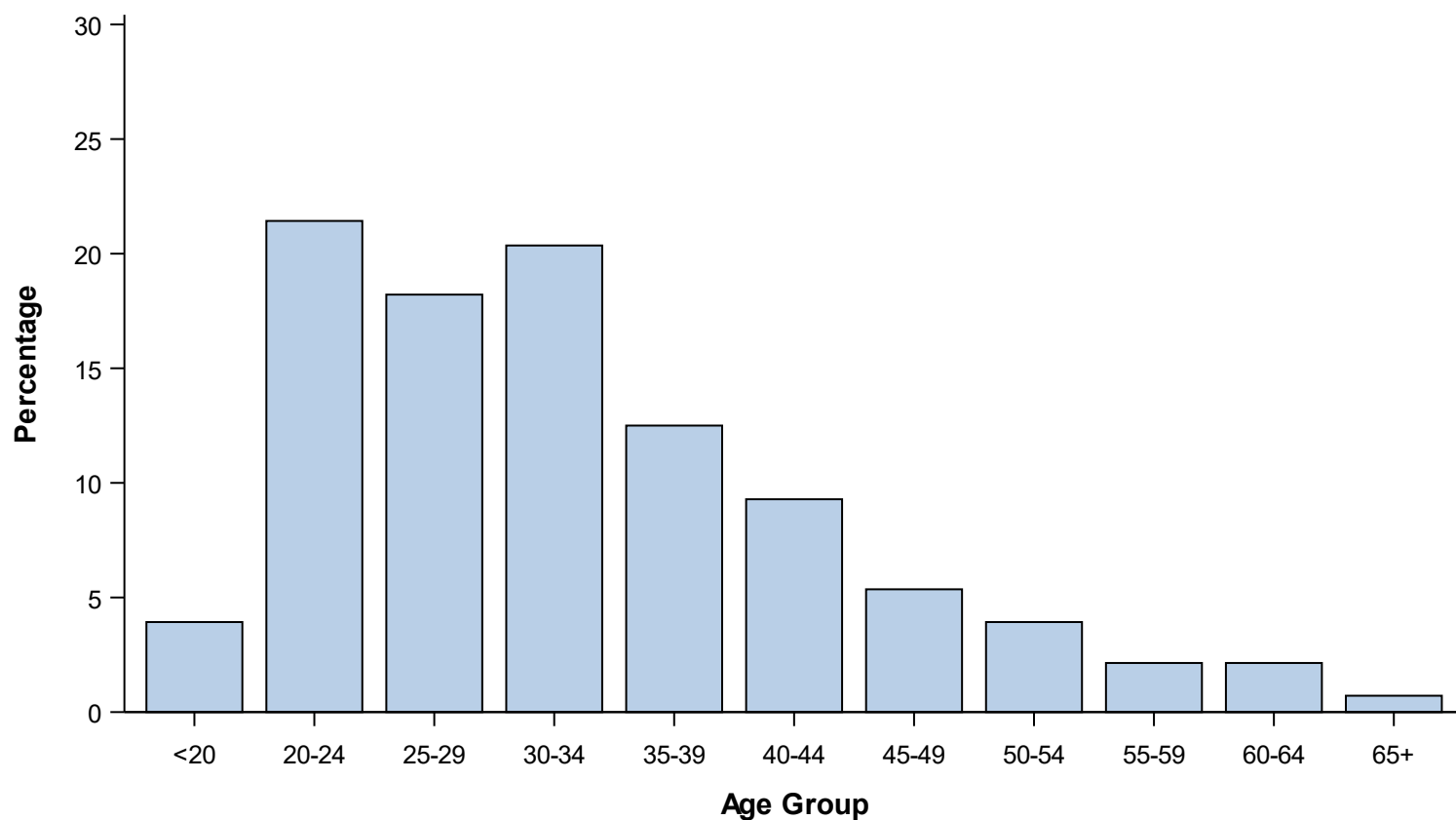


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
3 (1.0)	4 (1.3)	10 (3.3)	43 (14.3)	91 (30.3)	82 (29.1)	52 (20.6)	32 (15.5)	41 (13.9)	22 (7.6)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
61 (20.3)	42 (14.0)	69 (23.0)	76 (25.3)	65 (21.7)	106 (37.5)	116 (38.7)	159 (53.0)	75 (48.4)	86 (44.3)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

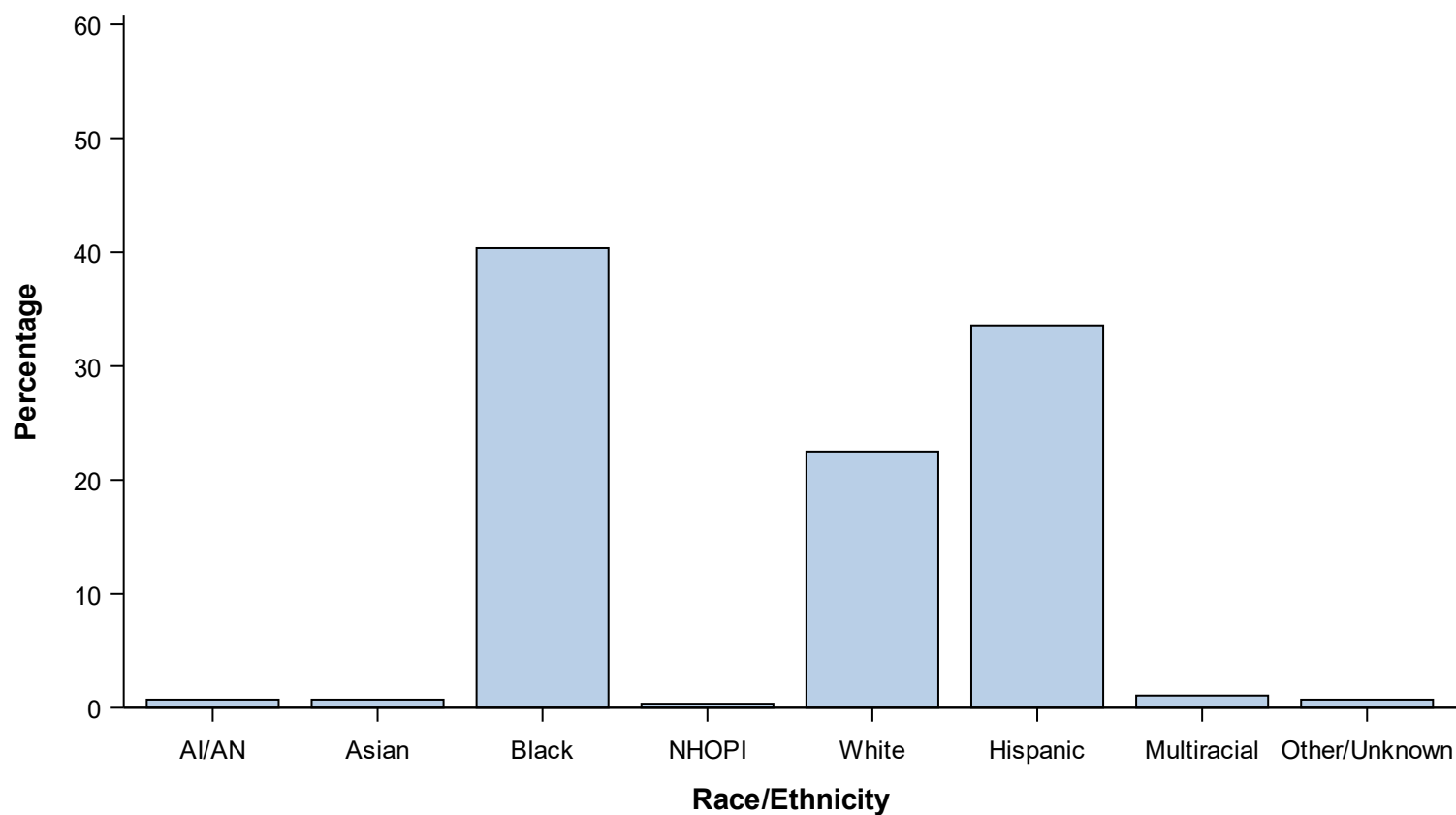
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
11 (3.9)	60 (21.4)	51 (18.2)	57 (20.4)	35 (12.5)	26 (9.3)	15 (5.4)	11 (3.9)	6 (2.1)	6 (2.1)	2 (0.7)	280

Note: Cases with unknown age were excluded.

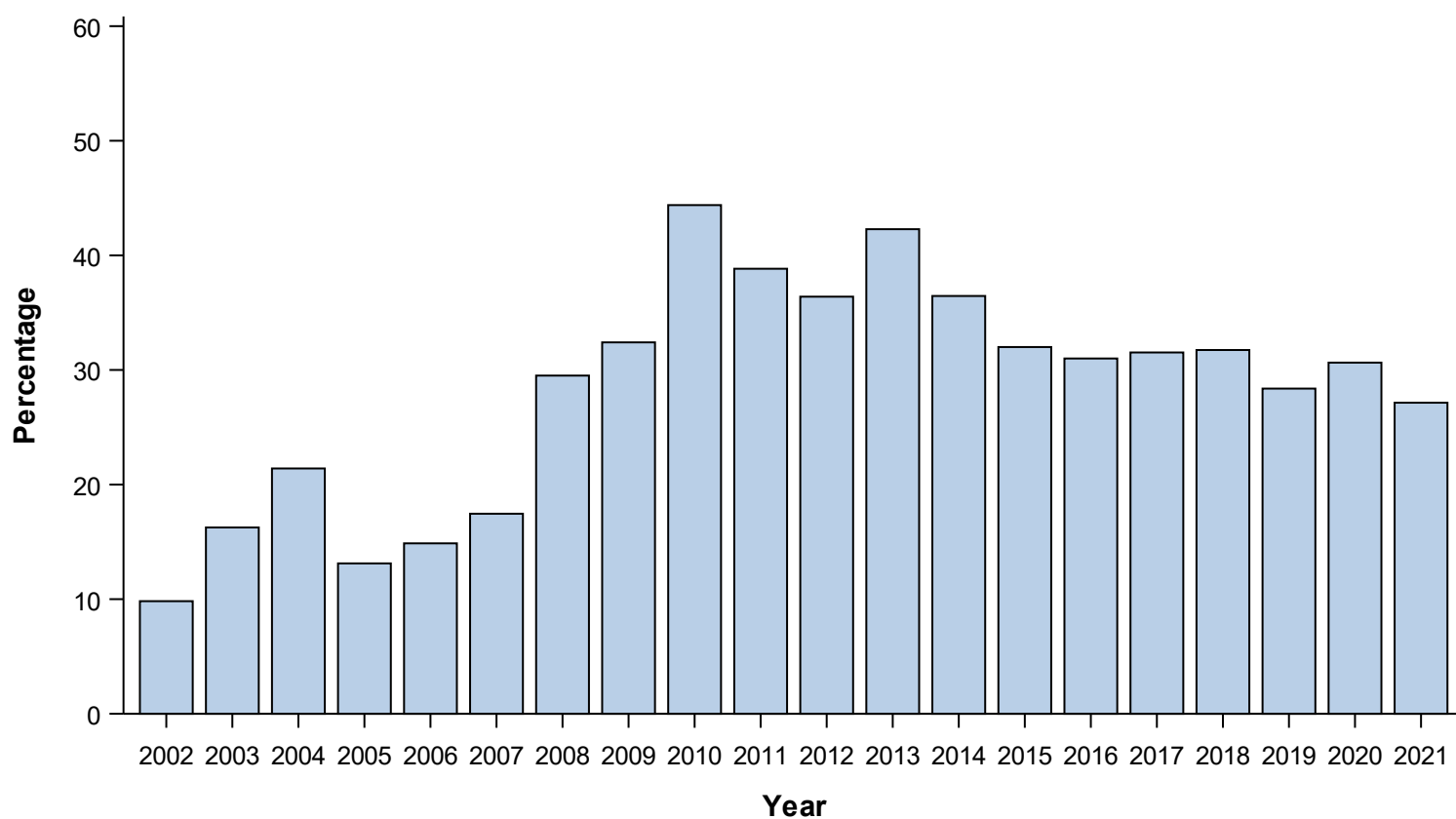
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
2 (0.7)	2 (0.7)	113 (40.4)	1 (0.4)	63 (22.5)	94 (33.6)	3 (1.1)	2 (0.7)	280

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Phoenix, Arizona, 2002-2021

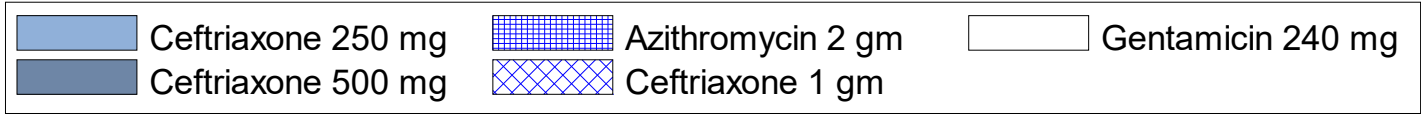
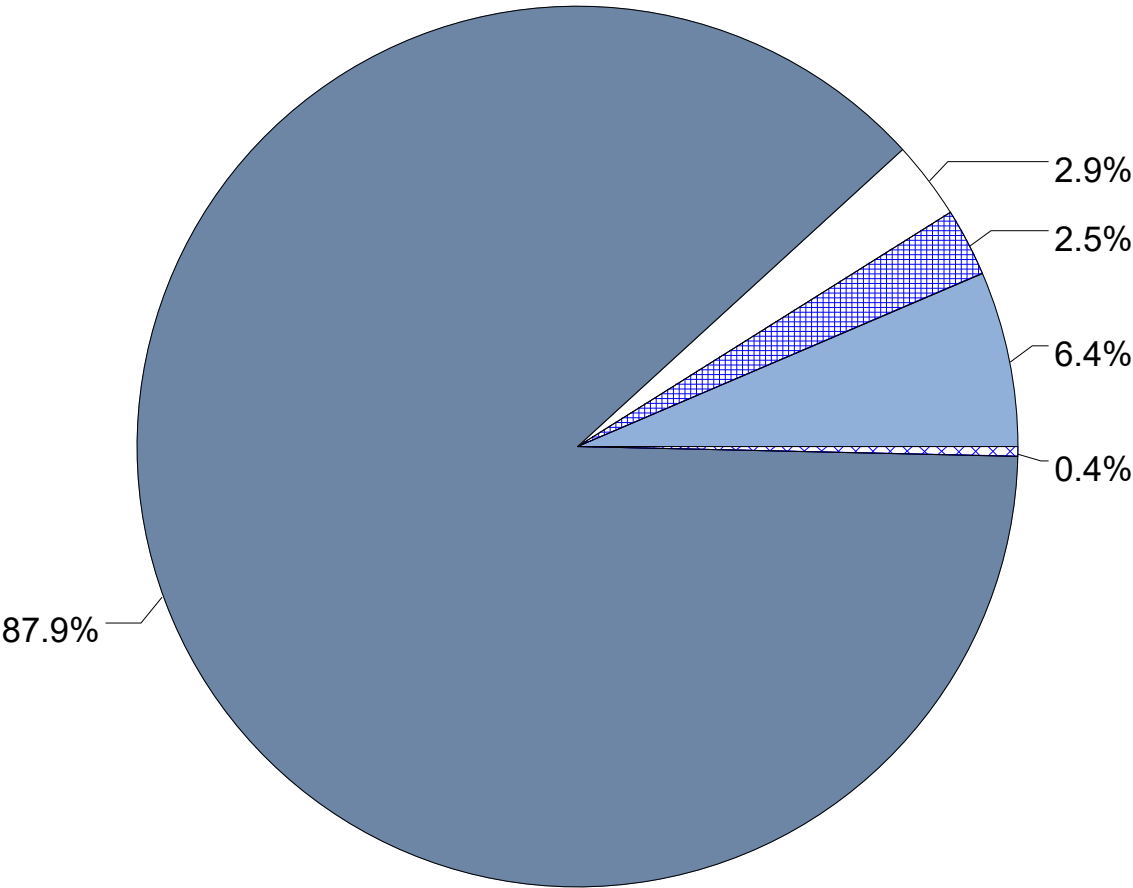


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
28 (9.8)	33 (16.3)	61 (21.4)	37 (13.1)	40 (14.9)	48 (17.5)	72 (29.5)	70 (32.4)	83 (44.4)	113 (38.8)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
107 (36.4)	126 (42.3)	109 (36.5)	96 (32.0)	93 (31.0)	93 (31.5)	93 (31.7)	82 (28.4)	91 (30.6)	76 (27.1)

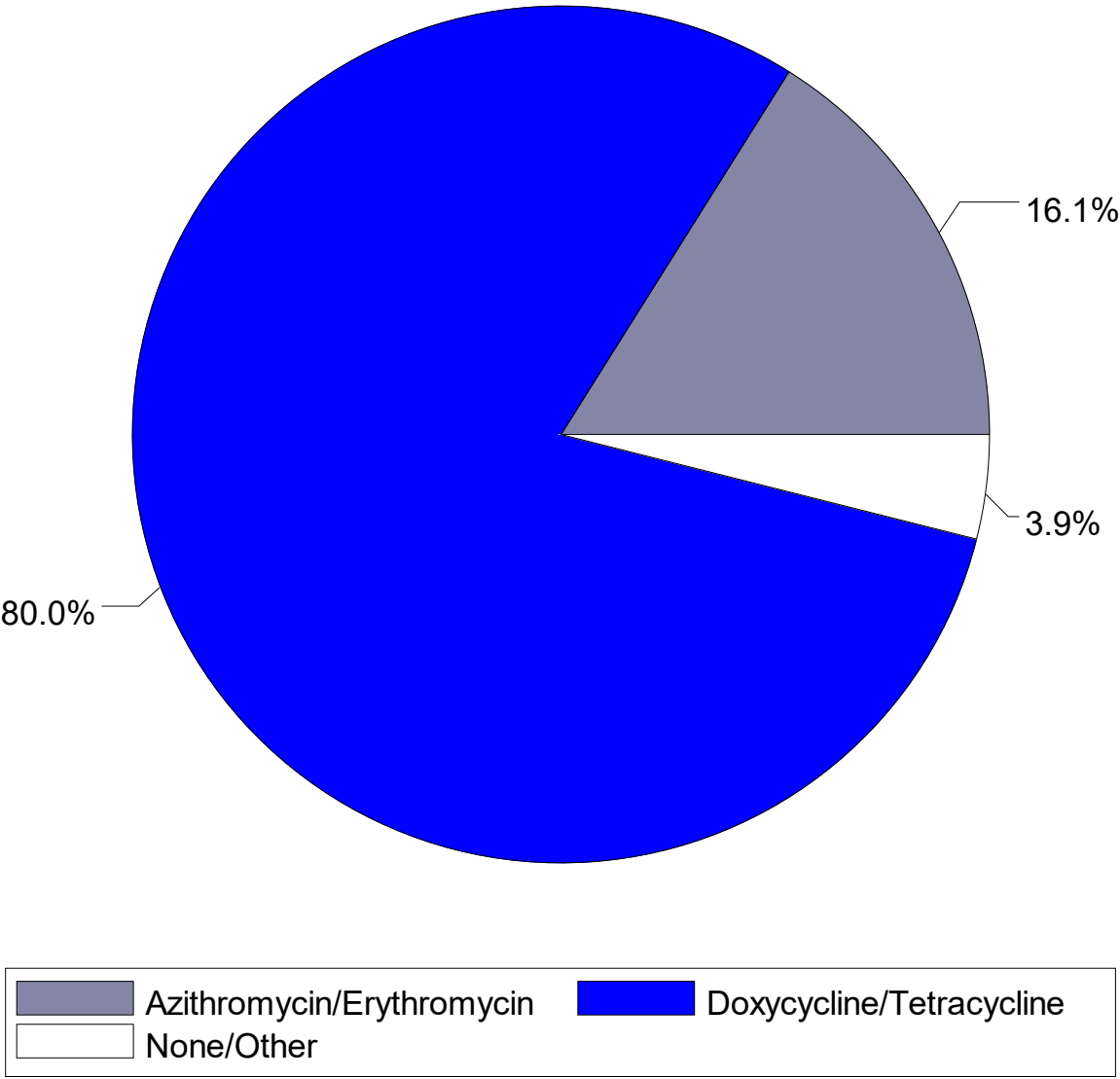
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2021



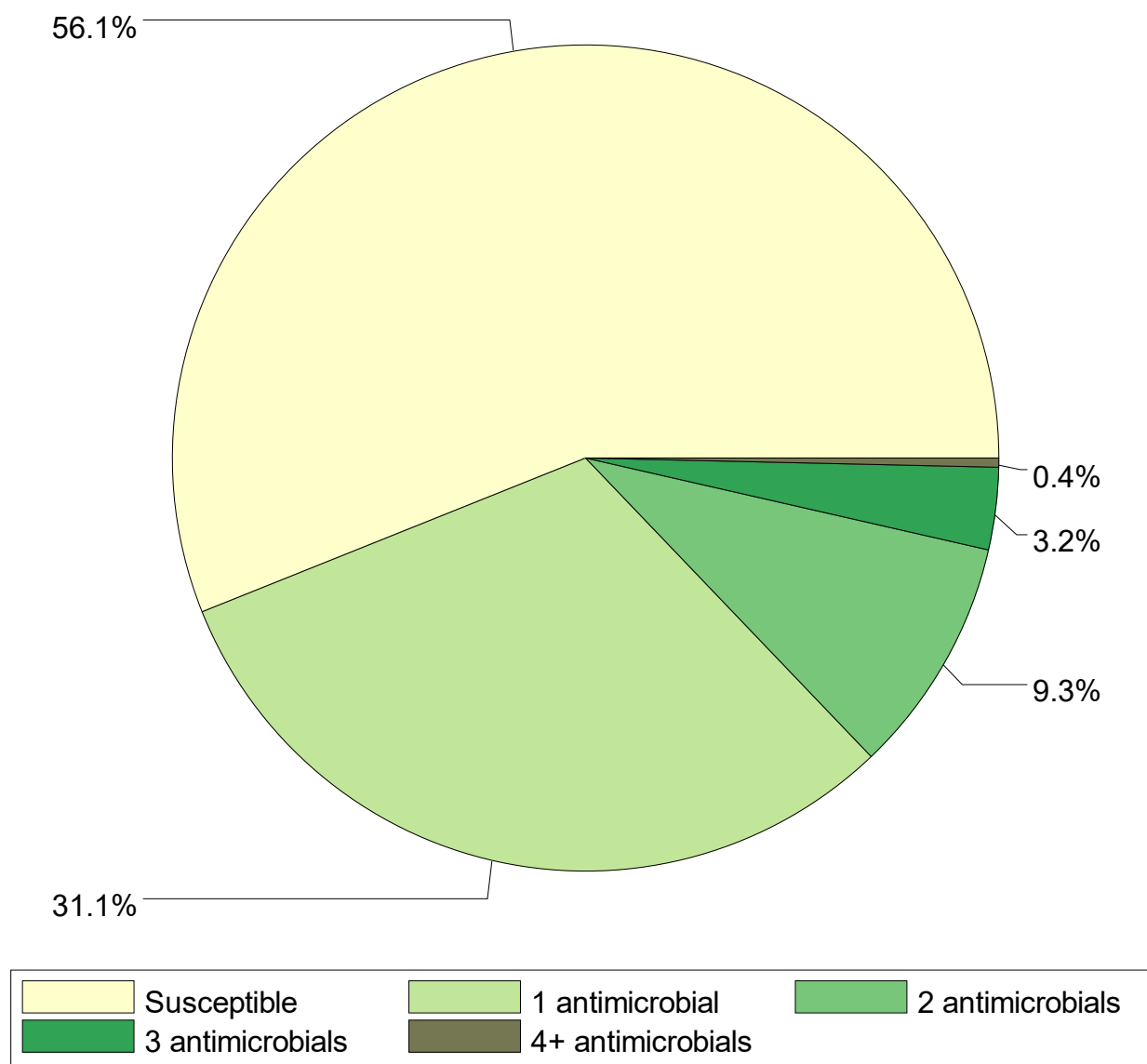
Primary Treatment	Count	Percentage
Ceftriaxone 250 mg	18	6.4
Azithromycin 2 gm	7	2.5
Gentamicin 240 mg	8	2.9
Ceftriaxone 500 mg	246	87.9
Ceftriaxone 1 gm	1	0.4

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	45	16.1
Doxycycline/Tetracycline	224	80.0
None/Other	11	3.9

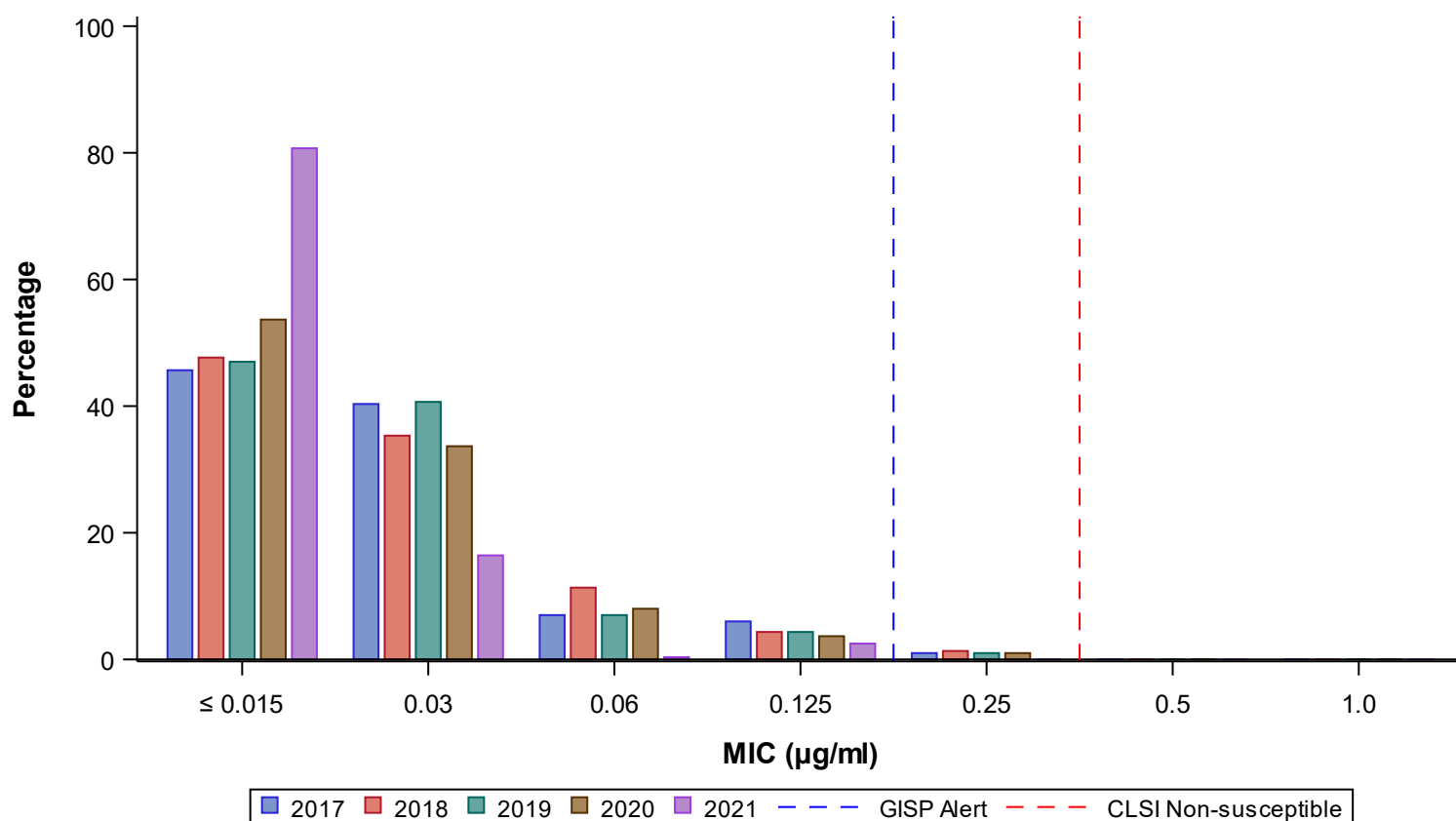
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	157	56.1
1 antimicrobial	87	31.1
2 antimicrobials	26	9.3
3 antimicrobials	9	3.2
4+ antimicrobials	1	0.4

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2017-2021



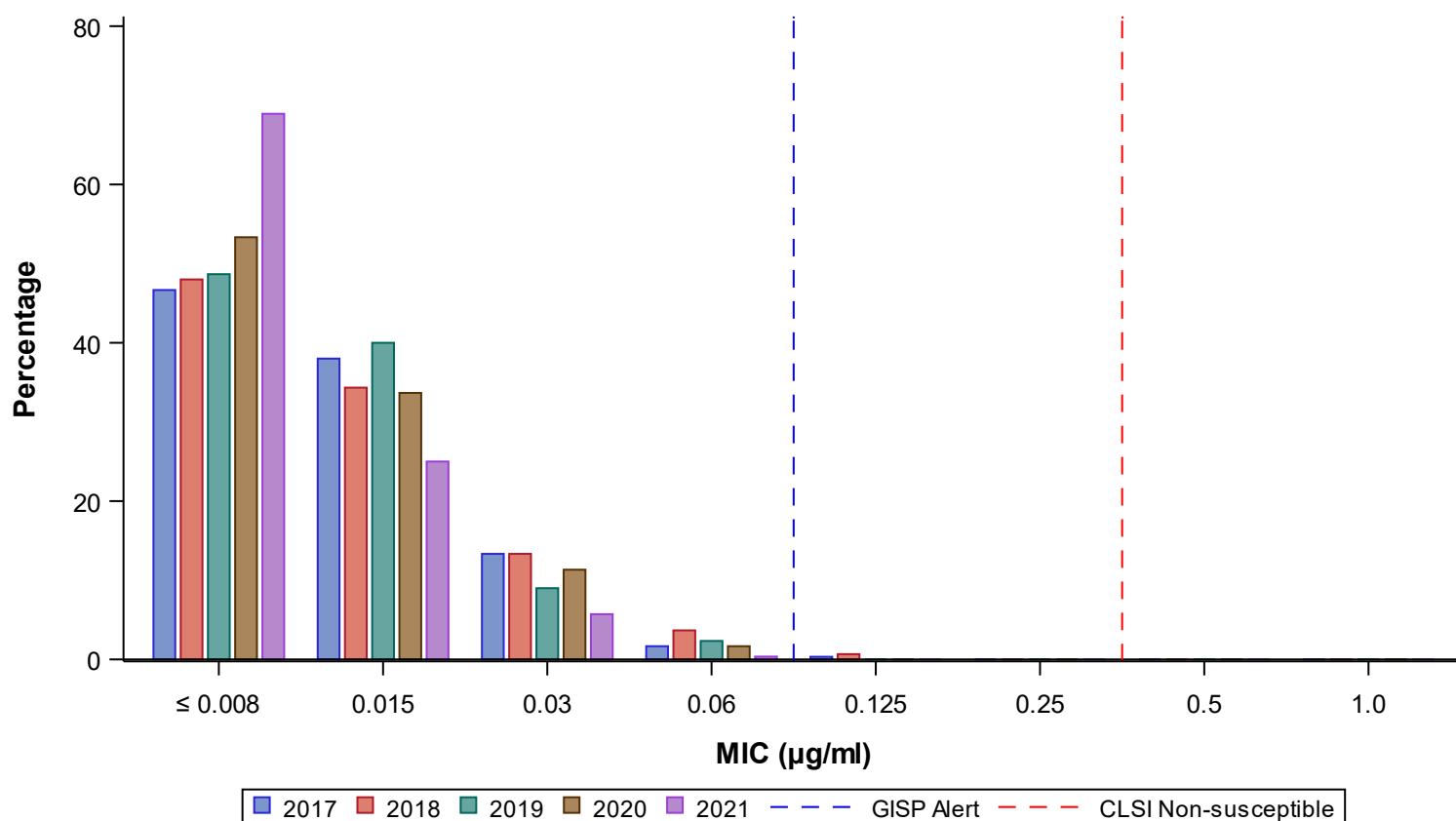
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	137 (45.7)	121 (40.3)	21 (7.0)	18 (6.0)	3 (1.0)	0 (0.0)	0 (0.0)	300
2018	143 (47.7)	106 (35.3)	34 (11.3)	13 (4.3)	4 (1.3)	0 (0.0)	0 (0.0)	300
2019	141 (47.0)	122 (40.7)	21 (7.0)	13 (4.3)	3 (1.0)	0 (0.0)	0 (0.0)	300
2020	161 (53.7)	101 (33.7)	24 (8.0)	11 (3.7)	3 (1.0)	0 (0.0)	0 (0.0)	300
2021	226 (80.7)	46 (16.4)	1 (0.4)	7 (2.5)	0 (0.0)	0 (0.0)	0 (0.0)	280

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2017-2021



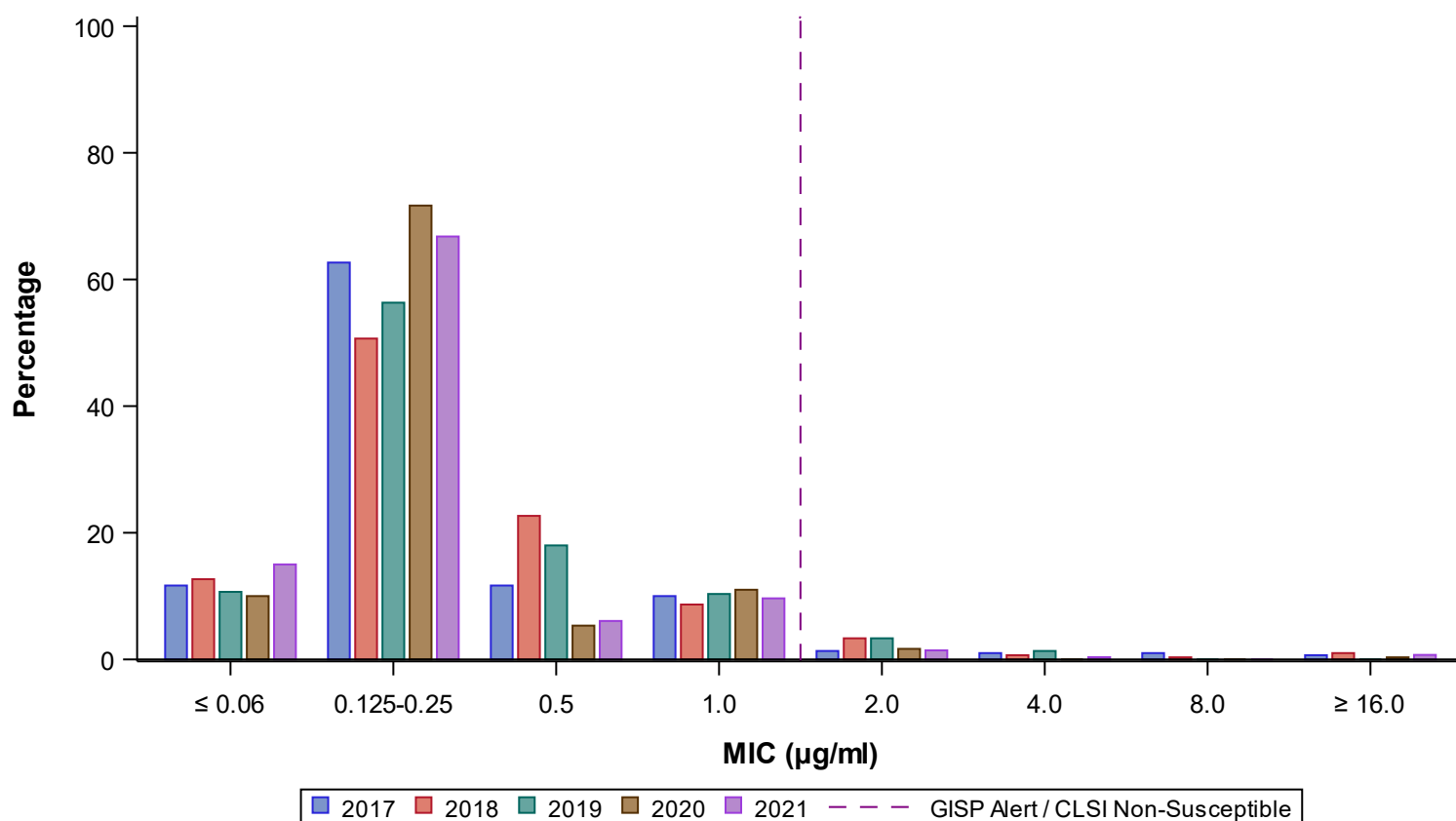
Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	140 (46.7)	114 (38.0)	40 (13.3)	5 (1.7)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	300
2018	144 (48.0)	103 (34.3)	40 (13.3)	11 (3.7)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	300
2019	146 (48.7)	120 (40.0)	27 (9.0)	7 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2020	160 (53.3)	101 (33.7)	34 (11.3)	5 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2021	193 (68.9)	70 (25.0)	16 (5.7)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	280

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	35 (11.7)	188 (62.7)	35 (11.7)	30 (10.0)	4 (1.3)	3 (1.0)	3 (1.0)	2 (0.7)	300
2018	38 (12.7)	152 (50.7)	68 (22.7)	26 (8.7)	10 (3.3)	2 (0.7)	1 (0.3)	3 (1.0)	300
2019	32 (10.7)	169 (56.3)	54 (18.0)	31 (10.3)	10 (3.3)	4 (1.3)	0 (0.0)	0 (0.0)	300
2020	30 (10.0)	215 (71.7)	16 (5.3)	33 (11.0)	5 (1.7)	0 (0.0)	0 (0.0)	1 (0.3)	300
2021	42 (15.0)	187 (66.8)	17 (6.1)	27 (9.6)	4 (1.4)	1 (0.4)	0 (0.0)	2 (0.7)	280

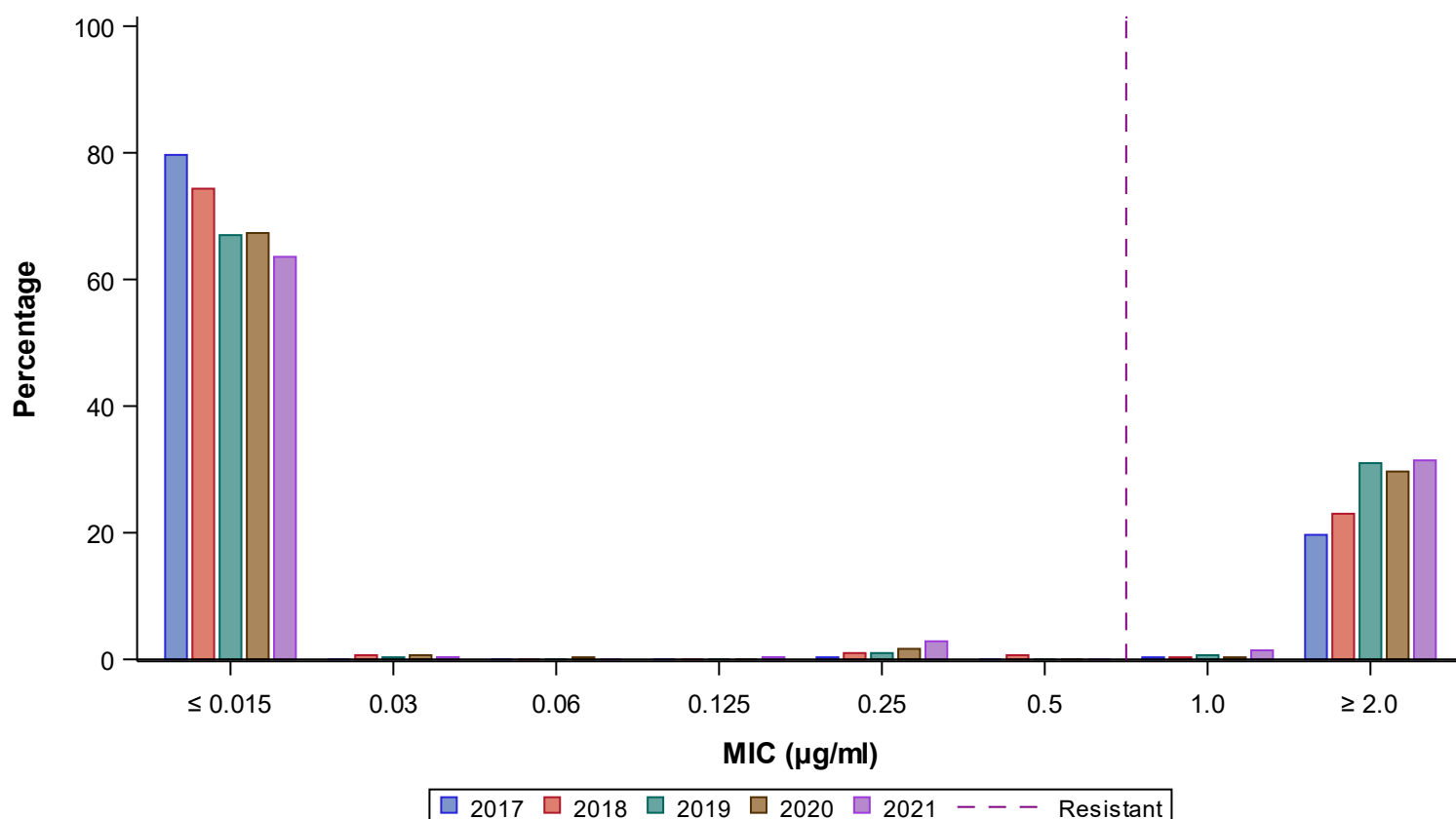
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

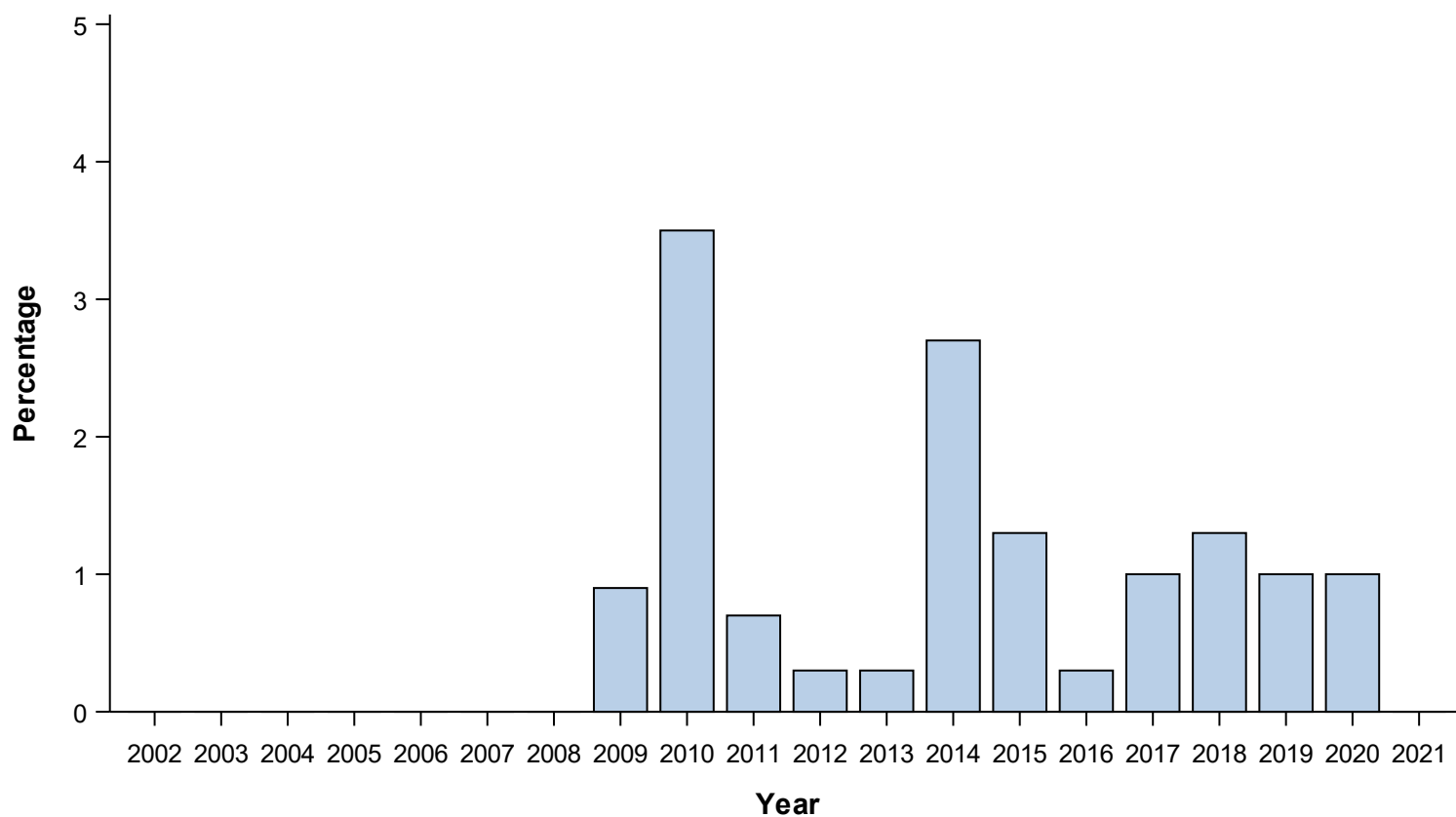
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	239 (79.7)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.3)	0 (0.0)	1 (0.3)	59 (19.7)	300
2018	223 (74.3)	2 (0.7)	0 (0.0)	0 (0.0)	3 (1.0)	2 (0.7)	1 (0.3)	69 (23.0)	300
2019	201 (67.0)	1 (0.3)	0 (0.0)	0 (0.0)	3 (1.0)	0 (0.0)	2 (0.7)	93 (31.0)	300
2020	202 (67.3)	2 (0.7)	1 (0.3)	0 (0.0)	5 (1.7)	0 (0.0)	1 (0.3)	89 (29.7)	300
2021	178 (63.6)	1 (0.4)	0 (0.0)	1 (0.4)	8 (2.9)	0 (0.0)	4 (1.4)	88 (31.4)	280

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2002-2021

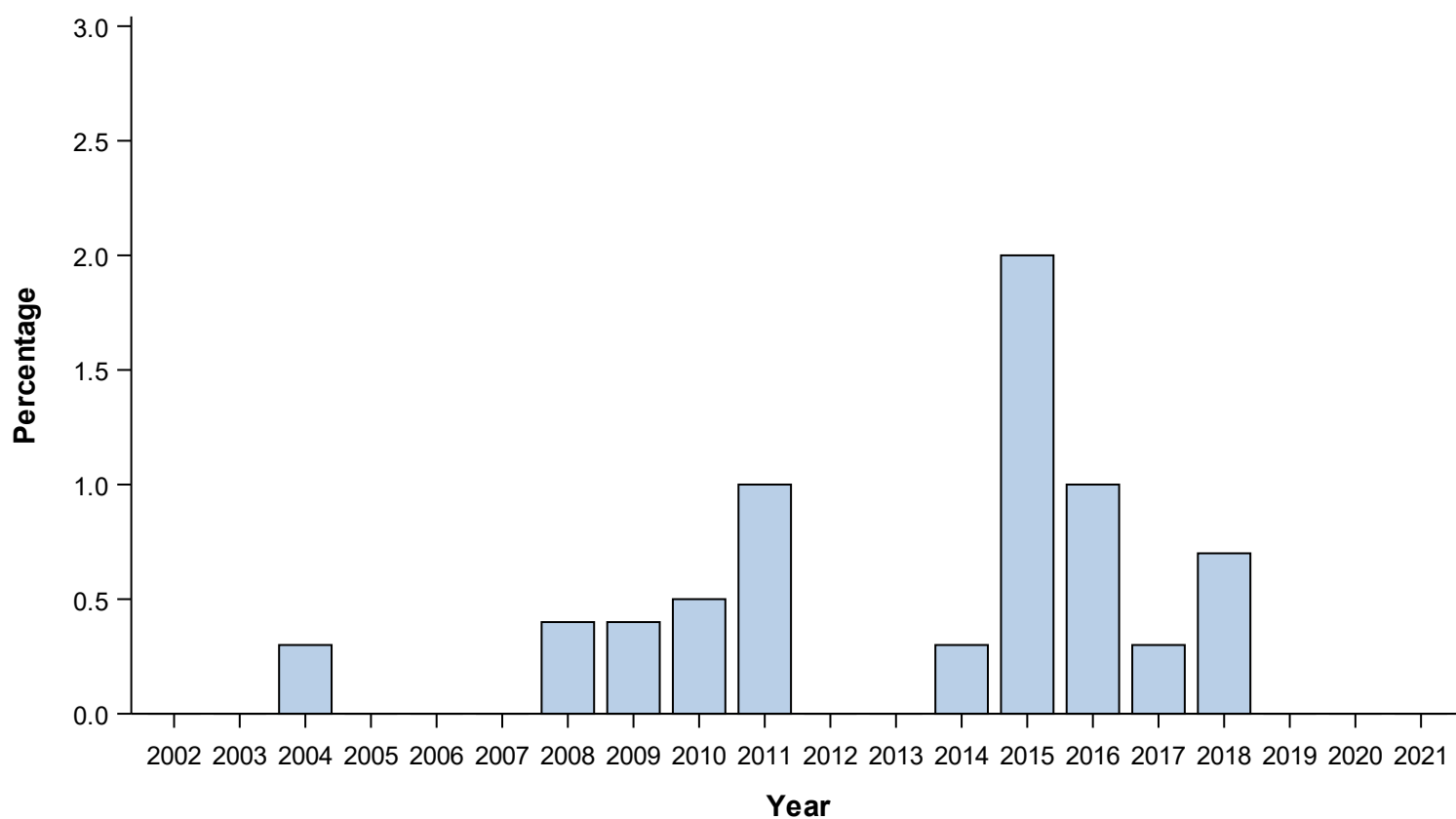


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.9)	7 (3.5)	2 (0.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.3)	1 (0.3)	8 (2.7)	4 (1.3)	1 (0.3)	3 (1.0)	4 (1.3)	3 (1.0)	3 (1.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2002-2021

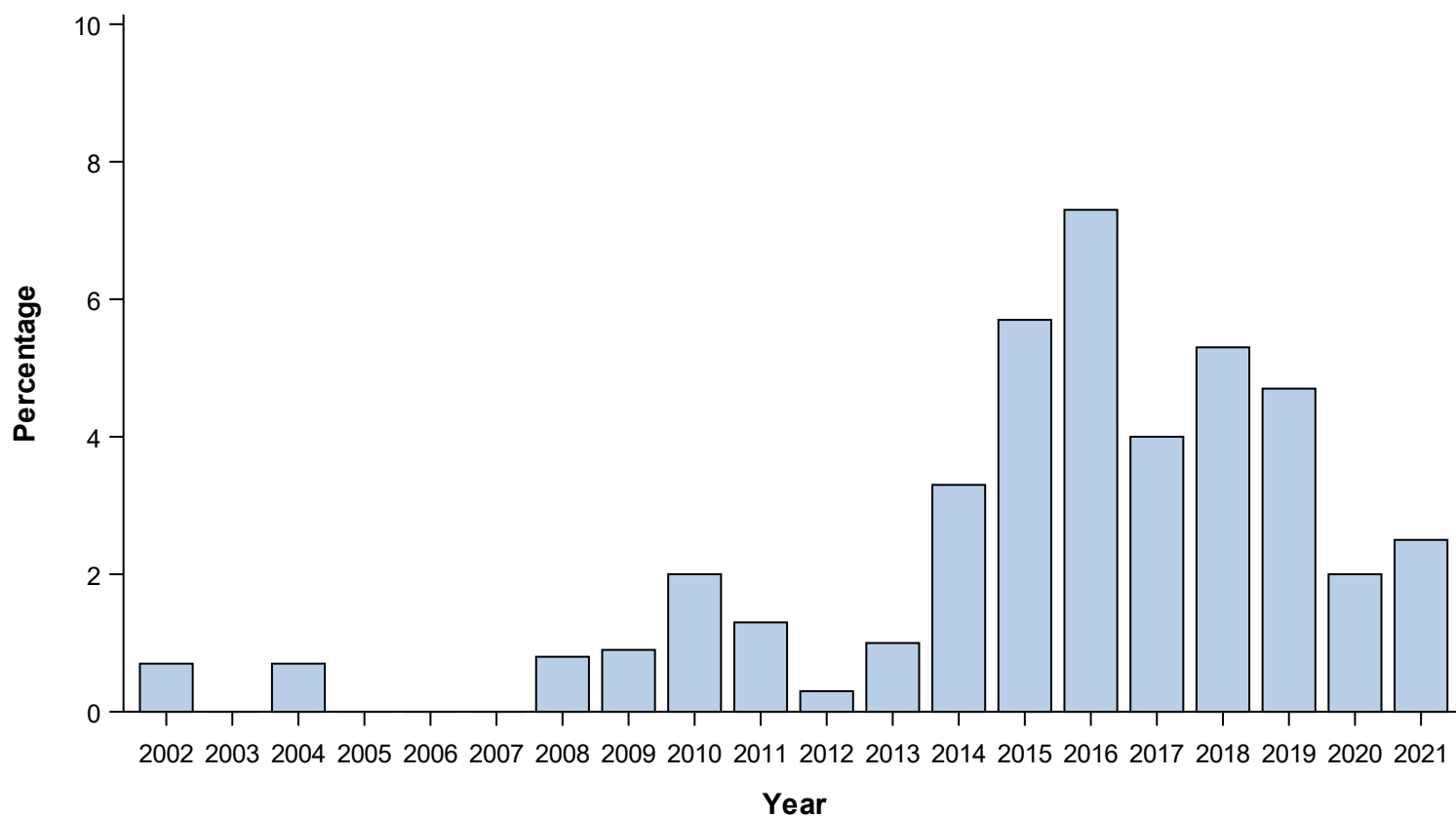


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	1 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	1 (0.4)	1 (0.5)	3 (1.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	1 (0.3)	6 (2.0)	3 (1.0)	1 (0.3)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Phoenix, Arizona, 2002-2021

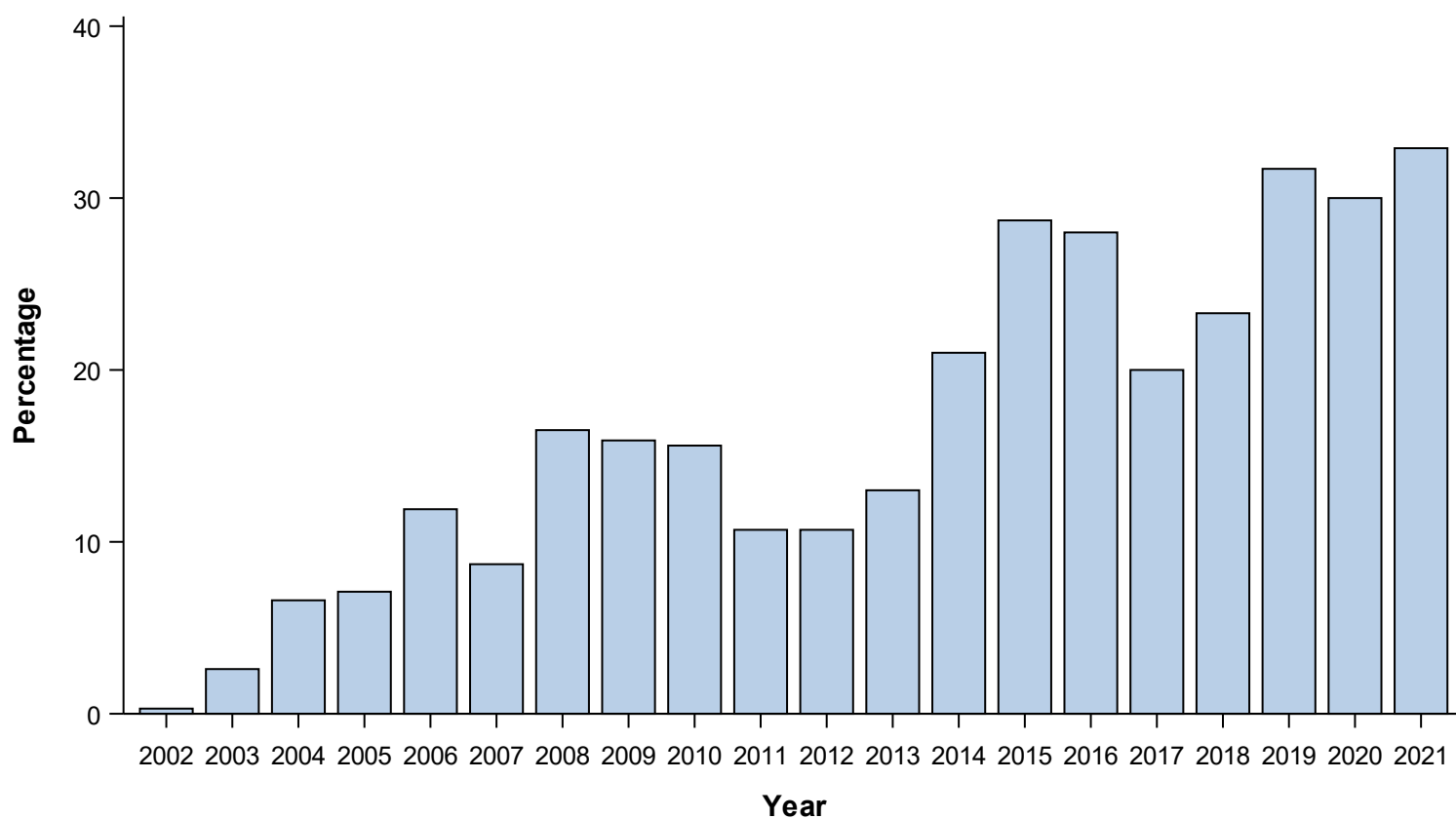


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
2 (0.7)	0 (0.0)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.8)	2 (0.9)	4 (2.0)	4 (1.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.3)	3 (1.0)	10 (3.3)	17 (5.7)	22 (7.3)	12 (4.0)	16 (5.3)	14 (4.7)	6 (2.0)	7 (2.5)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Phoenix, Arizona, 2002-2021

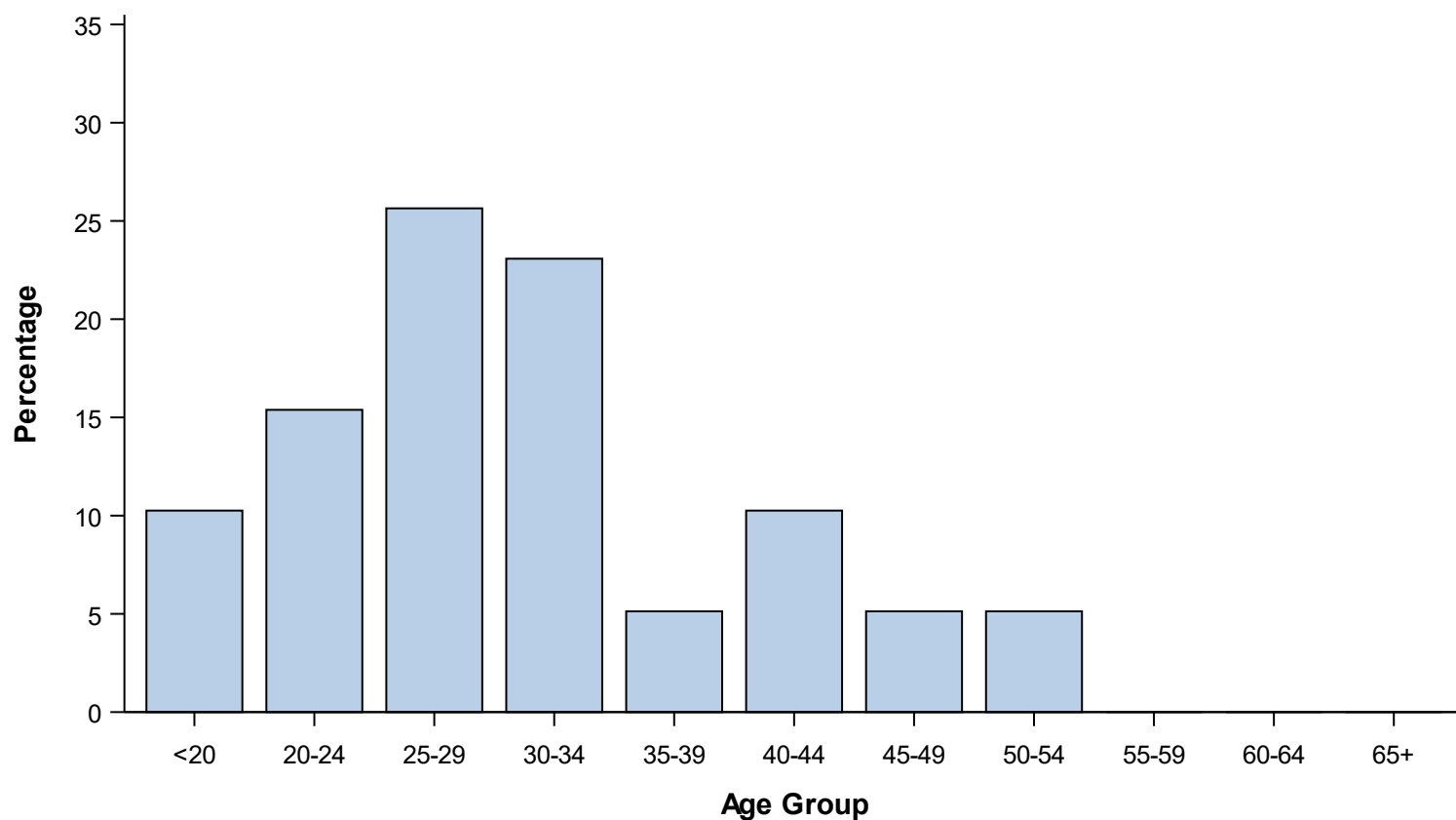


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (0.3)	6 (2.6)	19 (6.6)	20 (7.1)	32 (11.9)	24 (8.7)	41 (16.5)	36 (15.9)	31 (15.6)	32 (10.7)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
32 (10.7)	39 (13.0)	63 (21.0)	86 (28.7)	84 (28.0)	60 (20.0)	70 (23.3)	95 (31.7)	90 (30.0)	92 (32.9)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

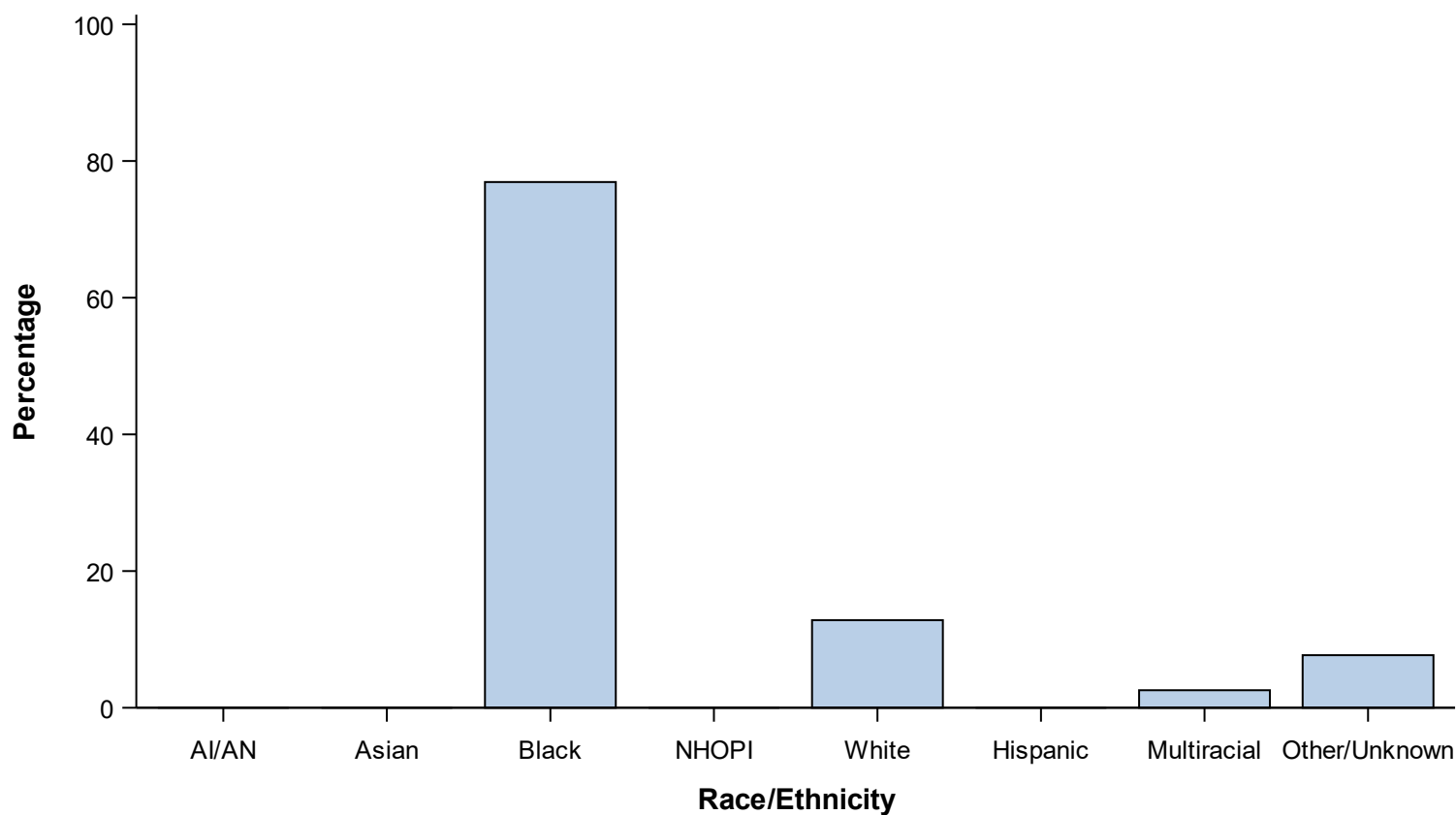
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
4 (10.3)	6 (15.4)	10 (25.6)	9 (23.1)	2 (5.1)	4 (10.3)	2 (5.1)	2 (5.1)	0 (0.0)	0 (0.0)	0 (0.0)	39

Note: Cases with unknown age were excluded.

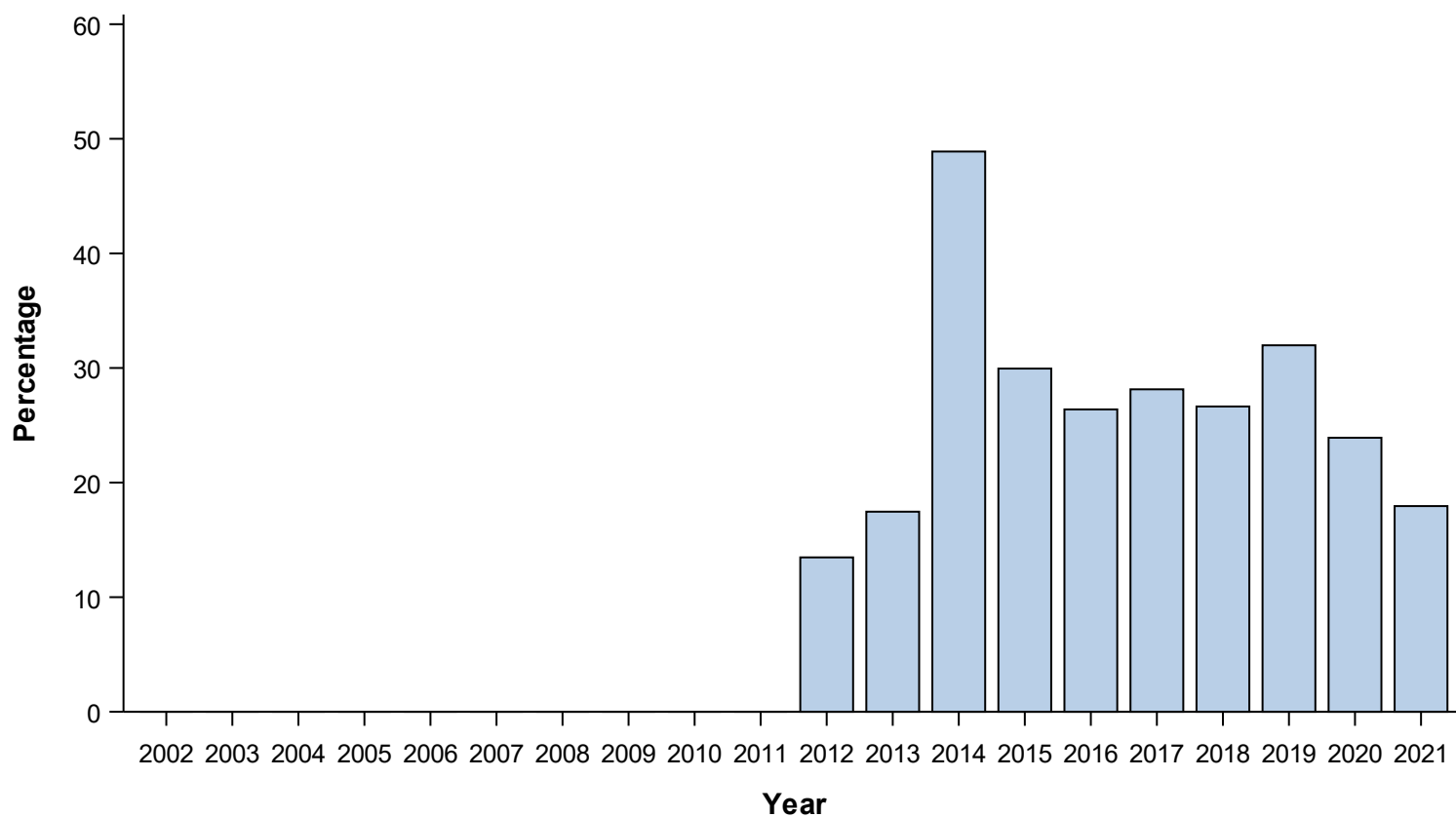
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	30 (76.9)	0 (0.0)	5 (12.8)	0 (0.0)	1 (2.6)	3 (7.7)	39

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Pontiac, Michigan, 2002-2021



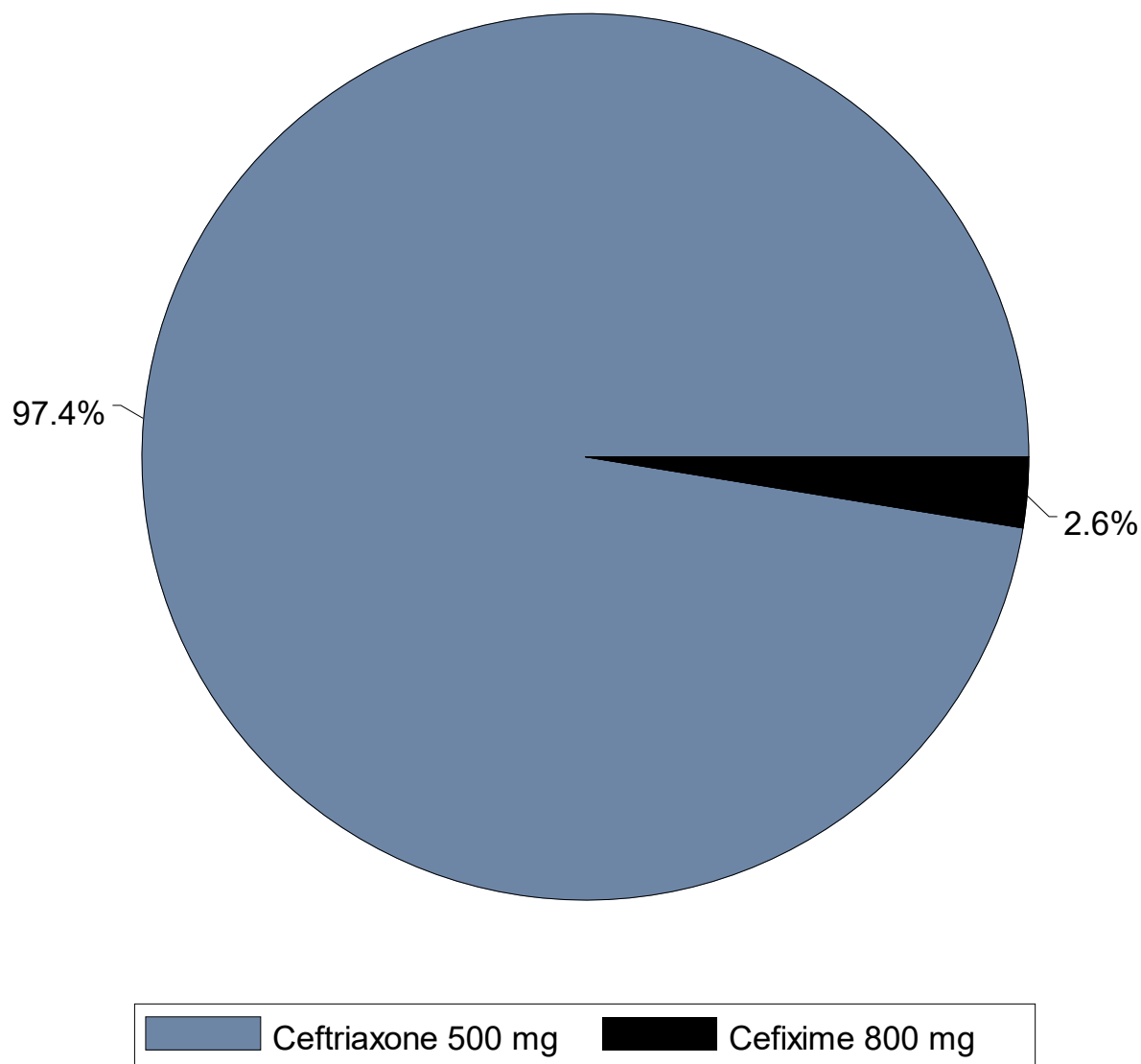
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
26 (13.5)	33 (17.5)	66 (48.9)	59 (29.9)	62 (26.4)	65 (28.1)	65 (26.6)	63 (32.0)	11 (23.9)	7 (17.9)

Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

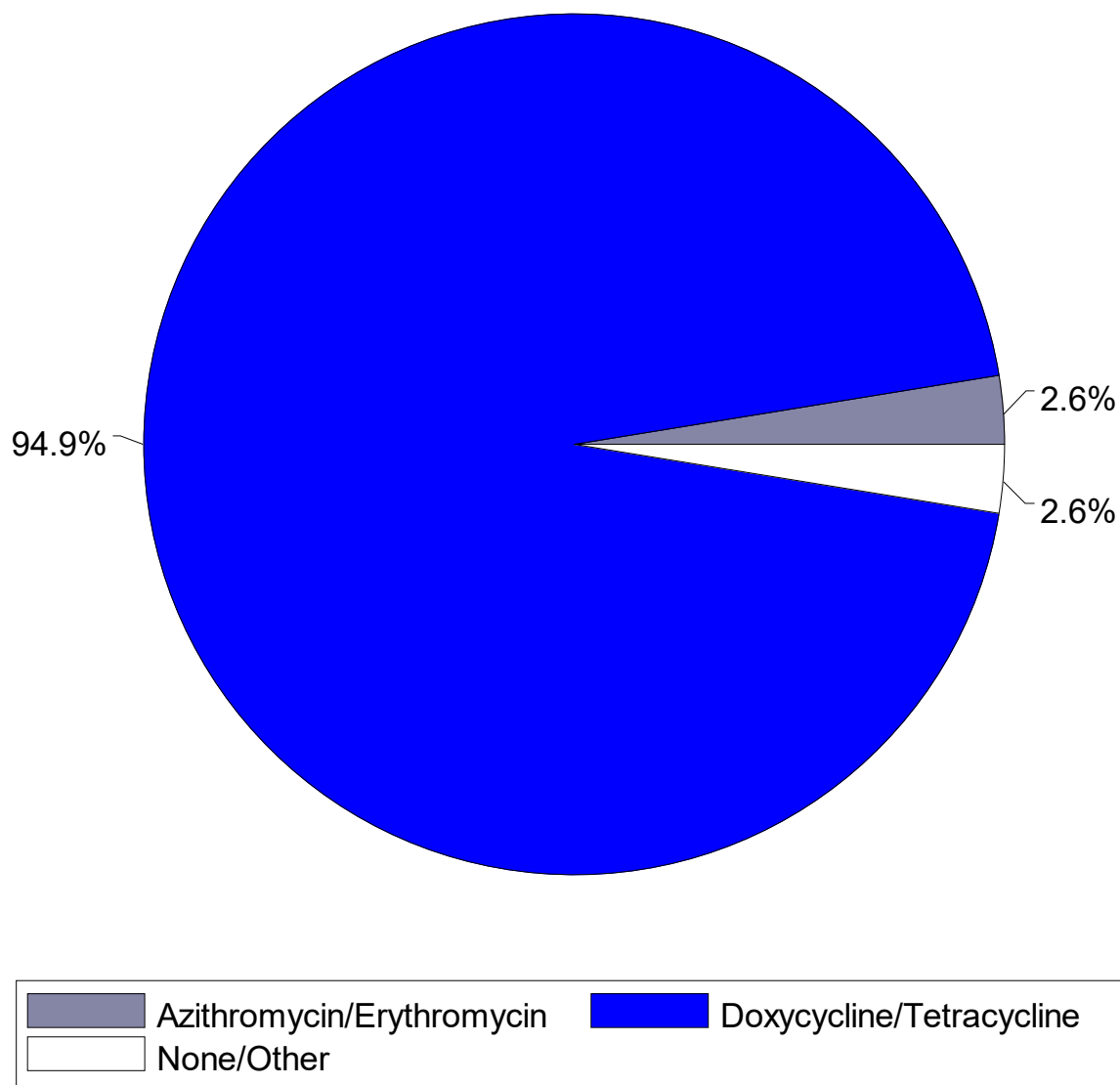
Site participated in GISP during 2012-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2021



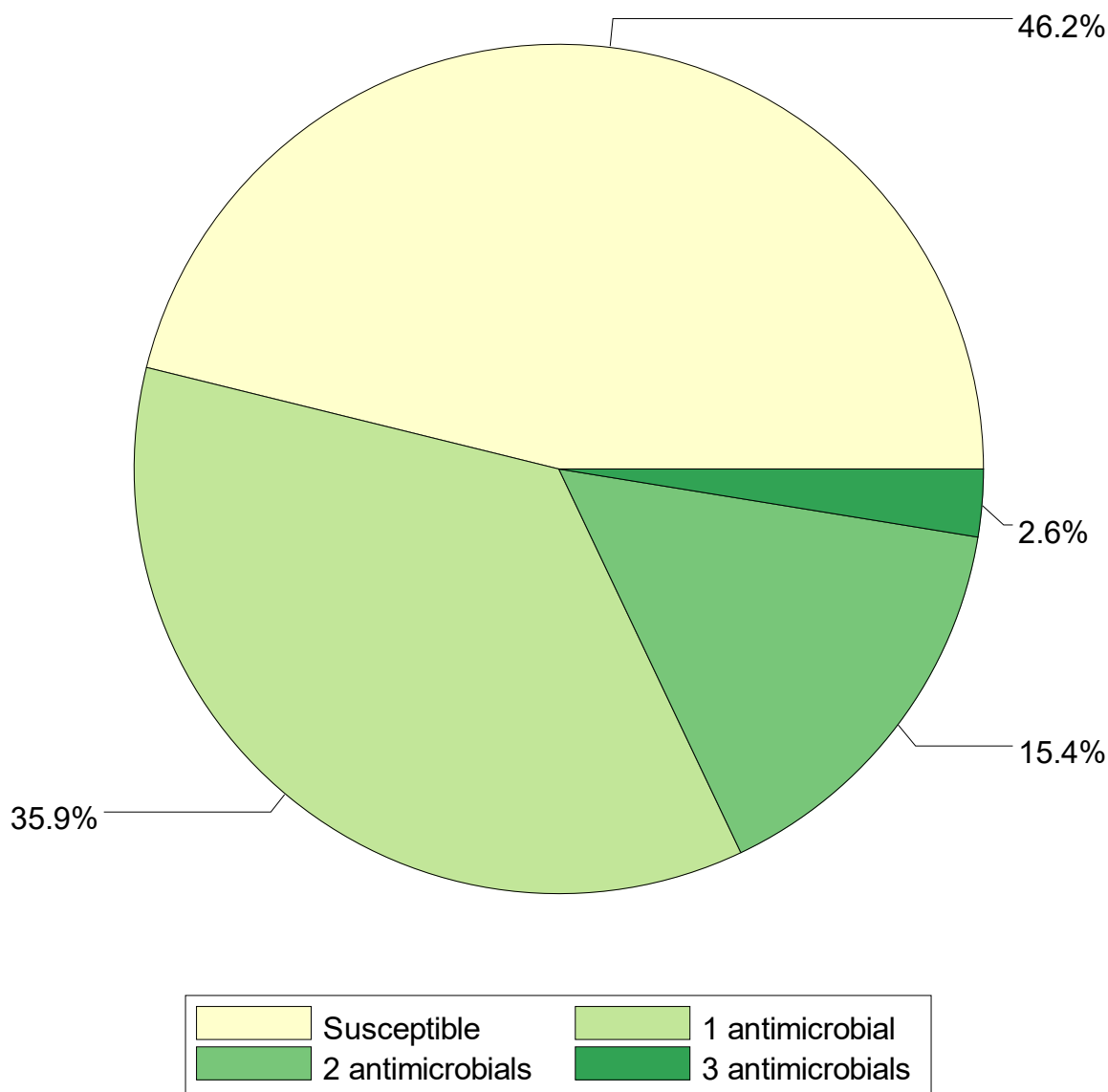
Primary Treatment	Count	Percentage
Ceftriaxone 500 mg	38	97.4
Cefixime 800 mg	1	2.6

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	1	2.6
Doxycycline/Tetracycline	37	94.9
None/Other	1	2.6

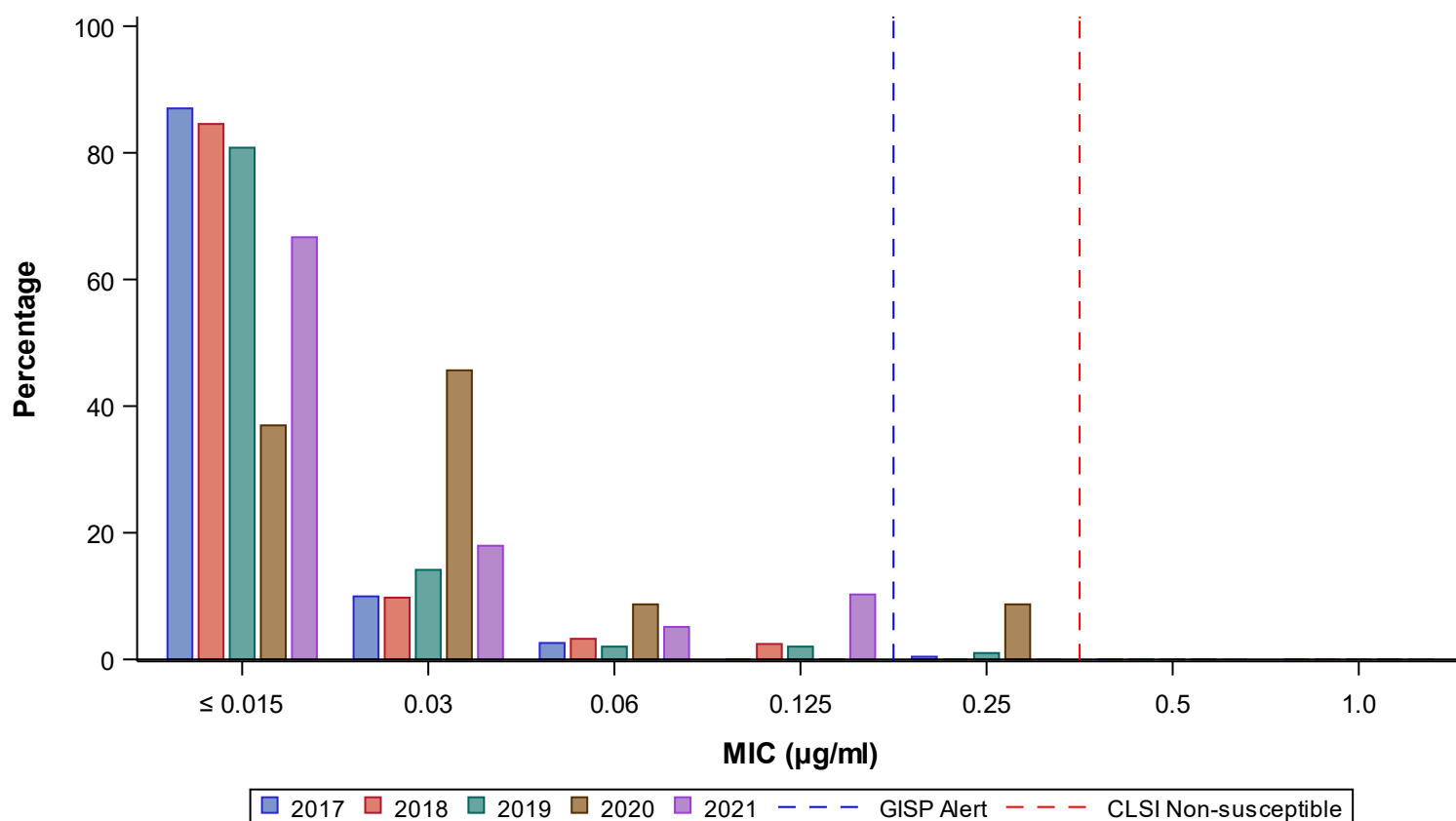
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	18	46.2
1 antimicrobial	14	35.9
2 antimicrobials	6	15.4
3 antimicrobials	1	2.6
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC $\geq$ 0.125 μ g/mL; Cefixime: MIC $\geq$ 0.25 μ g/mL; Azithromycin: MIC $\geq$ 2.0 μ g/ml; Resistance = Tetracycline: MIC $\geq$ 2.0 μ g/mL; Ciprofloxacin: MIC $\geq$ 1.0 μ g/mL; Penicillin: MIC $\geq$ 2.0 μ g/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2017-2021



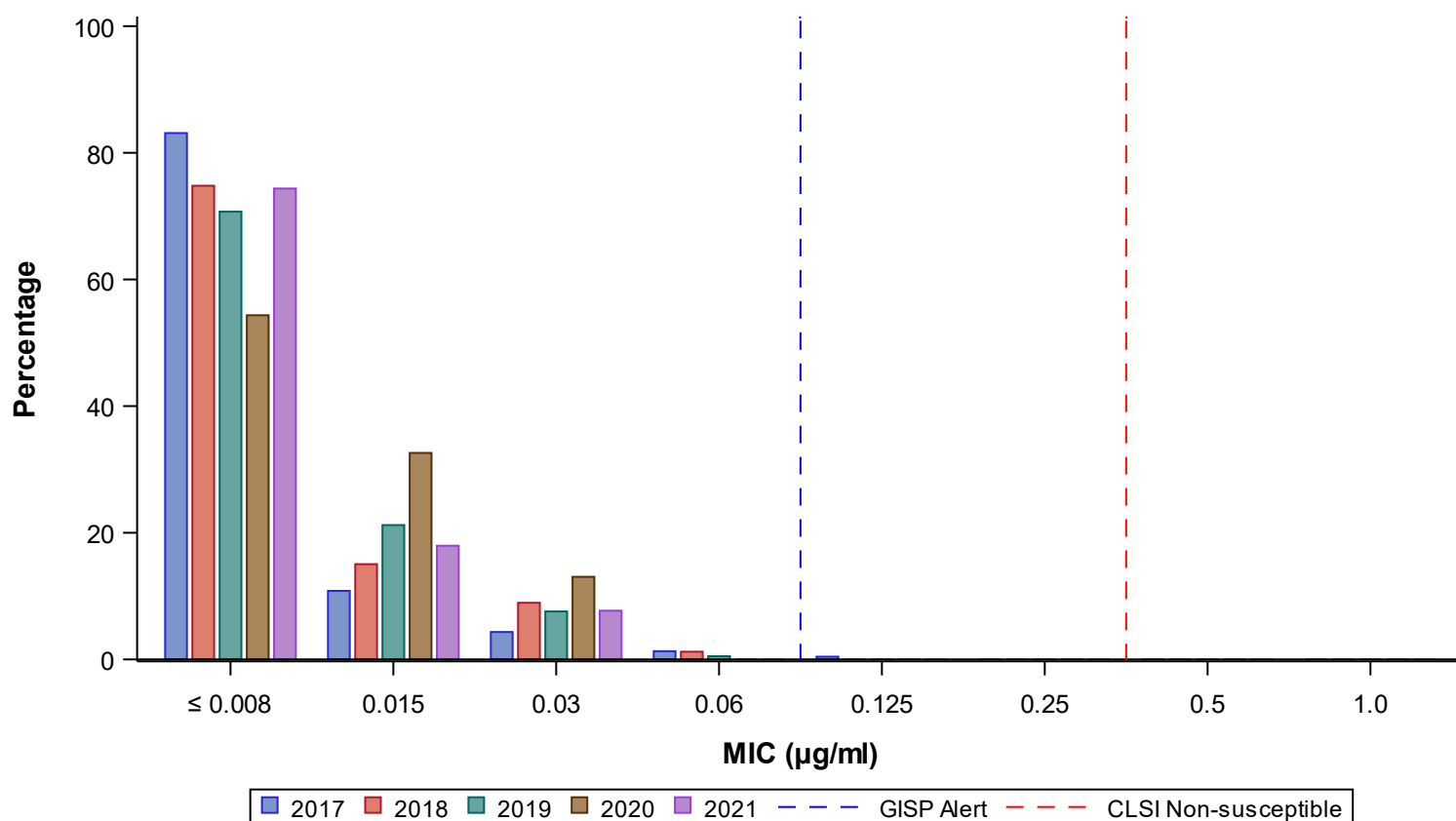
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	201 (87.0)	23 (10.0)	6 (2.6)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	231
2018	208 (84.6)	24 (9.8)	8 (3.3)	6 (2.4)	0 (0.0)	0 (0.0)	0 (0.0)	246
2019	160 (80.8)	28 (14.1)	4 (2.0)	4 (2.0)	2 (1.0)	0 (0.0)	0 (0.0)	198
2020	17 (37.0)	21 (45.7)	4 (8.7)	0 (0.0)	4 (8.7)	0 (0.0)	0 (0.0)	46
2021	26 (66.7)	7 (17.9)	2 (5.1)	4 (10.3)	0 (0.0)	0 (0.0)	0 (0.0)	39

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2017-2021



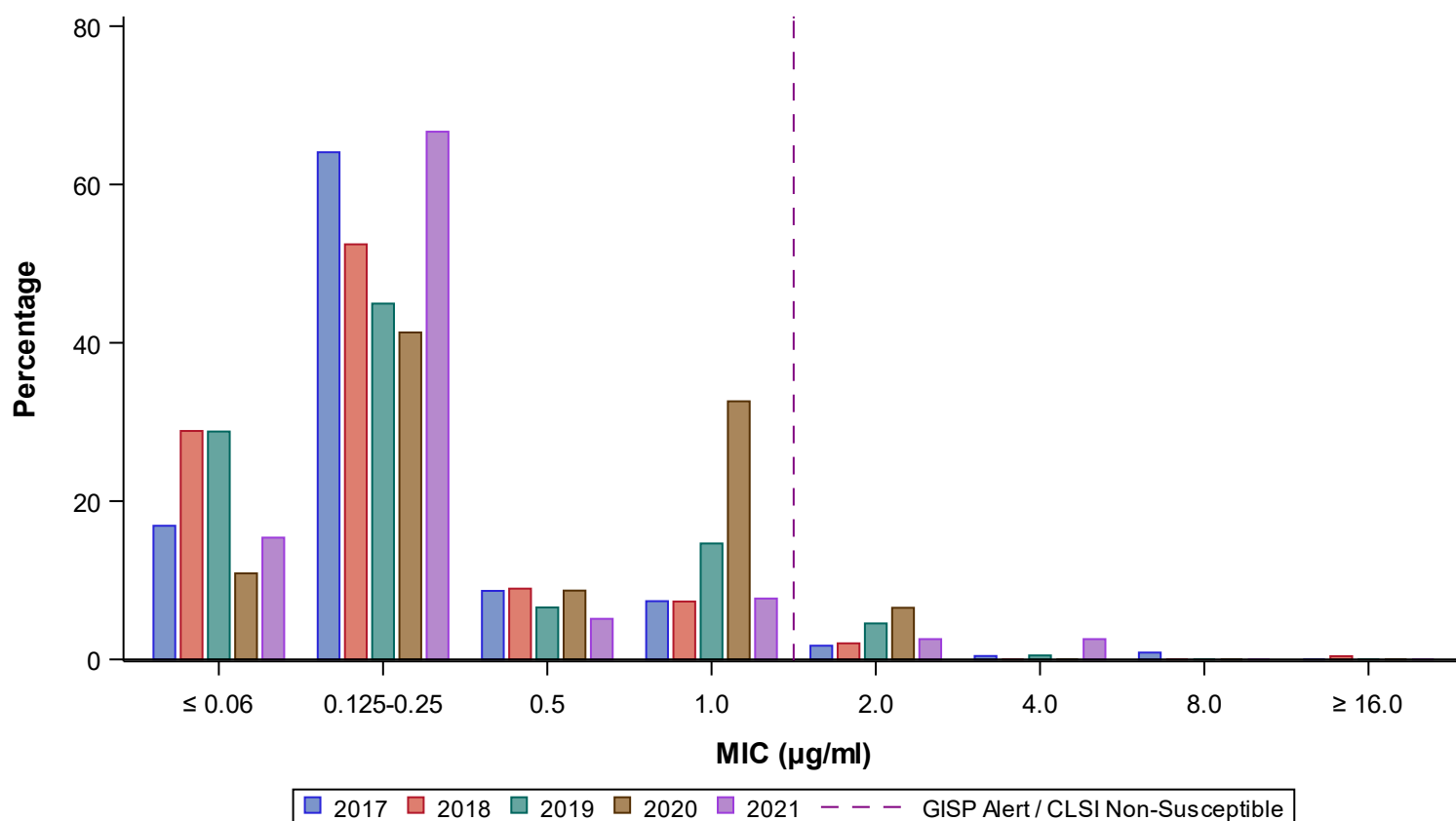
Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	192 (83.1)	25 (10.8)	10 (4.3)	3 (1.3)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	231
2018	184 (74.8)	37 (15.0)	22 (8.9)	3 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	246
2019	140 (70.7)	42 (21.2)	15 (7.6)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	198
2020	25 (54.3)	15 (32.6)	6 (13.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	46
2021	29 (74.4)	7 (17.9)	3 (7.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	39

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	39 (16.9)	148 (64.1)	20 (8.7)	17 (7.4)	4 (1.7)	1 (0.4)	2 (0.9)	0 (0.0)	231
2018	71 (28.9)	129 (52.4)	22 (8.9)	18 (7.3)	5 (2.0)	0 (0.0)	0 (0.0)	1 (0.4)	246
2019	57 (28.8)	89 (44.9)	13 (6.6)	29 (14.6)	9 (4.5)	1 (0.5)	0 (0.0)	0 (0.0)	198
2020	5 (10.9)	19 (41.3)	4 (8.7)	15 (32.6)	3 (6.5)	0 (0.0)	0 (0.0)	0 (0.0)	46
2021	6 (15.4)	26 (66.7)	2 (5.1)	3 (7.7)	1 (2.6)	1 (2.6)	0 (0.0)	0 (0.0)	39

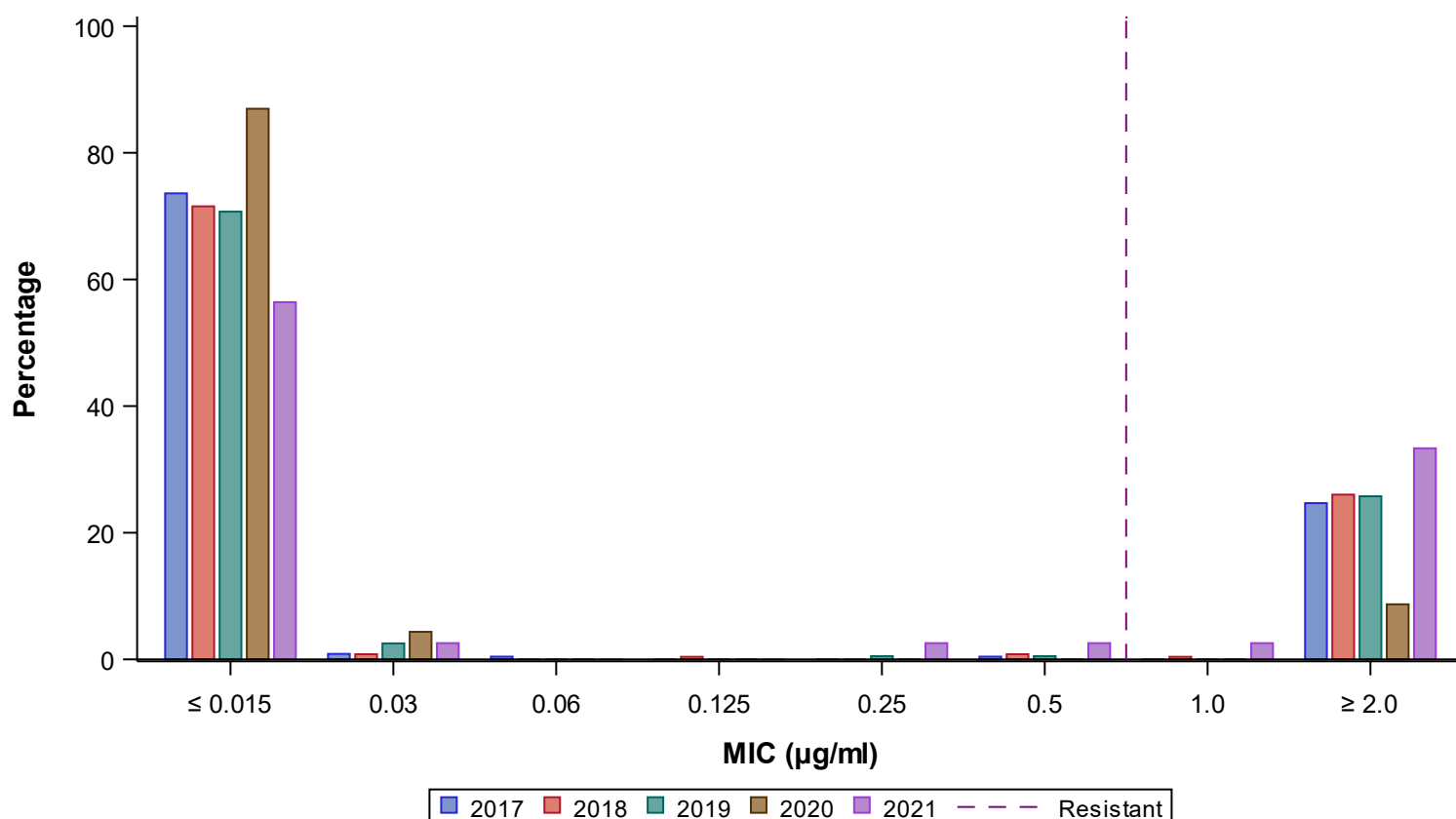
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

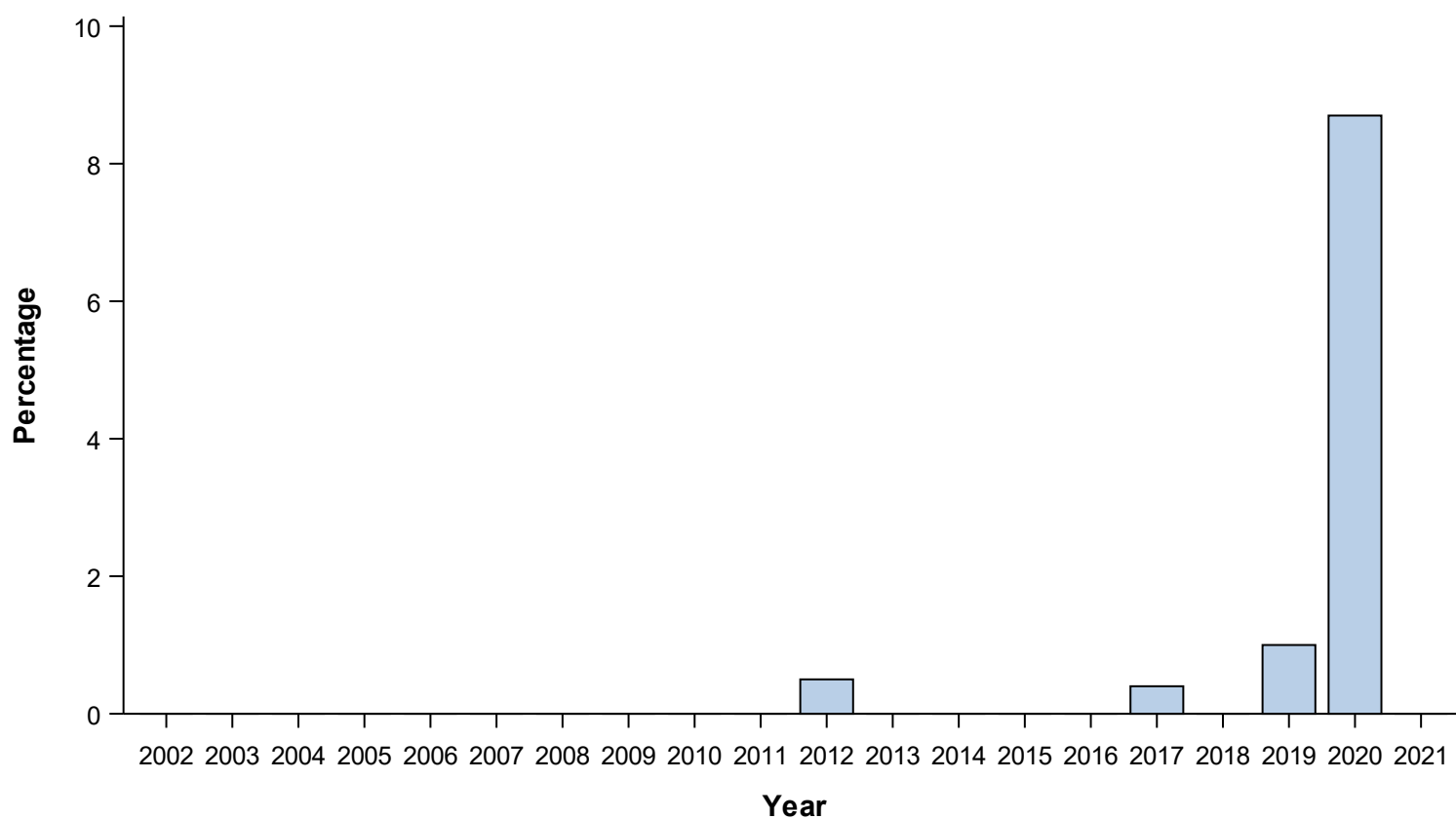
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	170 (73.6)	2 (0.9)	1 (0.4)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	57 (24.7)	231
2018	176 (71.5)	2 (0.8)	0 (0.0)	1 (0.4)	0 (0.0)	2 (0.8)	1 (0.4)	64 (26.0)	246
2019	140 (70.7)	5 (2.5)	0 (0.0)	0 (0.0)	1 (0.5)	1 (0.5)	0 (0.0)	51 (25.8)	198
2020	40 (87.0)	2 (4.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (8.7)	46
2021	22 (56.4)	1 (2.6)	0 (0.0)	0 (0.0)	1 (2.6)	1 (2.6)	1 (2.6)	13 (33.3)	39

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2002-2021



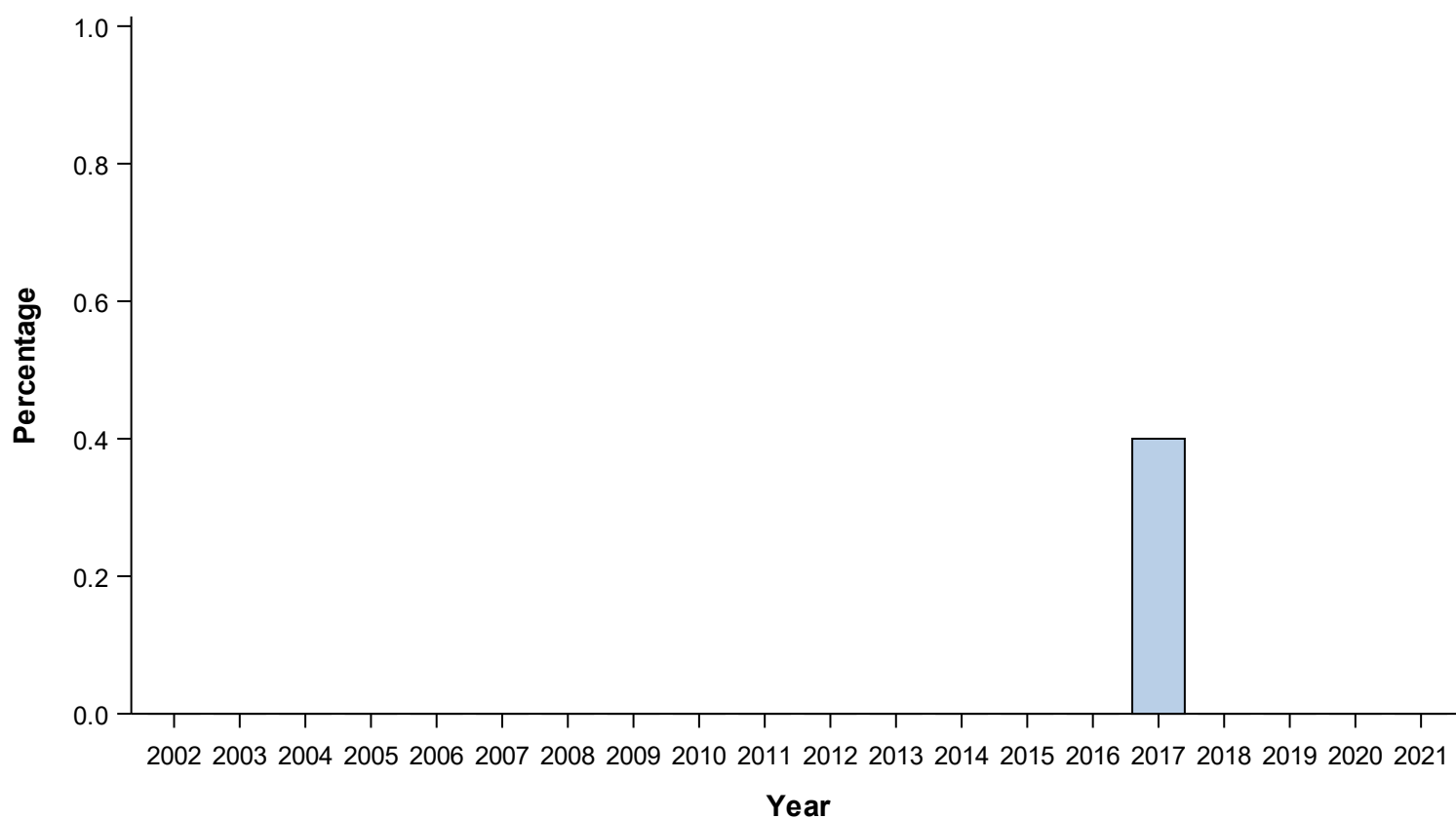
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	2 (1.0)	4 (8.7)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2012-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2002-2021



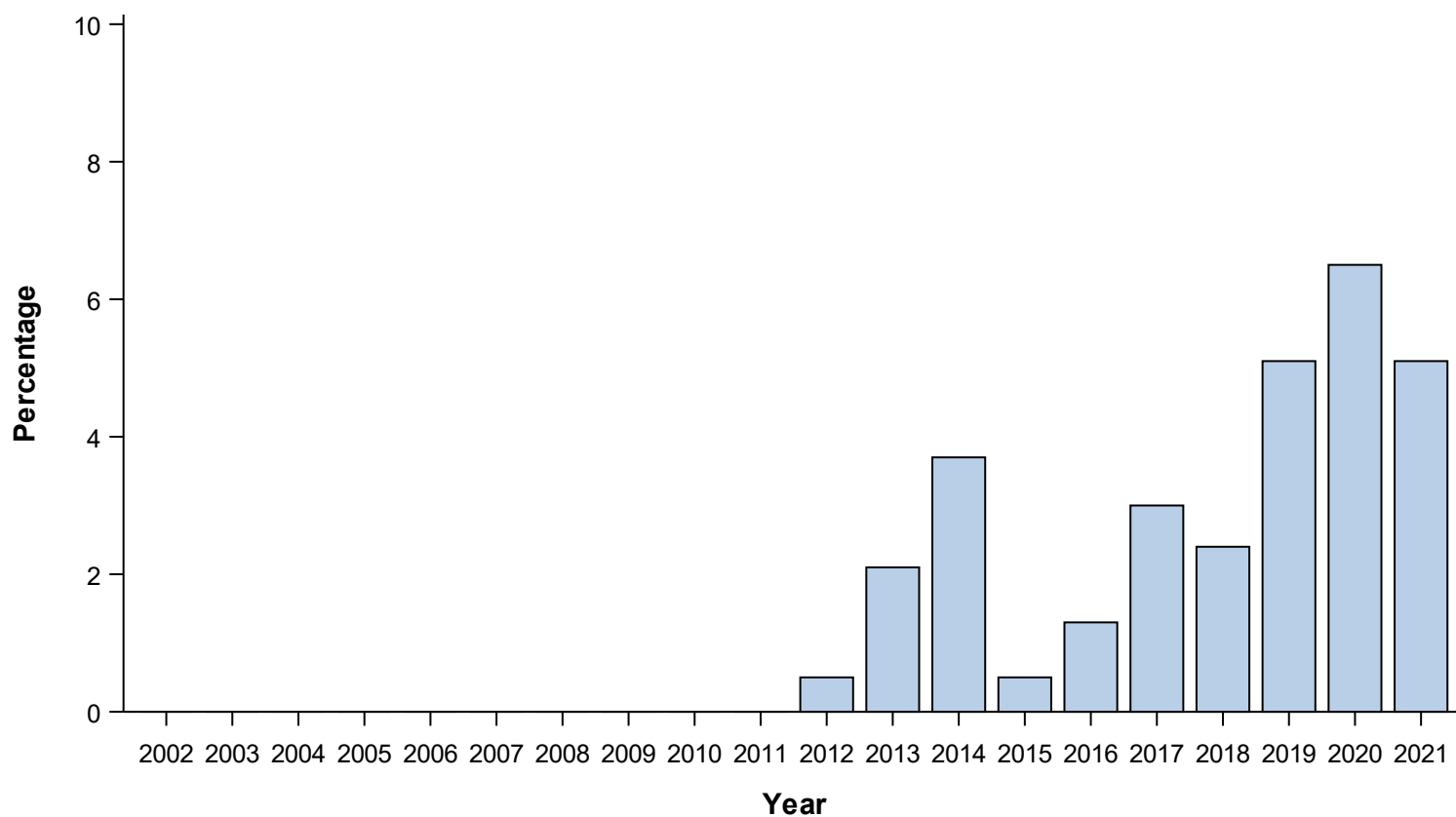
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2012-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Pontiac, Michigan, 2002-2021



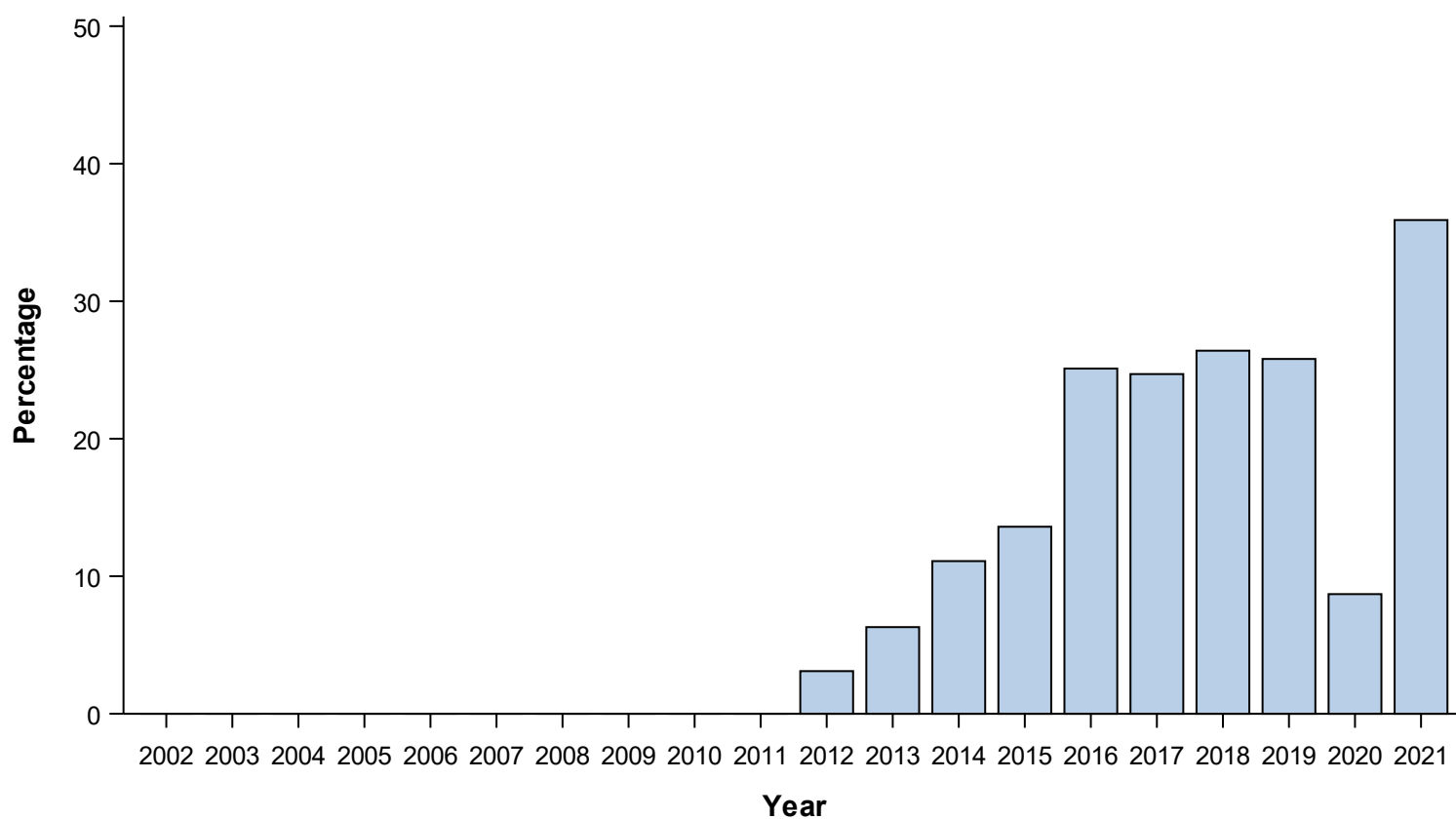
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.5)	4 (2.1)	5 (3.7)	1 (0.5)	3 (1.3)	7 (3.0)	6 (2.4)	10 (5.1)	3 (6.5)	2 (5.1)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2012-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Pontiac, Michigan, 2002-2021



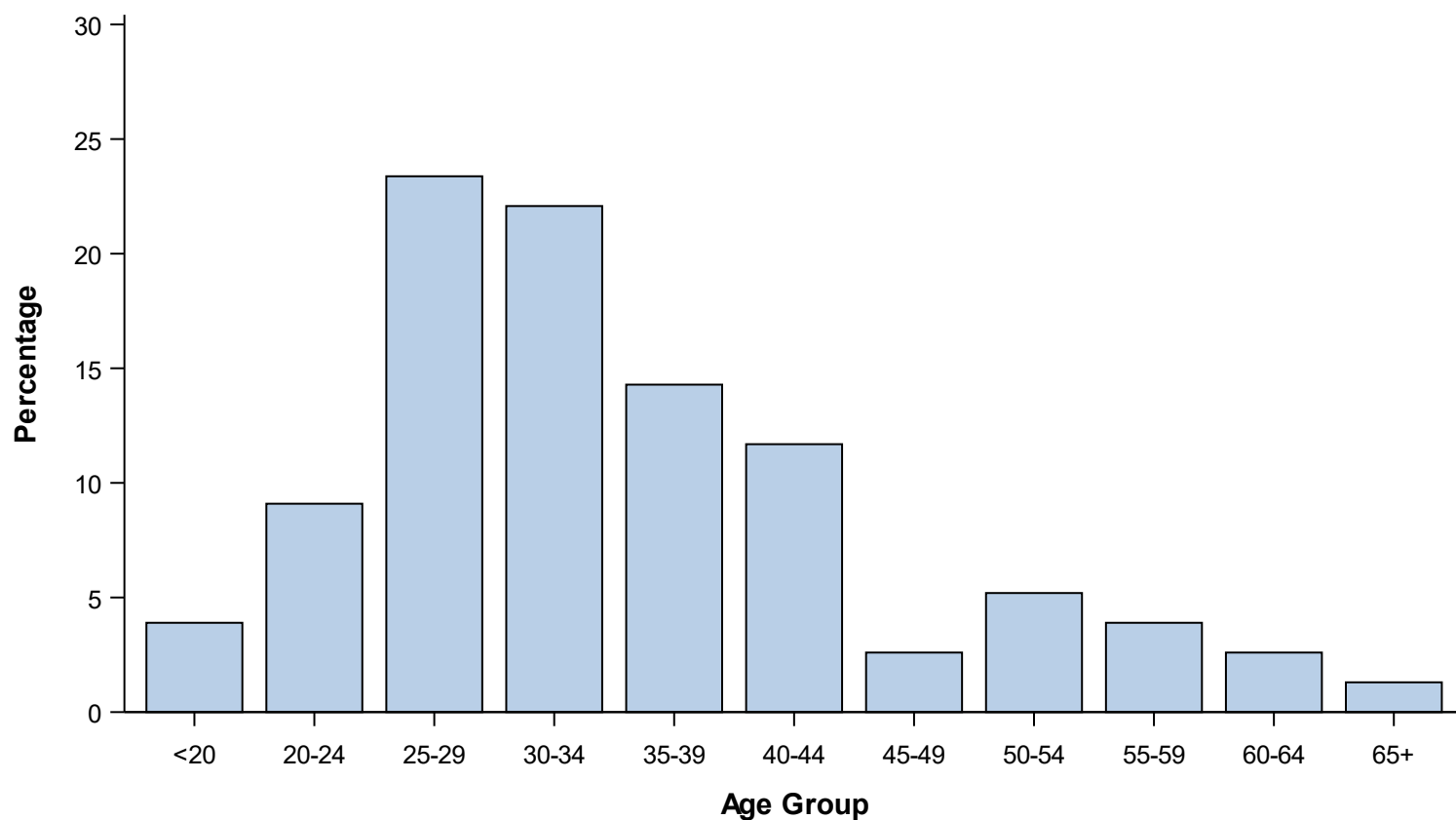
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
6 (3.1)	12 (6.3)	15 (11.1)	27 (13.6)	59 (25.1)	57 (24.7)	65 (26.4)	51 (25.8)	4 (8.7)	14 (35.9)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2012-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

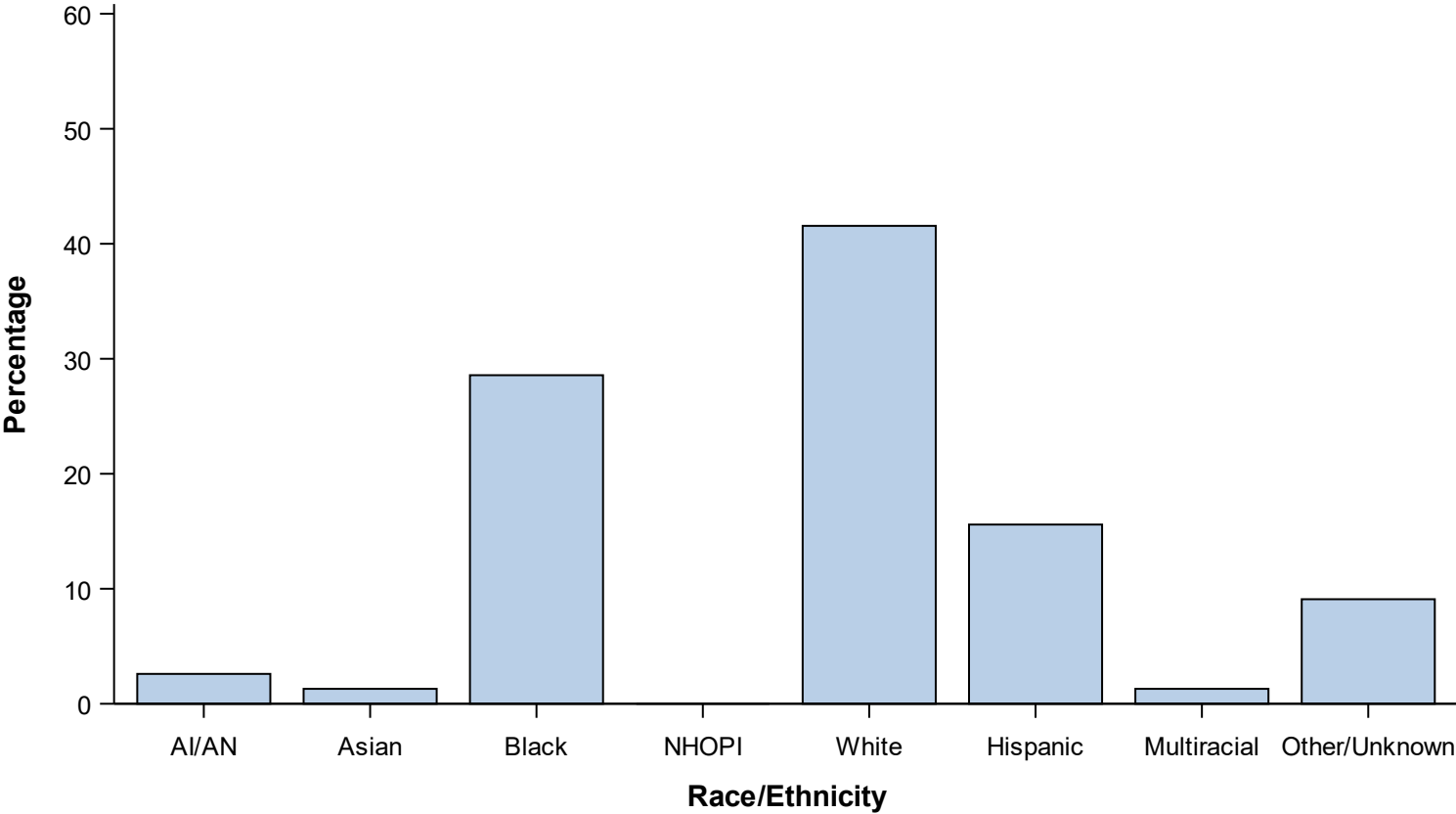
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
3 (3.9)	7 (9.1)	18 (23.4)	17 (22.1)	11 (14.3)	9 (11.7)	2 (2.6)	4 (5.2)	3 (3.9)	2 (2.6)	1 (1.3)	77

Note: Cases with unknown age were excluded.

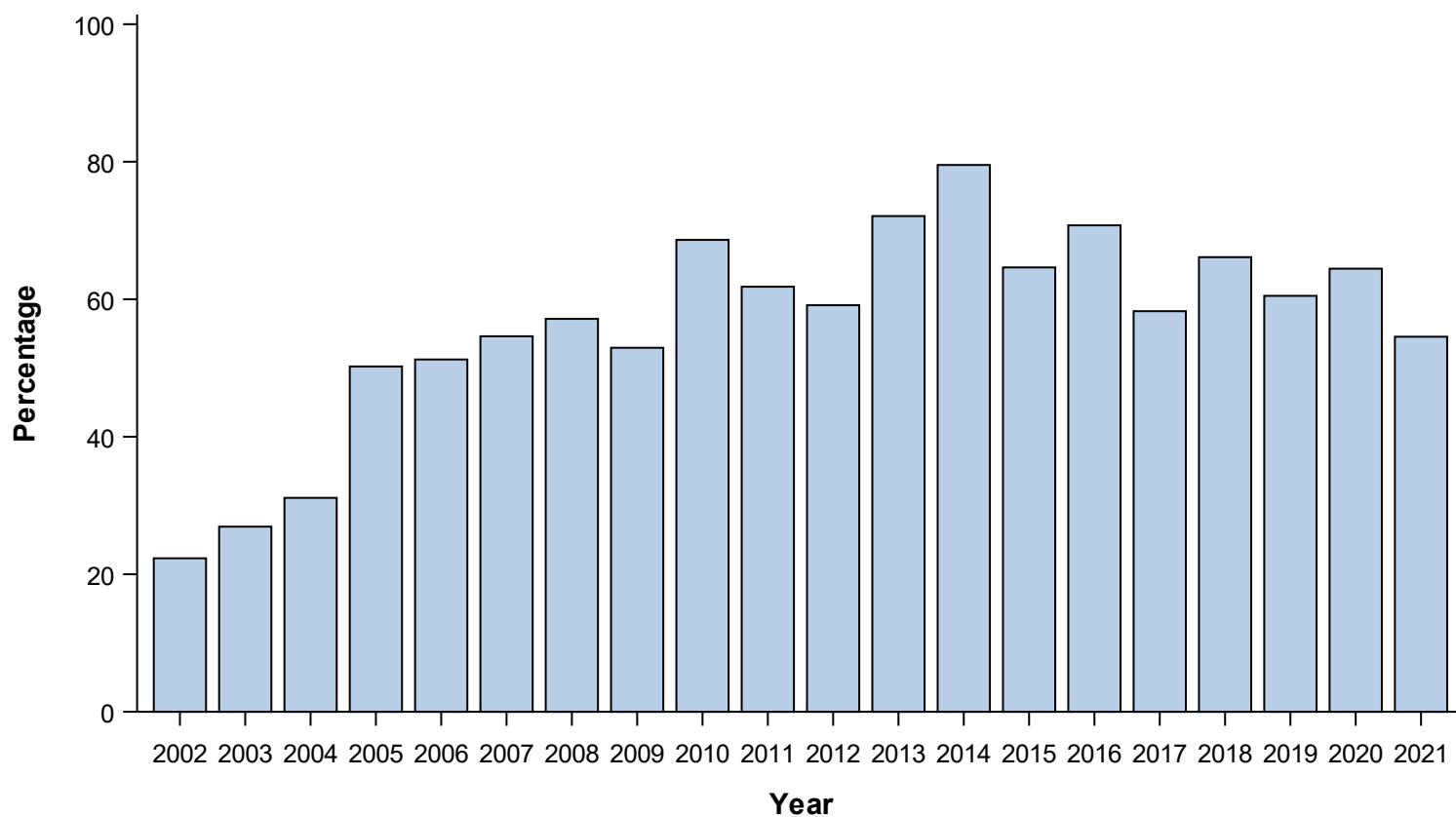
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
2 (2.6)	1 (1.3)	22 (28.6)	0 (0.0)	32 (41.6)	12 (15.6)	1 (1.3)	7 (9.1)	77

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Portland, Oregon, 2002-2021

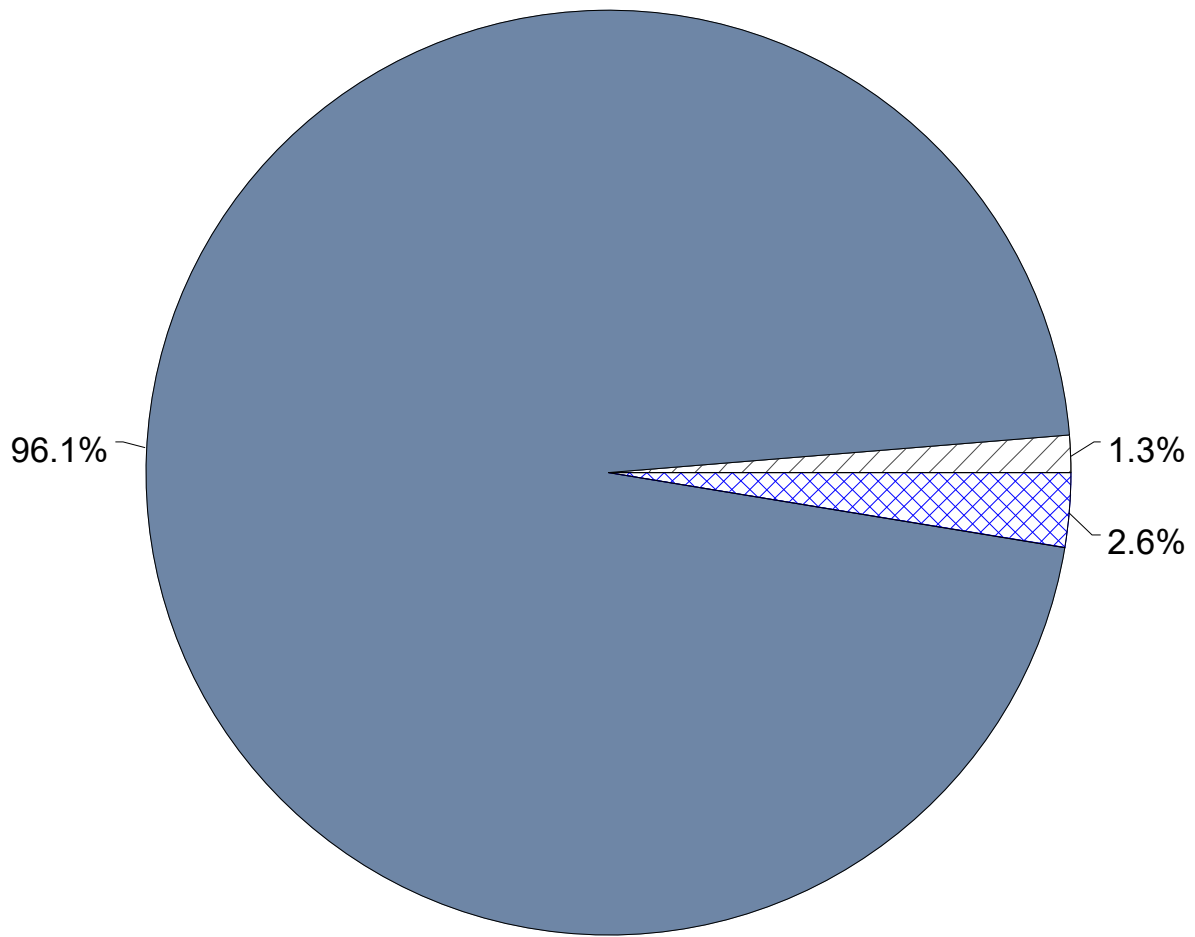


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
25 (22.3)	35 (26.9)	56 (31.1)	114 (50.2)	83 (51.2)	77 (54.6)	84 (57.1)	54 (52.9)	70 (68.6)	102 (61.8)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
68 (59.1)	93 (72.1)	101 (79.5)	95 (64.6)	104 (70.7)	67 (58.3)	80 (66.1)	49 (60.5)	58 (64.4)	36 (54.5)

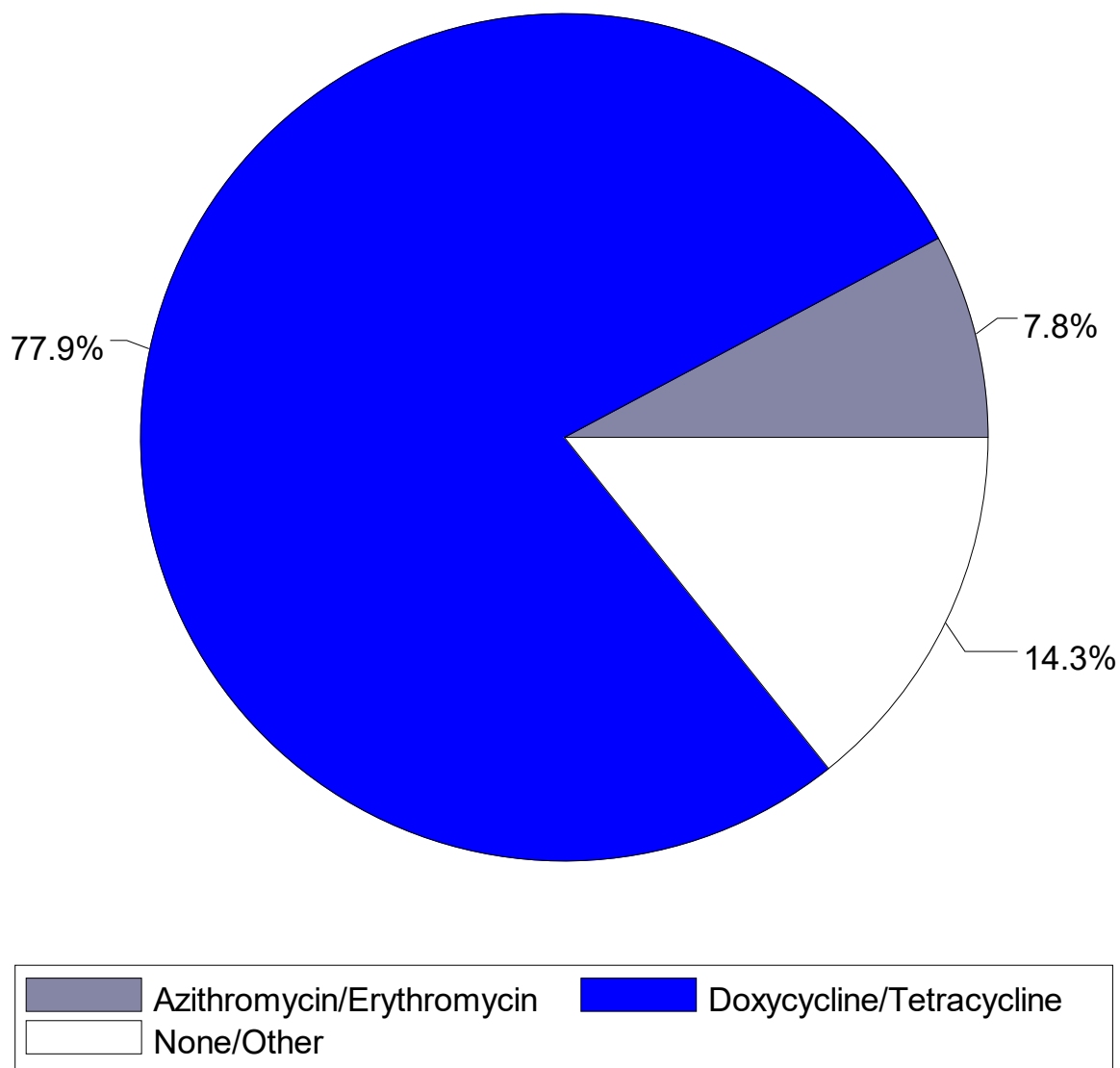
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants,
Gonococcal Isolate Surveillance Project (GISP),
Portland, Oregon, 2021



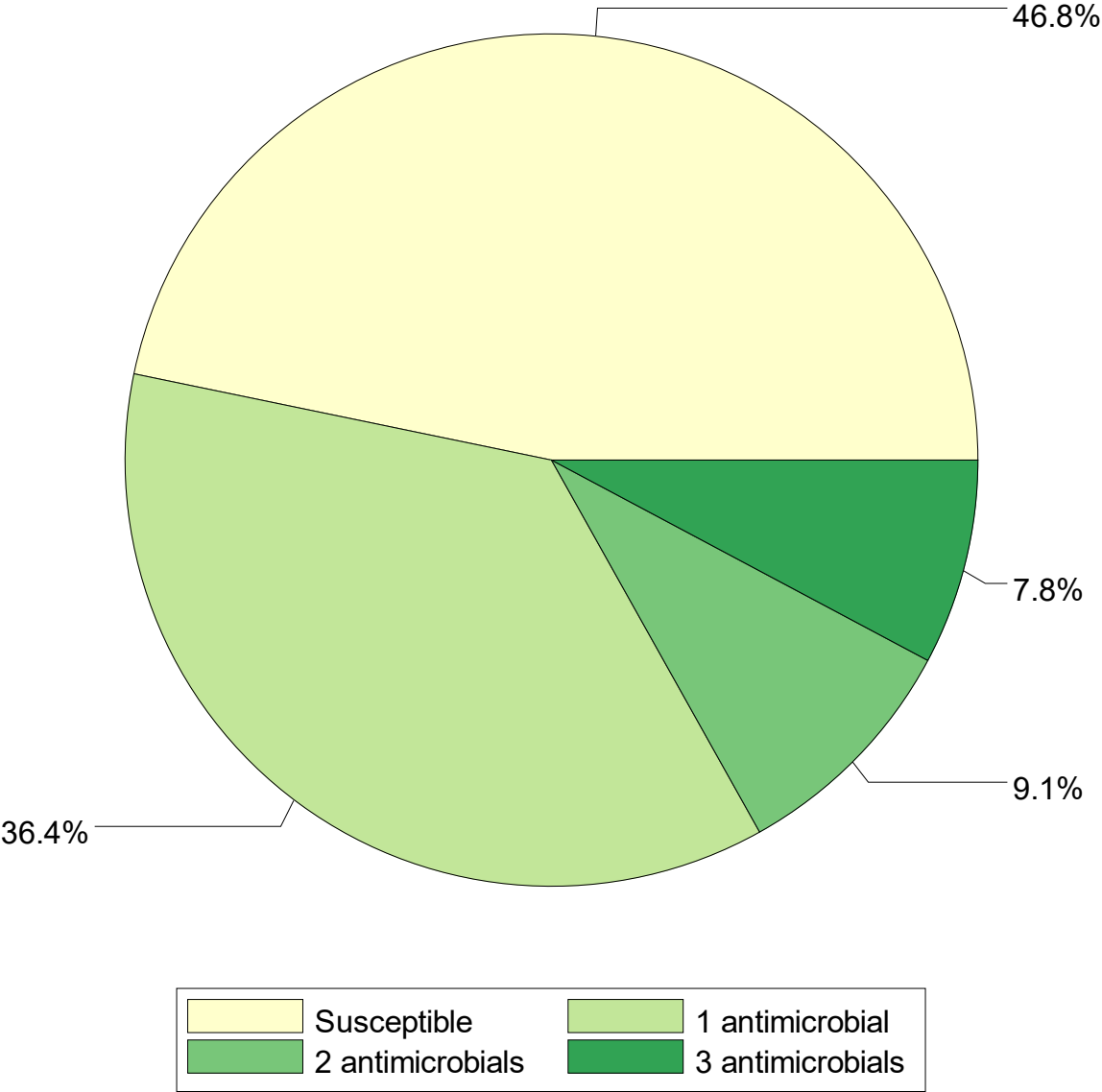
Primary Treatment	Count	Percentage
Cefixime 400 mg	1	1.3
Ceftriaxone 500 mg	74	96.1
Ceftriaxone 1 gm	2	2.6

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	6	7.8
Doxycycline/Tetracycline	60	77.9
None/Other	11	14.3

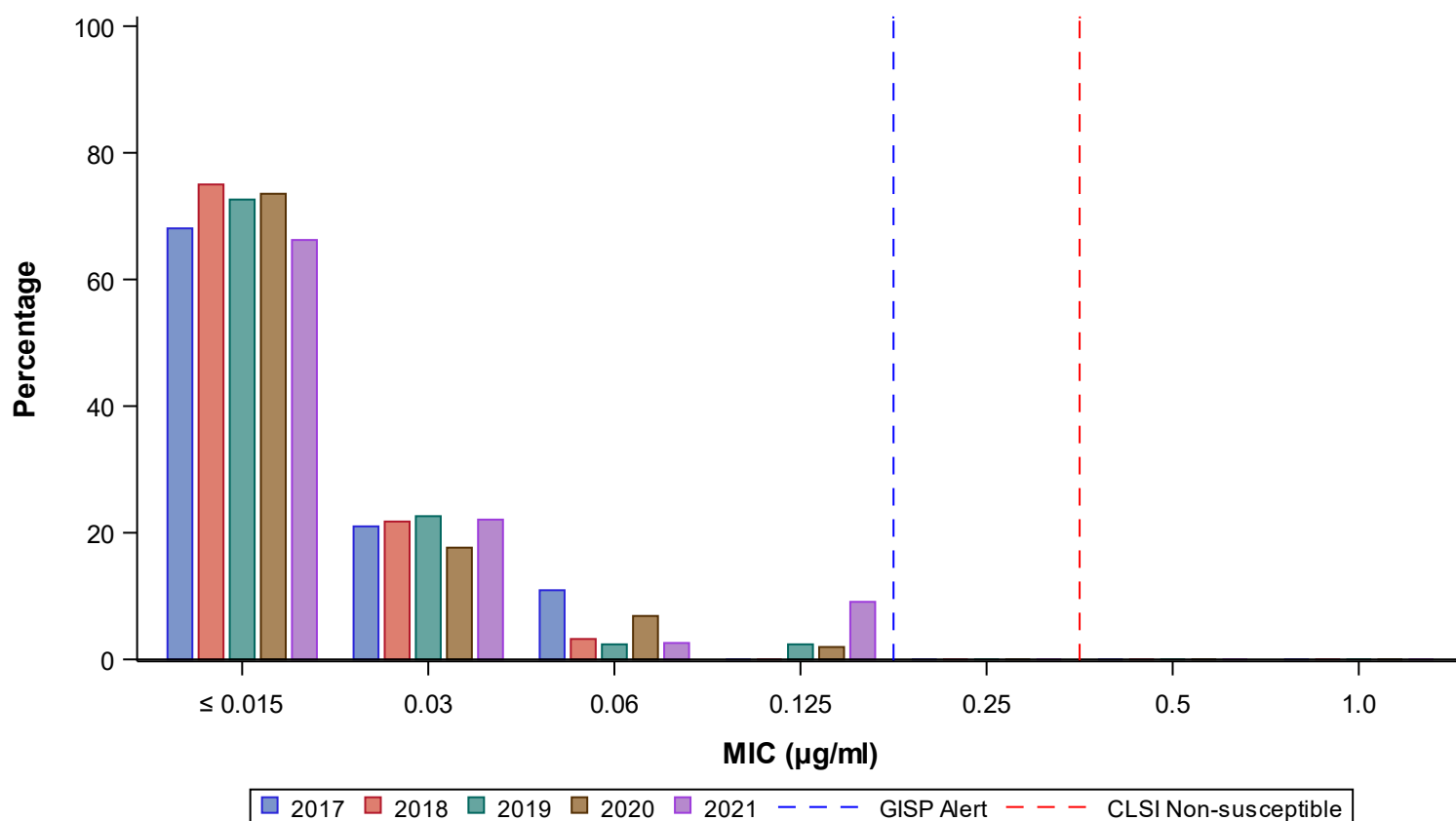
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	36	46.8
1 antimicrobial	28	36.4
2 antimicrobials	7	9.1
3 antimicrobials	6	7.8
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 µg/mL; Cefixime: MIC ≥ 0.25 µg/mL; Azithromycin: MIC ≥ 2.0 µg/ml; Resistance = Tetracycline: MIC ≥ 2.0 µg/mL; Ciprofloxacin: MIC ≥ 1.0 µg/mL; Penicillin: MIC ≥ 2.0 µg/mL or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2017-2021



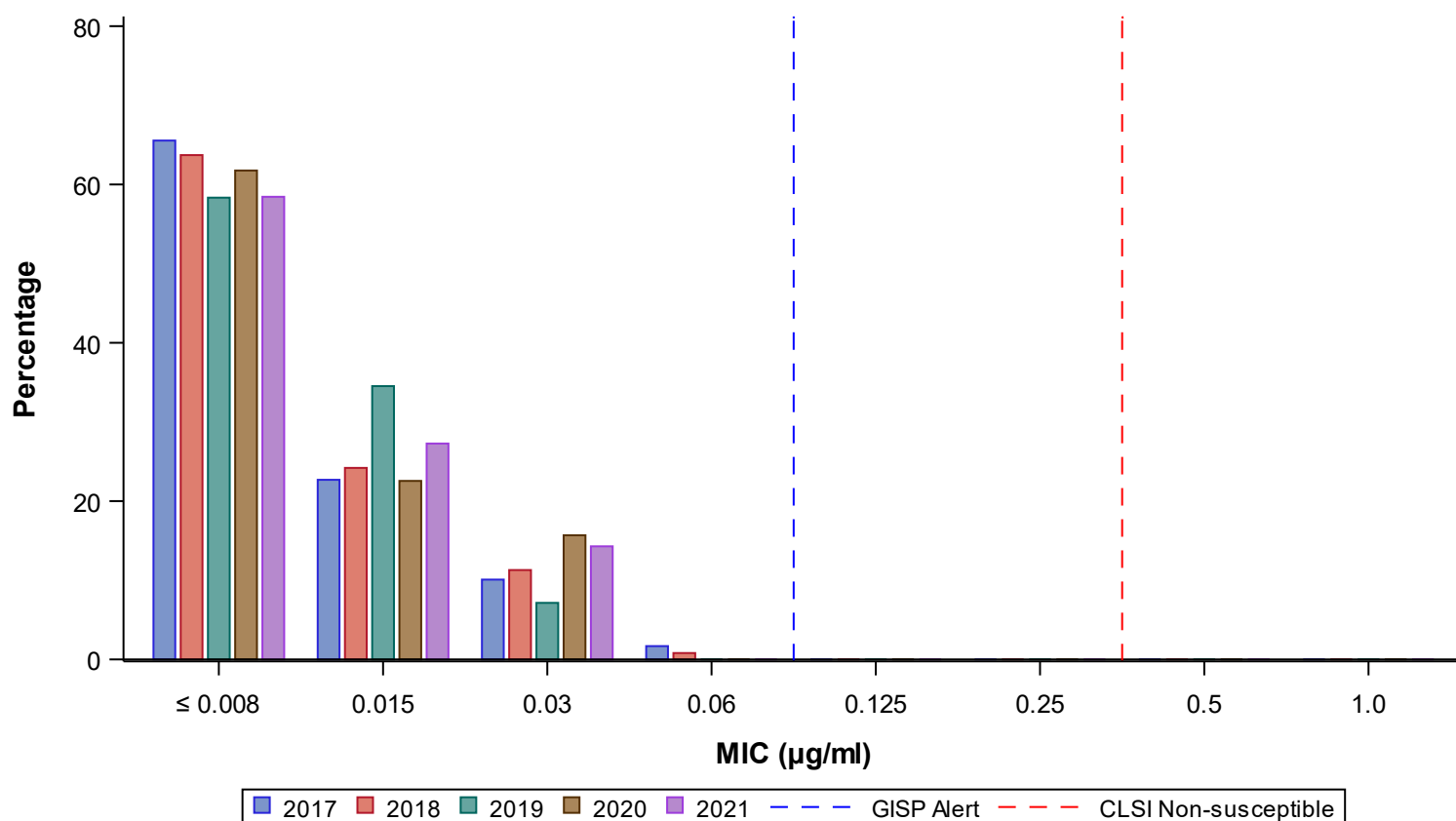
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	81 (68.1)	25 (21.0)	13 (10.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	119
2018	93 (75.0)	27 (21.8)	4 (3.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	124
2019	61 (72.6)	19 (22.6)	2 (2.4)	2 (2.4)	0 (0.0)	0 (0.0)	0 (0.0)	84
2020	75 (73.5)	18 (17.6)	7 (6.9)	2 (2.0)	0 (0.0)	0 (0.0)	0 (0.0)	102
2021	51 (66.2)	17 (22.1)	2 (2.6)	7 (9.1)	0 (0.0)	0 (0.0)	0 (0.0)	77

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	78 (65.5)	27 (22.7)	12 (10.1)	2 (1.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	119
2018	79 (63.7)	30 (24.2)	14 (11.3)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	124
2019	49 (58.3)	29 (34.5)	6 (7.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	84
2020	63 (61.8)	23 (22.5)	16 (15.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	102
2021	45 (58.4)	21 (27.3)	11 (14.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	77

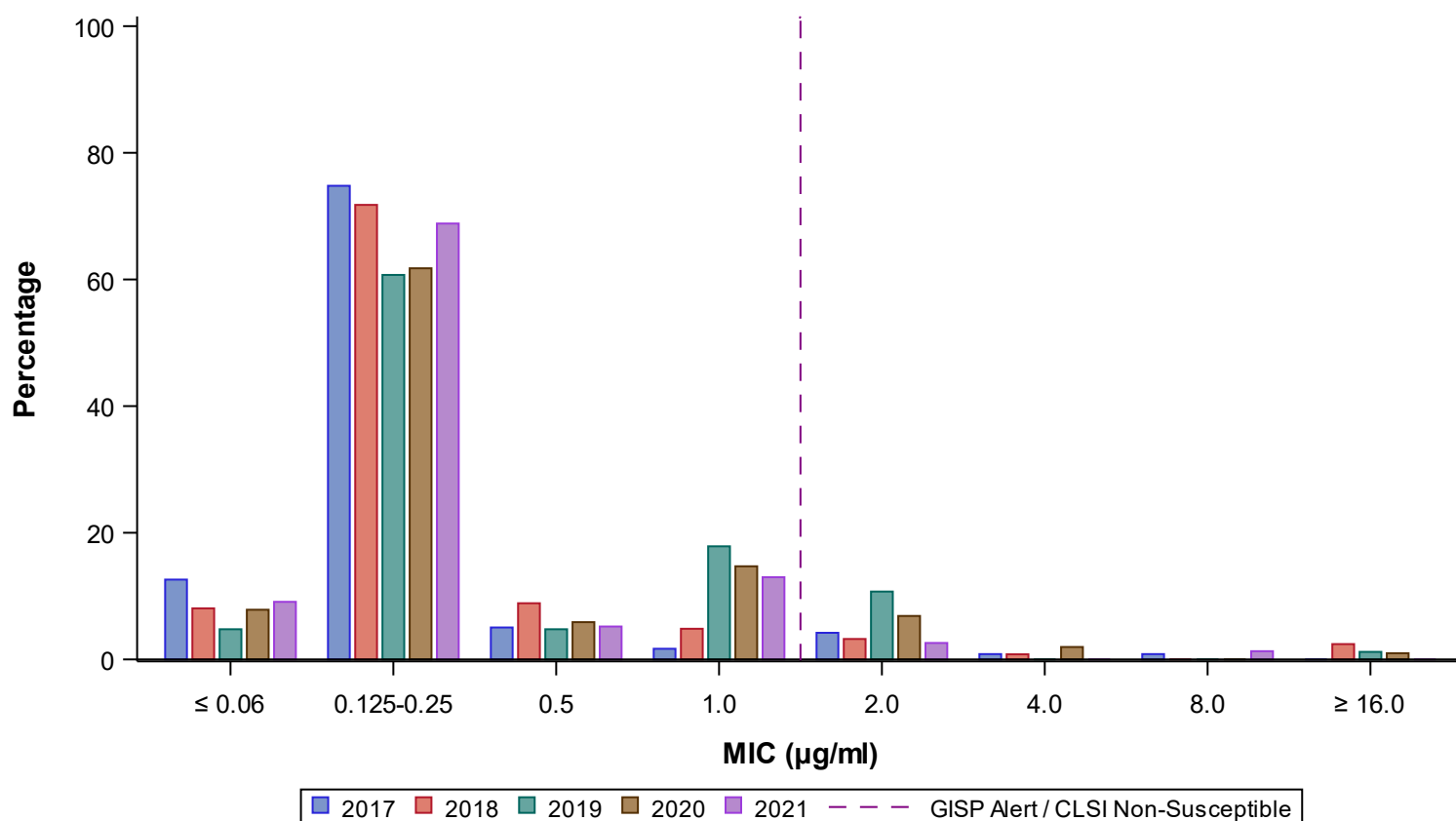
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	15 (12.6)	89 (74.8)	6 (5.0)	2 (1.7)	5 (4.2)	1 (0.8)	1 (0.8)	0 (0.0)	119
2018	10 (8.1)	89 (71.8)	11 (8.9)	6 (4.8)	4 (3.2)	1 (0.8)	0 (0.0)	3 (2.4)	124
2019	4 (4.8)	51 (60.7)	4 (4.8)	15 (17.9)	9 (10.7)	0 (0.0)	0 (0.0)	1 (1.2)	84
2020	8 (7.8)	63 (61.8)	6 (5.9)	15 (14.7)	7 (6.9)	2 (2.0)	0 (0.0)	1 (1.0)	102
2021	7 (9.1)	53 (68.8)	4 (5.2)	10 (13.0)	2 (2.6)	0 (0.0)	1 (1.3)	0 (0.0)	77

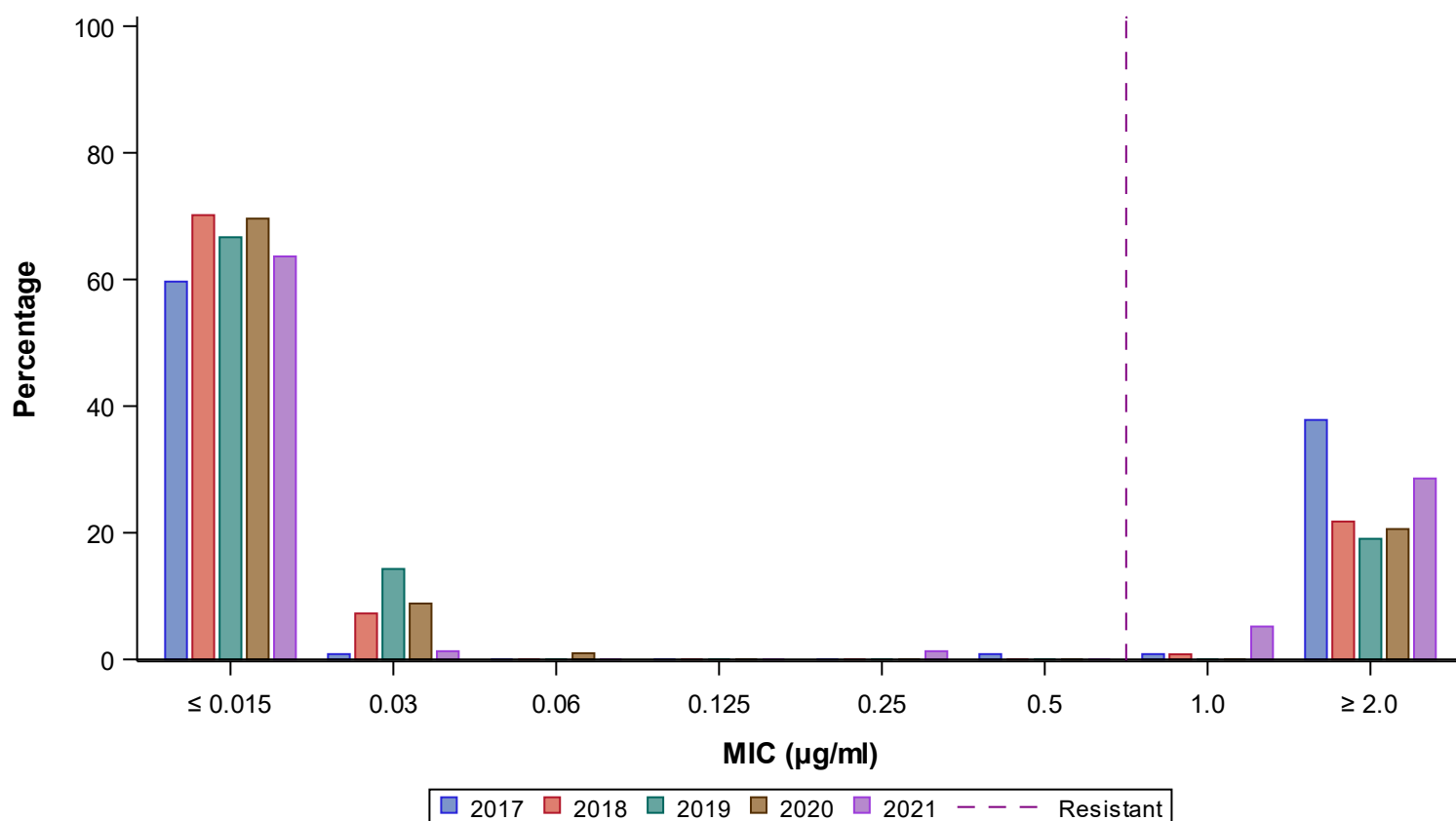
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

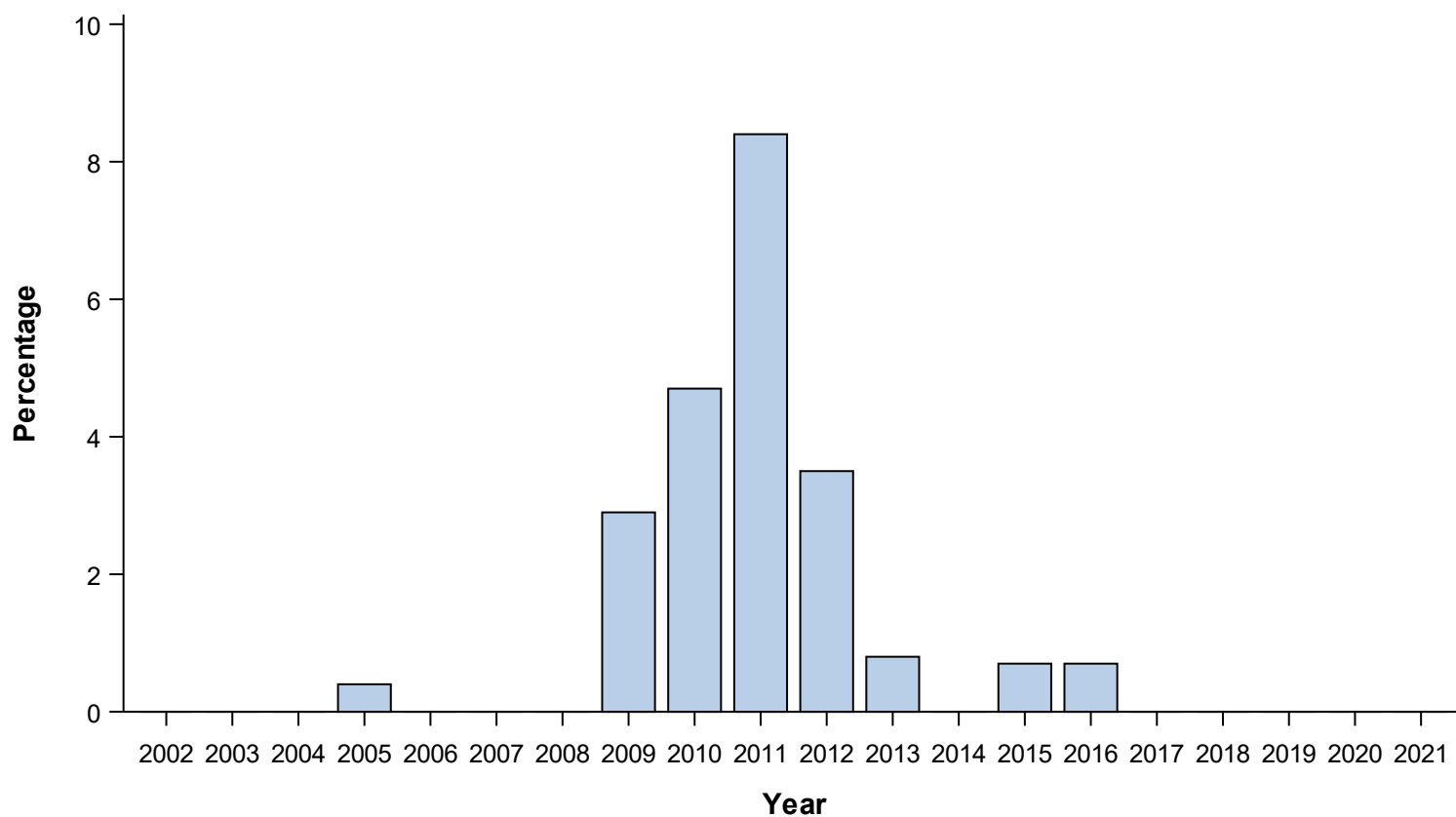
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	71 (59.7)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	1 (0.8)	45 (37.8)	119
2018	87 (70.2)	9 (7.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.8)	27 (21.8)	124
2019	56 (66.7)	12 (14.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	16 (19.0)	84
2020	71 (69.6)	9 (8.8)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	21 (20.6)	102
2021	49 (63.6)	1 (1.3)	0 (0.0)	0 (0.0)	1 (1.3)	0 (0.0)	4 (5.2)	22 (28.6)	77

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2002-2021

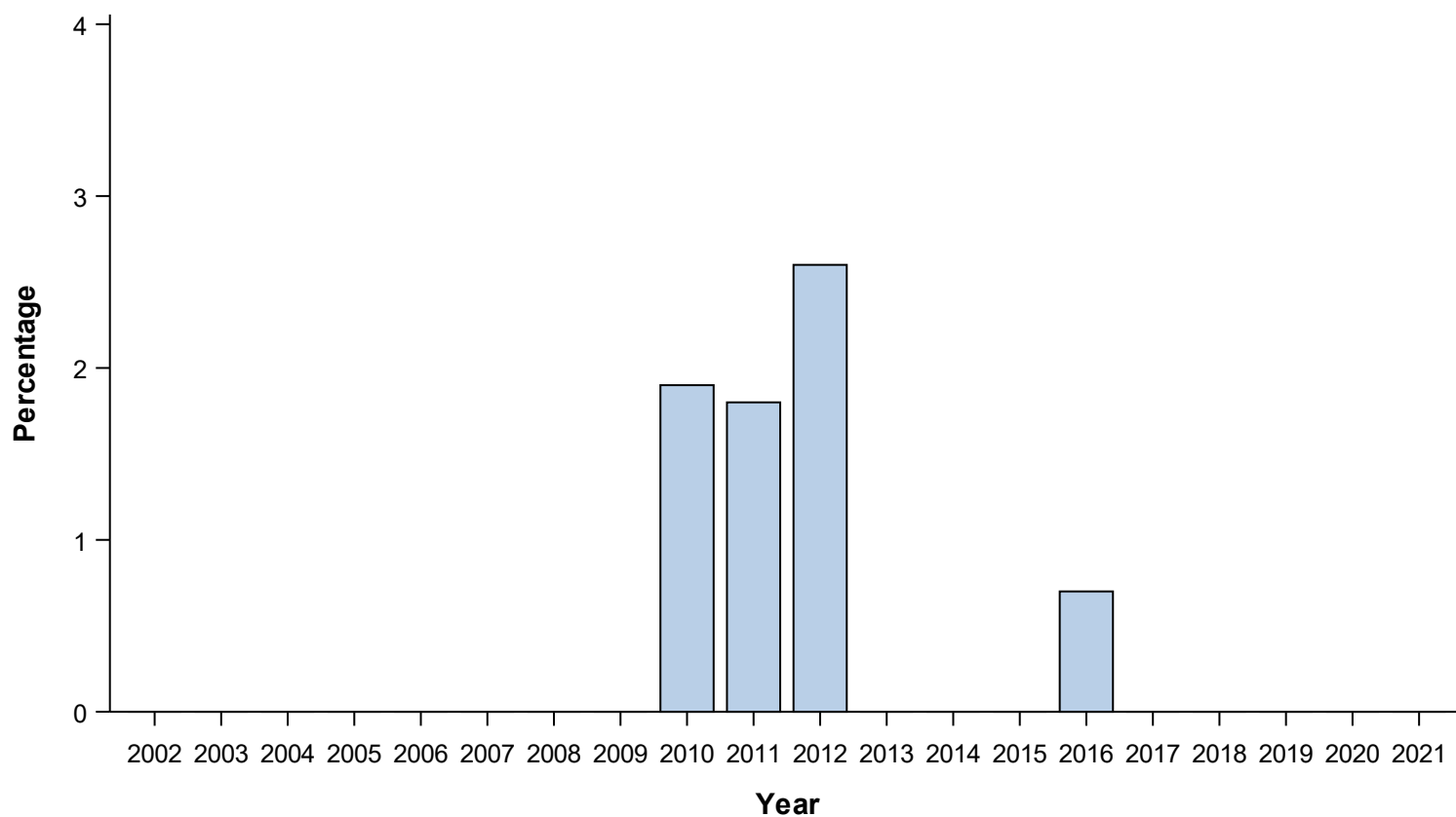


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	3 (2.9)	5 (4.7)	14 (8.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
4 (3.5)	1 (0.8)	0 (0.0)	1 (0.7)	1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2002-2021

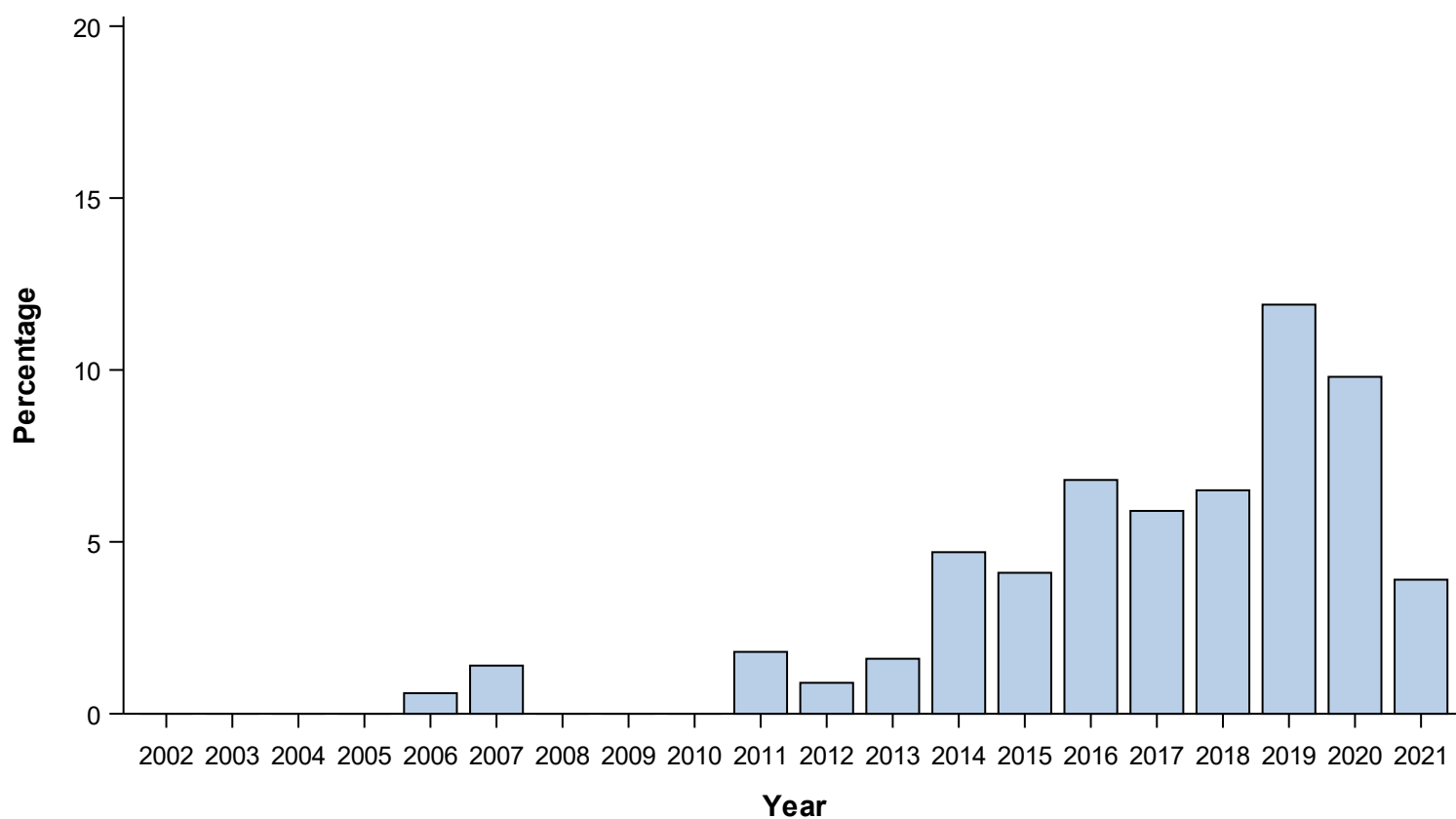


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.9)	3 (1.8)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
3 (2.6)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Portland, Oregon, 2002-2021

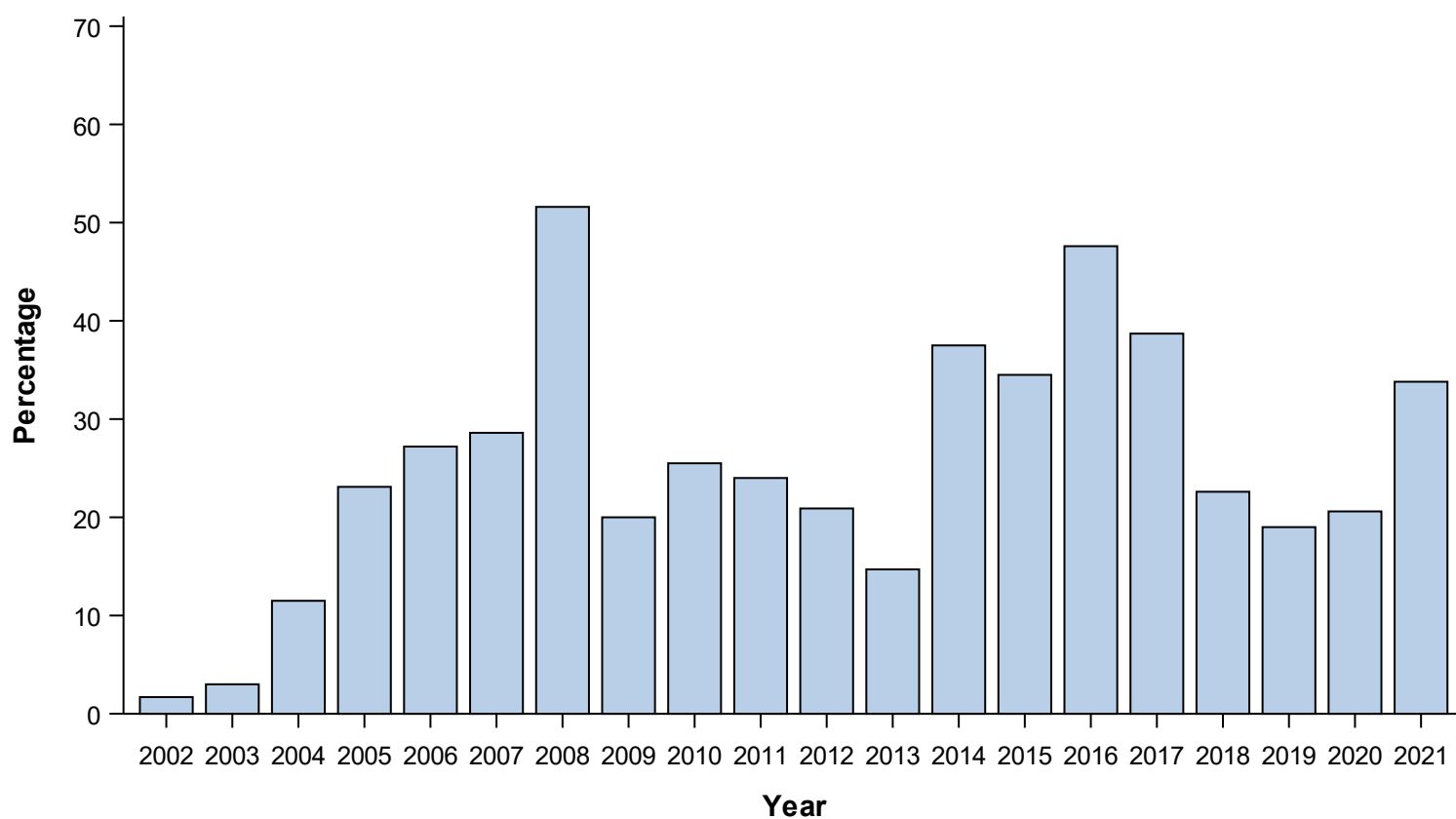


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.6)	2 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	3 (1.8)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.9)	2 (1.6)	6 (4.7)	6 (4.1)	10 (6.8)	7 (5.9)	8 (6.5)	10 (11.9)	10 (9.8)	3 (3.9)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Portland, Oregon, 2002-2021

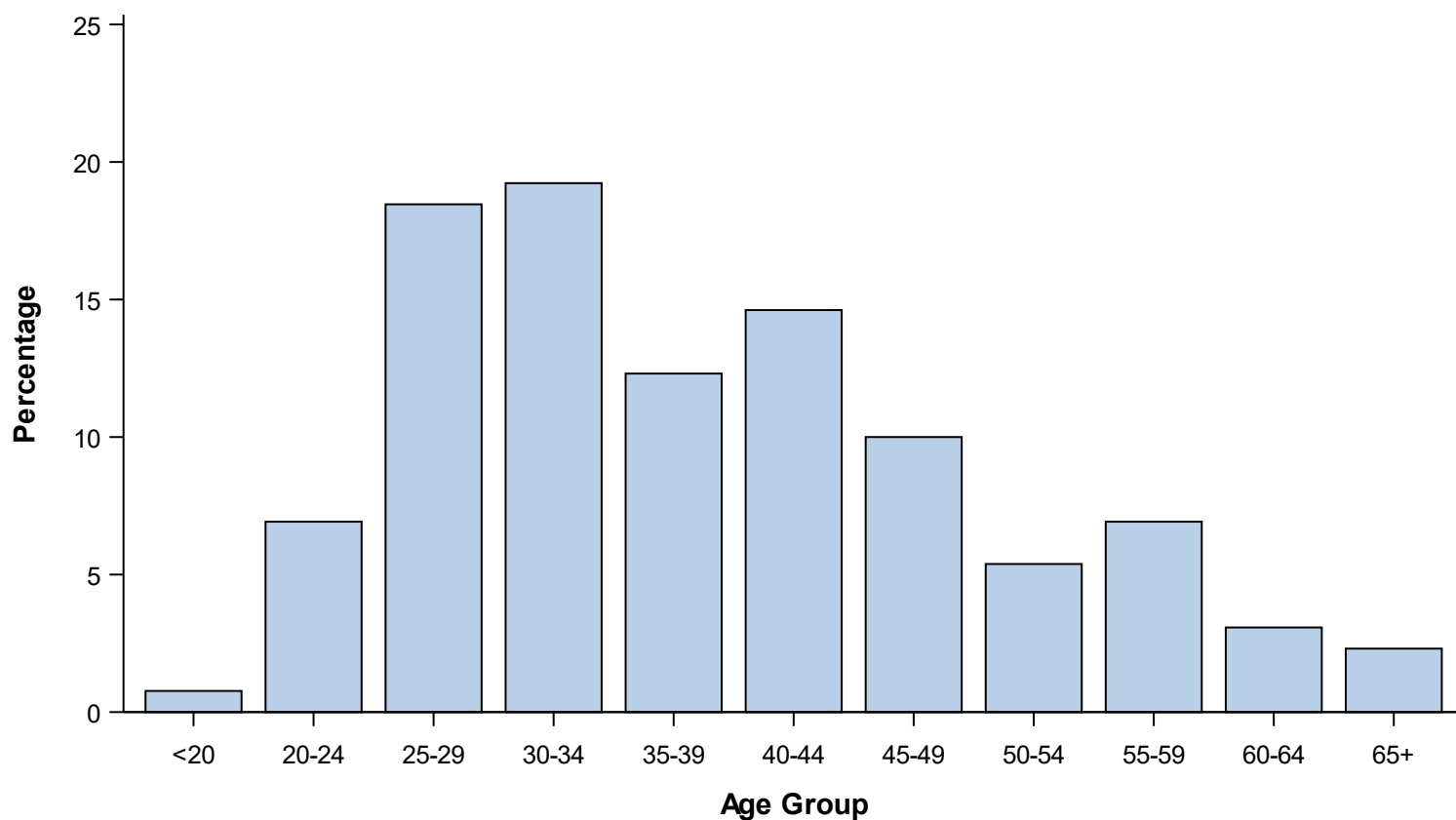


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
2 (1.7)	4 (3.0)	22 (11.5)	55 (23.1)	46 (27.2)	42 (28.6)	81 (51.6)	21 (20.0)	27 (25.5)	40 (24.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
24 (20.9)	19 (14.7)	48 (37.5)	51 (34.5)	70 (47.6)	46 (38.7)	28 (22.6)	16 (19.0)	21 (20.6)	26 (33.8)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

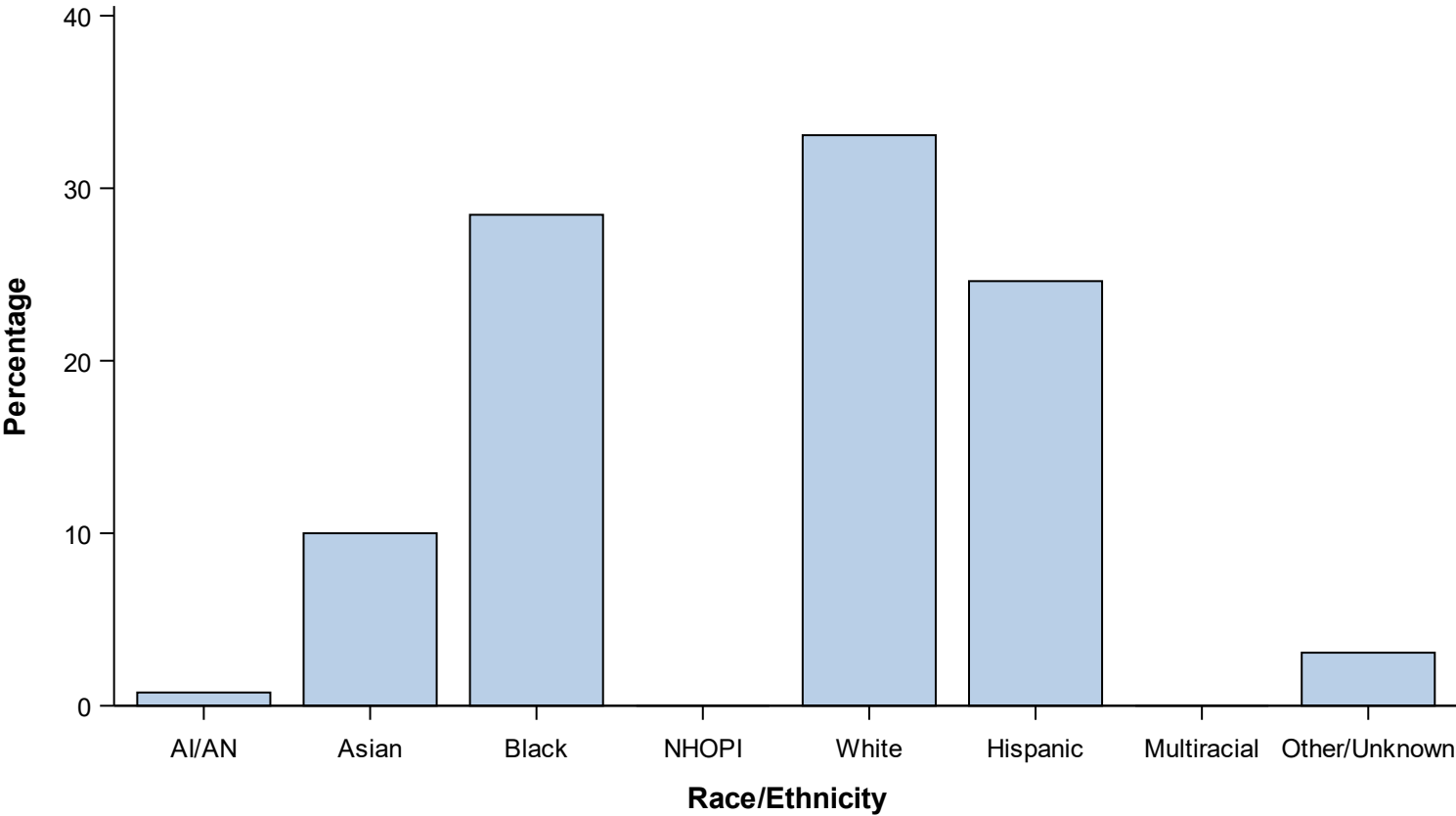
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
1 (0.8)	9 (6.9)	24 (18.5)	25 (19.2)	16 (12.3)	19 (14.6)	13 (10.0)	7 (5.4)	9 (6.9)	4 (3.1)	3 (2.3)	130

Note: Cases with unknown age were excluded.

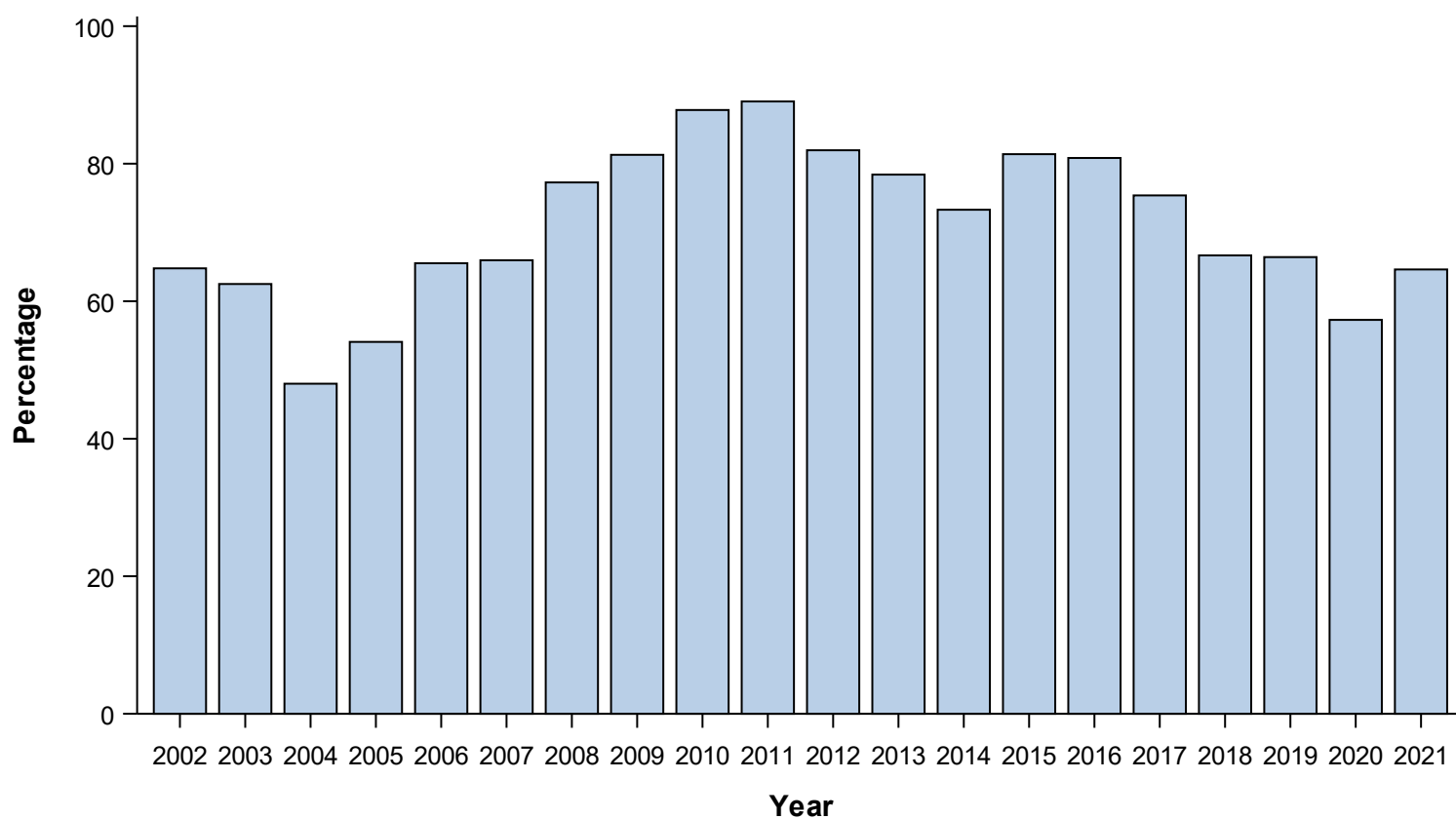
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
1 (0.8)	13 (10.0)	37 (28.5)	0 (0.0)	43 (33.1)	32 (24.6)	0 (0.0)	4 (3.1)	130

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
San Diego, California, 2002-2021

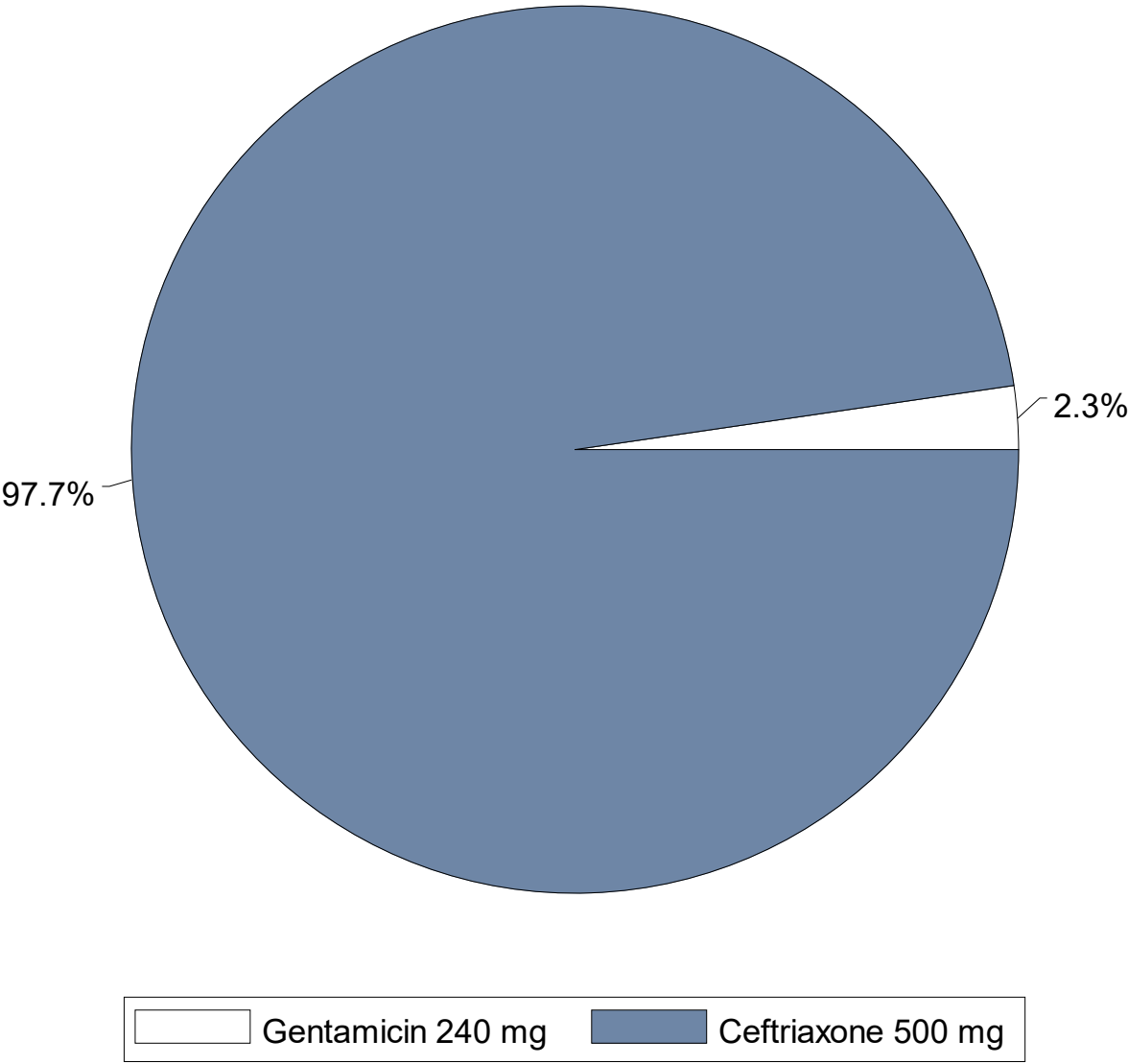


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
160 (64.8)	160 (62.5)	120 (48.0)	159 (54.1)	171 (65.5)	124 (66.0)	136 (77.3)	139 (81.3)	180 (87.8)	187 (89.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
168 (82.0)	138 (78.4)	151 (73.3)	153 (81.4)	156 (80.8)	147 (75.4)	98 (66.7)	87 (66.4)	59 (57.3)	84 (64.6)

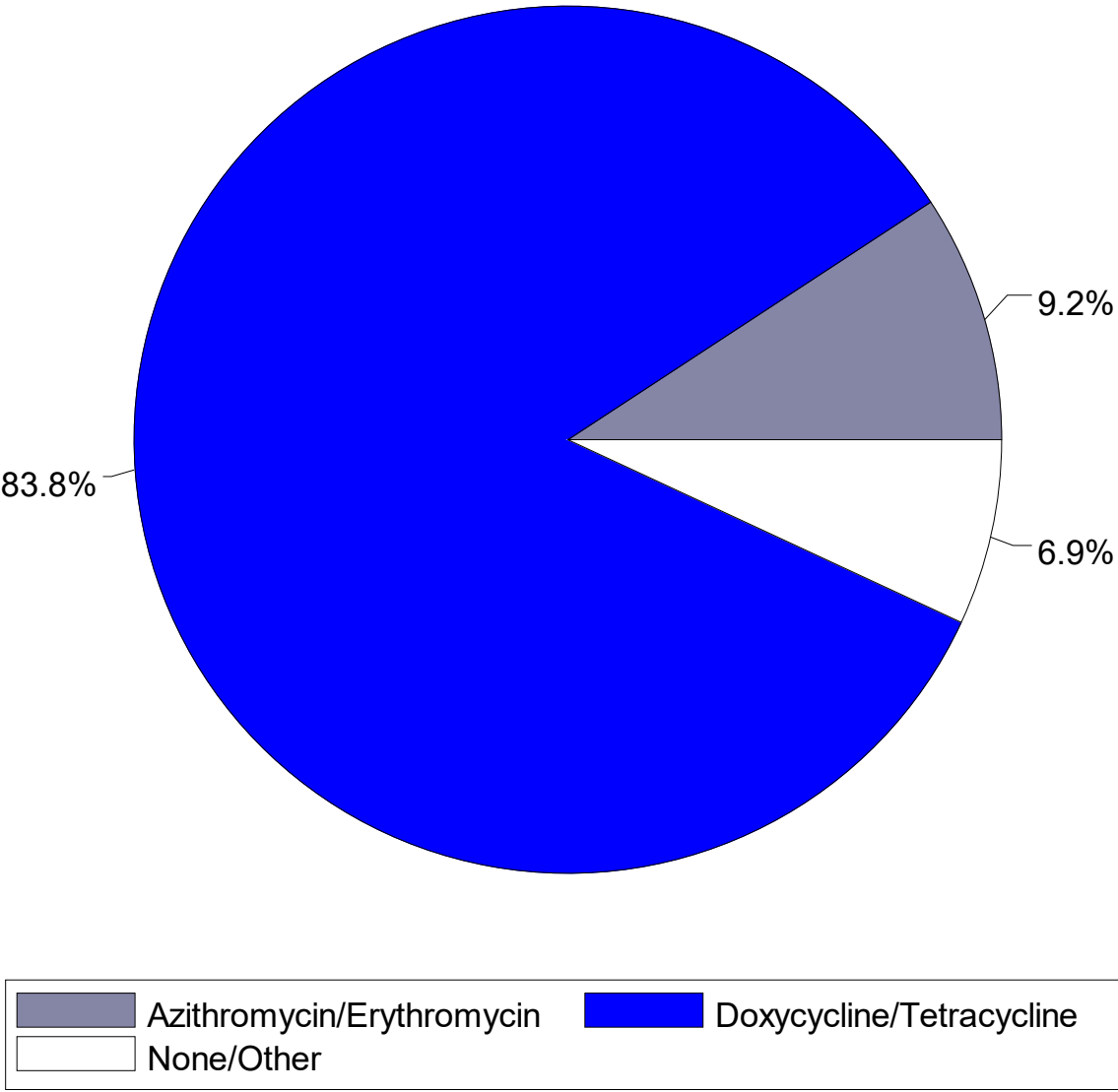
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2021



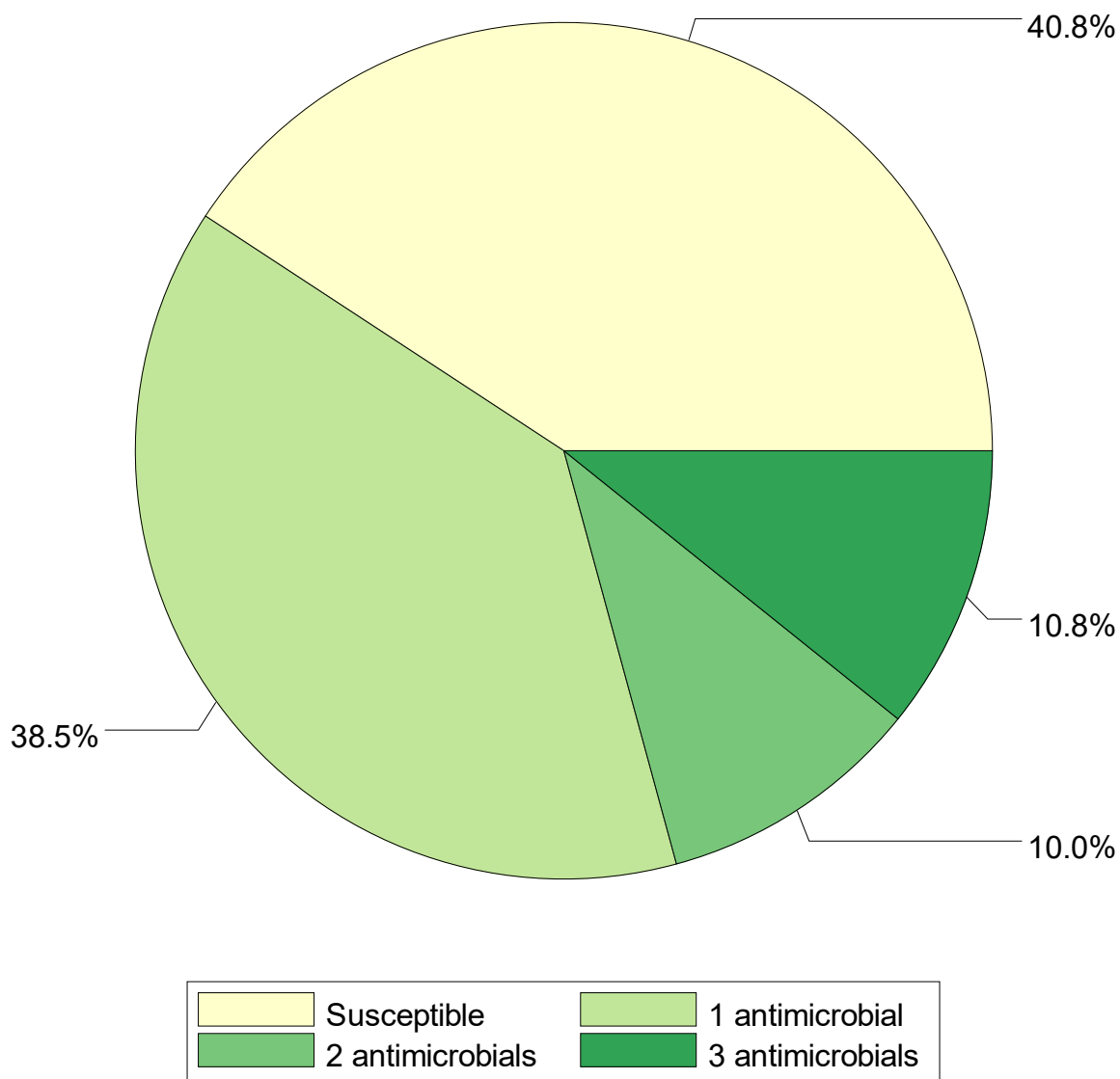
Primary Treatment	Count	Percentage
Gentamicin 240 mg	3	2.3
Ceftriaxone 500 mg	127	97.7

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	12	9.2
Doxycycline/Tetracycline	109	83.8
None/Other	9	6.9

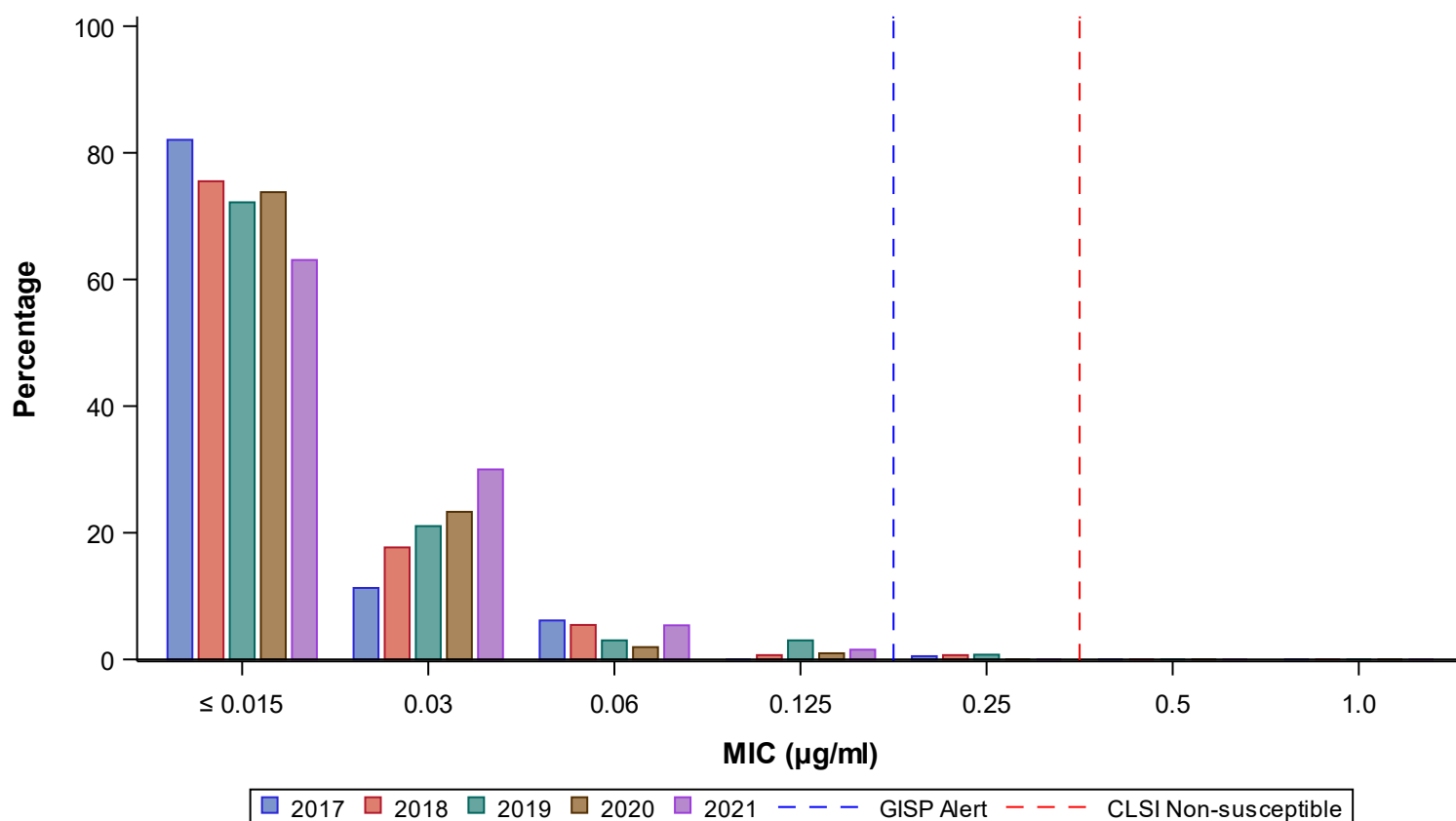
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	53	40.8
1 antimicrobial	50	38.5
2 antimicrobials	13	10.0
3 antimicrobials	14	10.8
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2017-2021



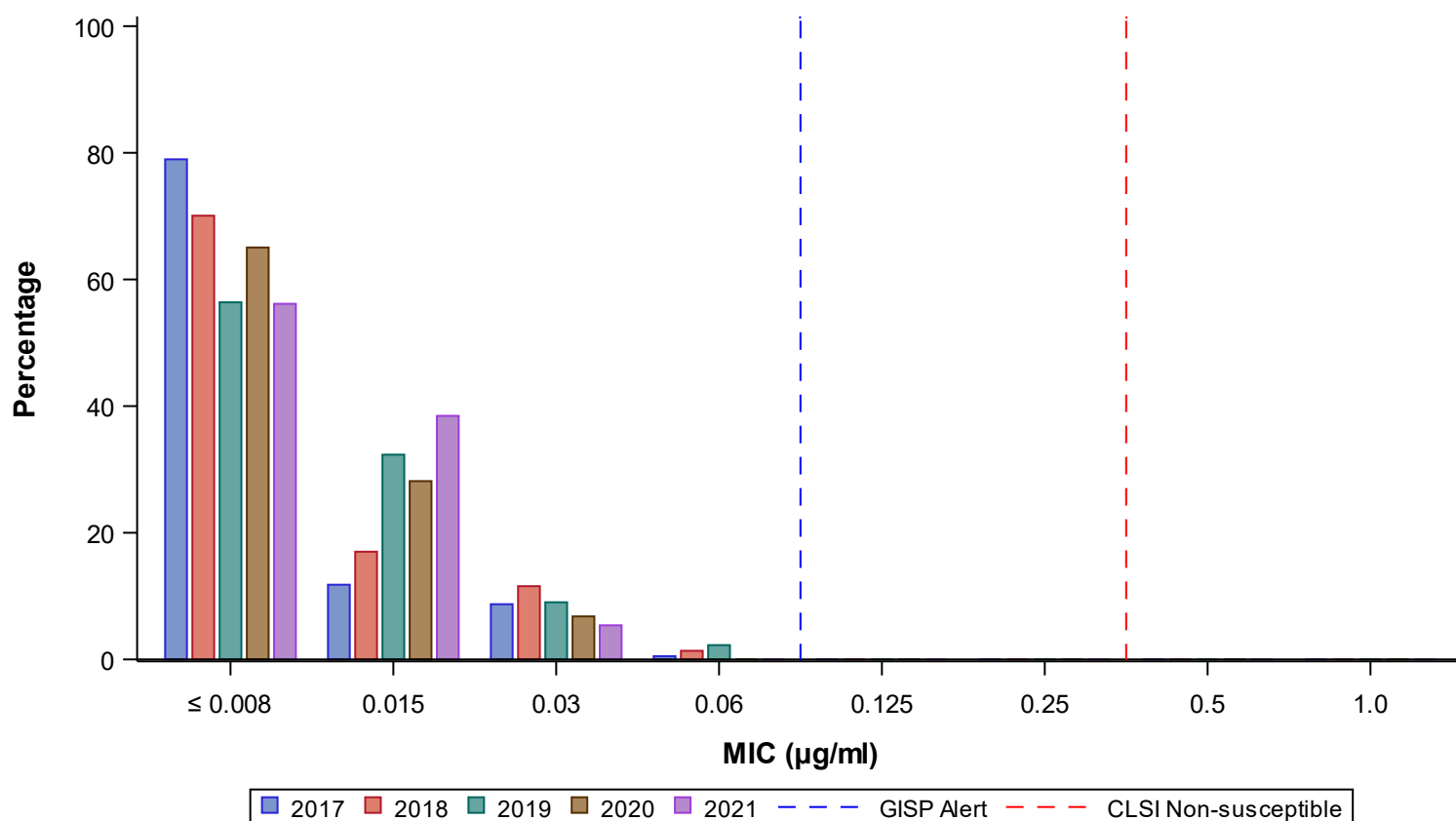
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	160 (82.1)	22 (11.3)	12 (6.2)	0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)	195
2018	111 (75.5)	26 (17.7)	8 (5.4)	1 (0.7)	1 (0.7)	0 (0.0)	0 (0.0)	147
2019	96 (72.2)	28 (21.1)	4 (3.0)	4 (3.0)	1 (0.8)	0 (0.0)	0 (0.0)	133
2020	76 (73.8)	24 (23.3)	2 (1.9)	1 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	103
2021	82 (63.1)	39 (30.0)	7 (5.4)	2 (1.5)	0 (0.0)	0 (0.0)	0 (0.0)	130

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	154 (79.0)	23 (11.8)	17 (8.7)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	195
2018	103 (70.1)	25 (17.0)	17 (11.6)	2 (1.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	147
2019	75 (56.4)	43 (32.3)	12 (9.0)	3 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	133
2020	67 (65.0)	29 (28.2)	7 (6.8)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	103
2021	73 (56.2)	50 (38.5)	7 (5.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	130

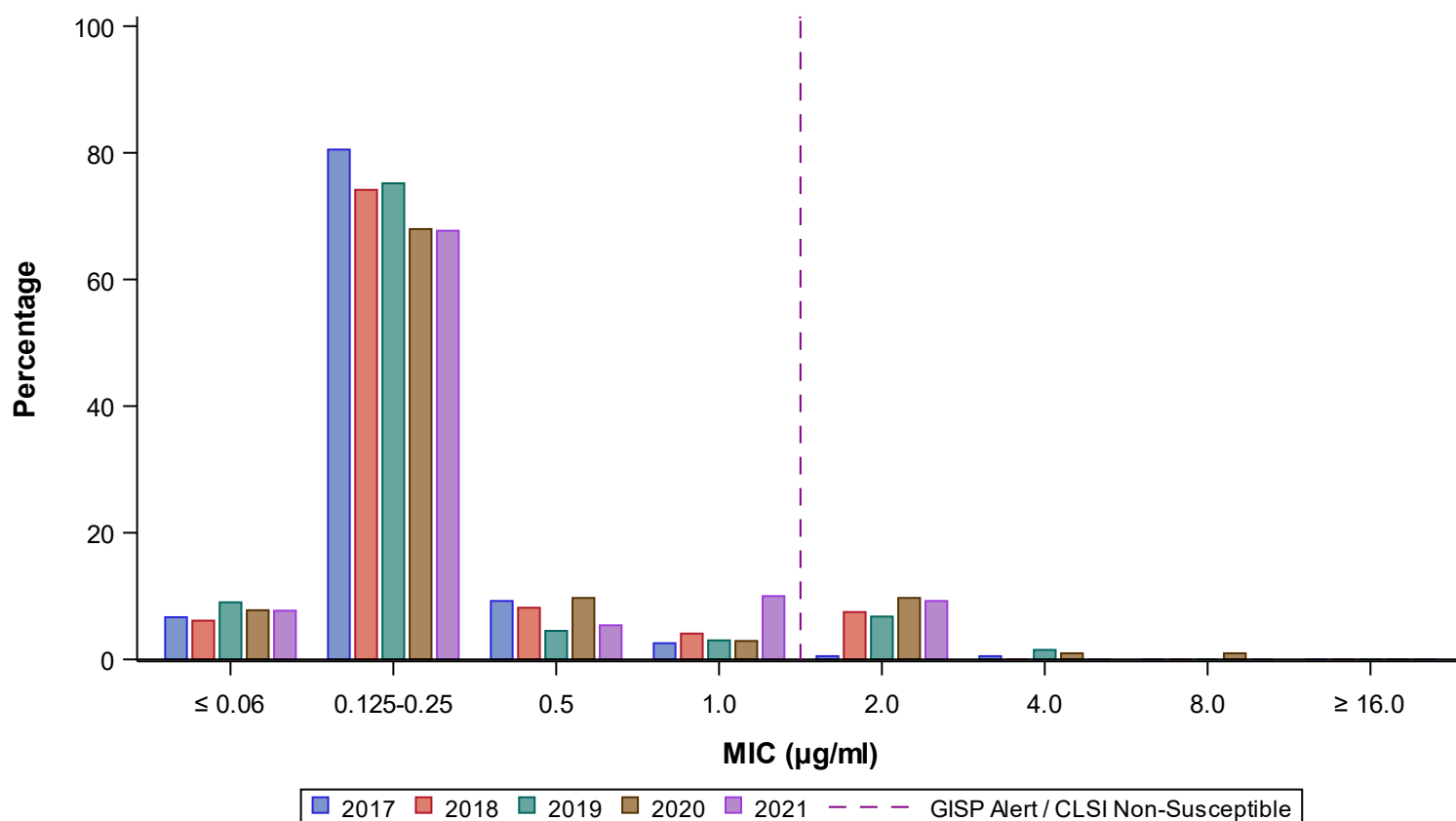
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	13 (6.7)	157 (80.5)	18 (9.2)	5 (2.6)	1 (0.5)	1 (0.5)	0 (0.0)	0 (0.0)	195
2018	9 (6.1)	109 (74.1)	12 (8.2)	6 (4.1)	11 (7.5)	0 (0.0)	0 (0.0)	0 (0.0)	147
2019	12 (9.0)	100 (75.2)	6 (4.5)	4 (3.0)	9 (6.8)	2 (1.5)	0 (0.0)	0 (0.0)	133
2020	8 (7.8)	70 (68.0)	10 (9.7)	3 (2.9)	10 (9.7)	1 (1.0)	1 (1.0)	0 (0.0)	103
2021	10 (7.7)	88 (67.7)	7 (5.4)	13 (10.0)	12 (9.2)	0 (0.0)	0 (0.0)	0 (0.0)	130

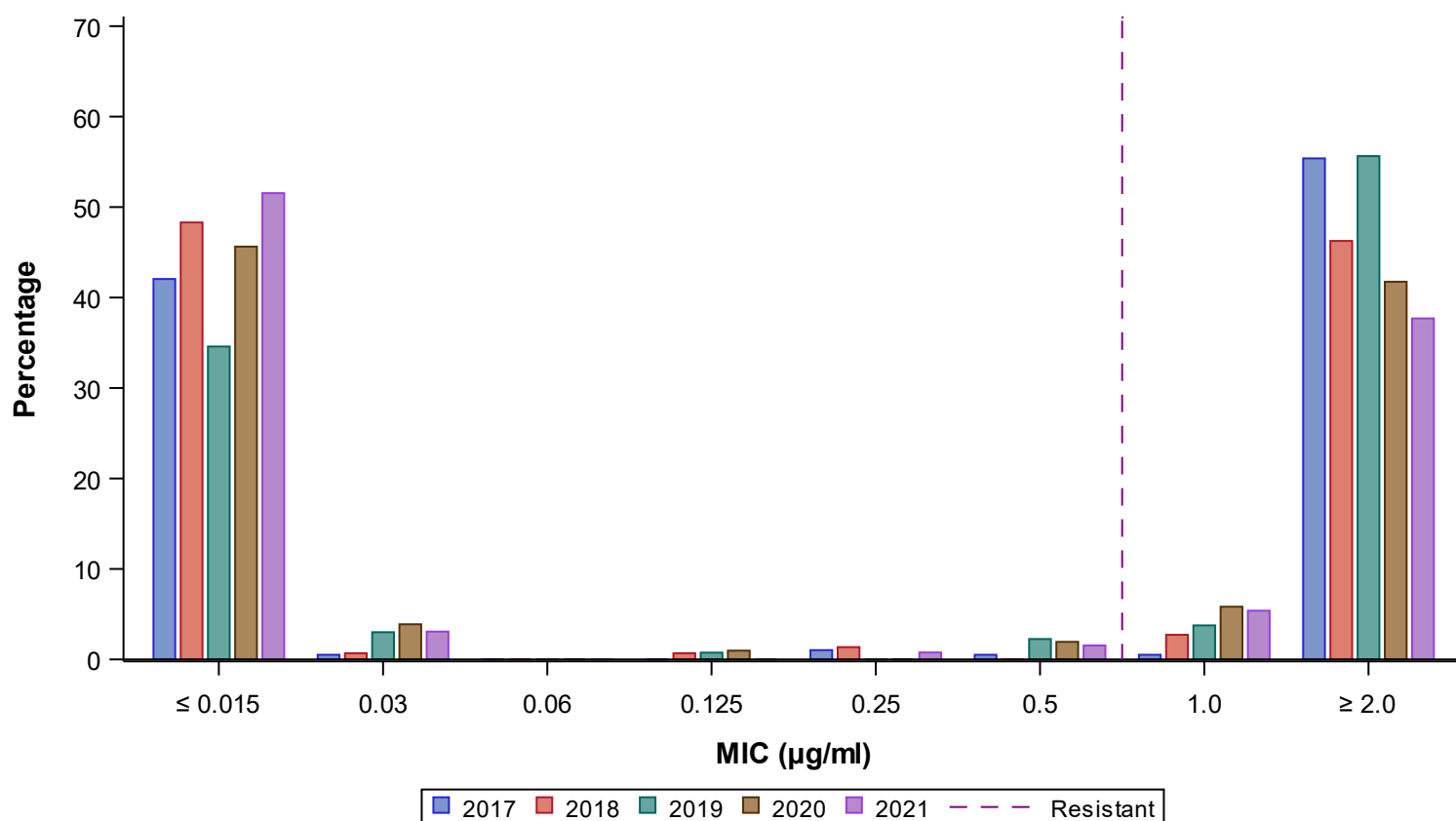
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

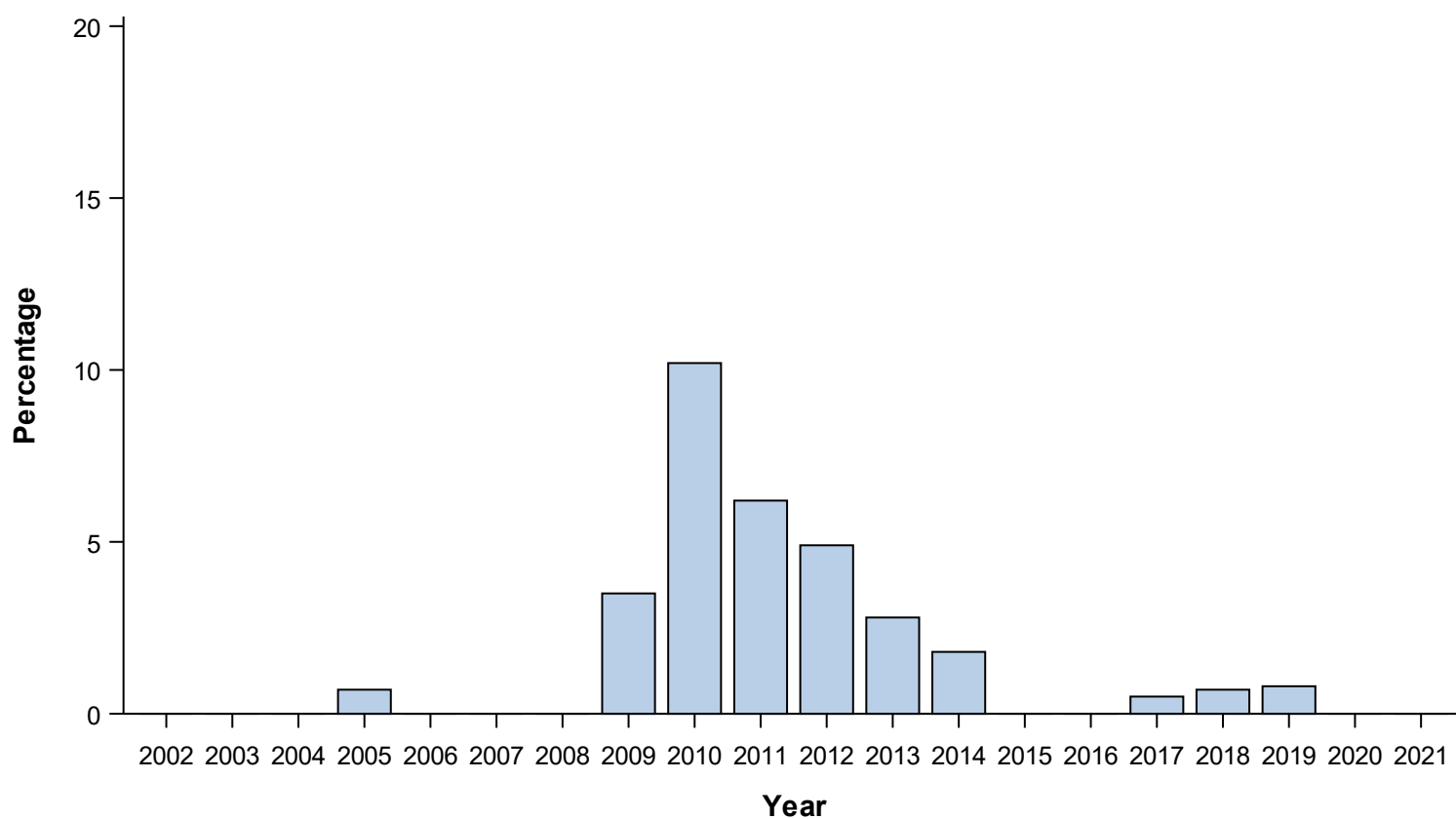
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	82 (42.1)	1 (0.5)	0 (0.0)	0 (0.0)	2 (1.0)	1 (0.5)	1 (0.5)	108 (55.4)	195
2018	71 (48.3)	1 (0.7)	0 (0.0)	1 (0.7)	2 (1.4)	0 (0.0)	4 (2.7)	68 (46.3)	147
2019	46 (34.6)	4 (3.0)	0 (0.0)	1 (0.8)	0 (0.0)	3 (2.3)	5 (3.8)	74 (55.6)	133
2020	47 (45.6)	4 (3.9)	0 (0.0)	1 (1.0)	0 (0.0)	2 (1.9)	6 (5.8)	43 (41.7)	103
2021	67 (51.5)	4 (3.1)	0 (0.0)	0 (0.0)	1 (0.8)	2 (1.5)	7 (5.4)	49 (37.7)	130

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2002-2021

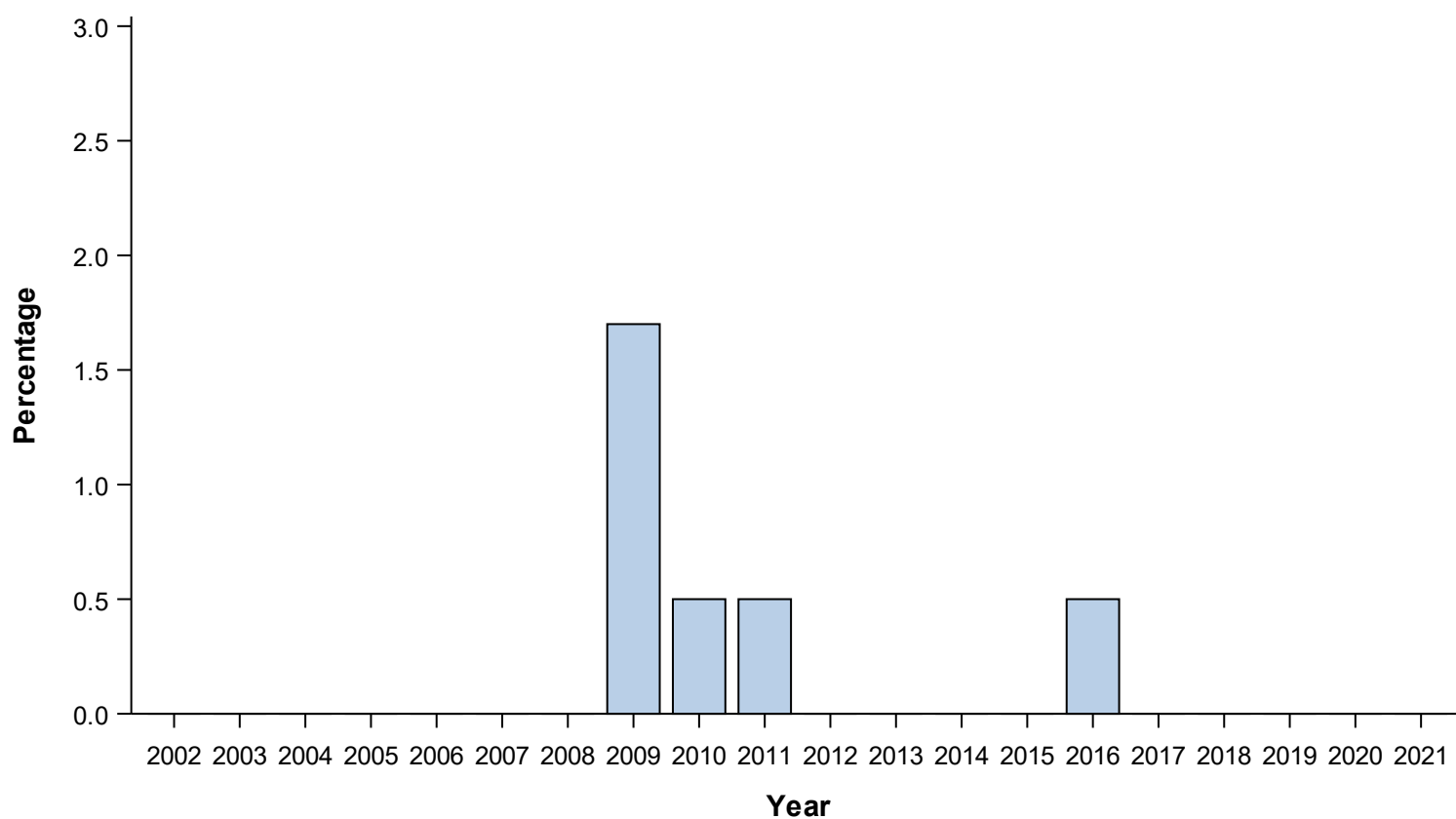


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	2 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	6 (3.5)	21 (10.2)	13 (6.2)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
10 (4.9)	5 (2.8)	4 (1.8)	0 (0.0)	0 (0.0)	1 (0.5)	1 (0.7)	1 (0.8)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 μ g/ml.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2002-2021

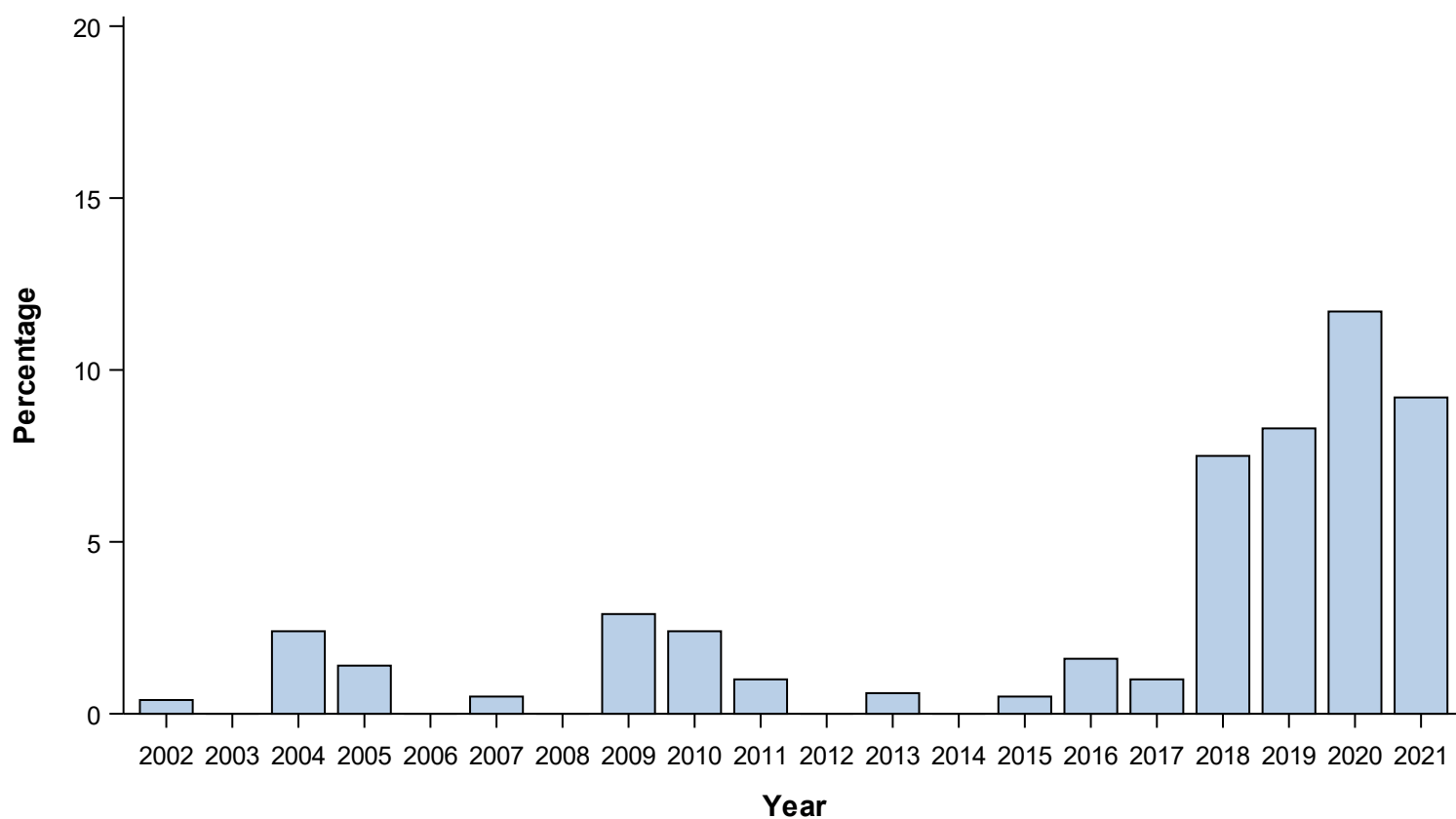


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (1.7)	1 (0.5)	1 (0.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.5)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), San Diego, California, 2002-2021

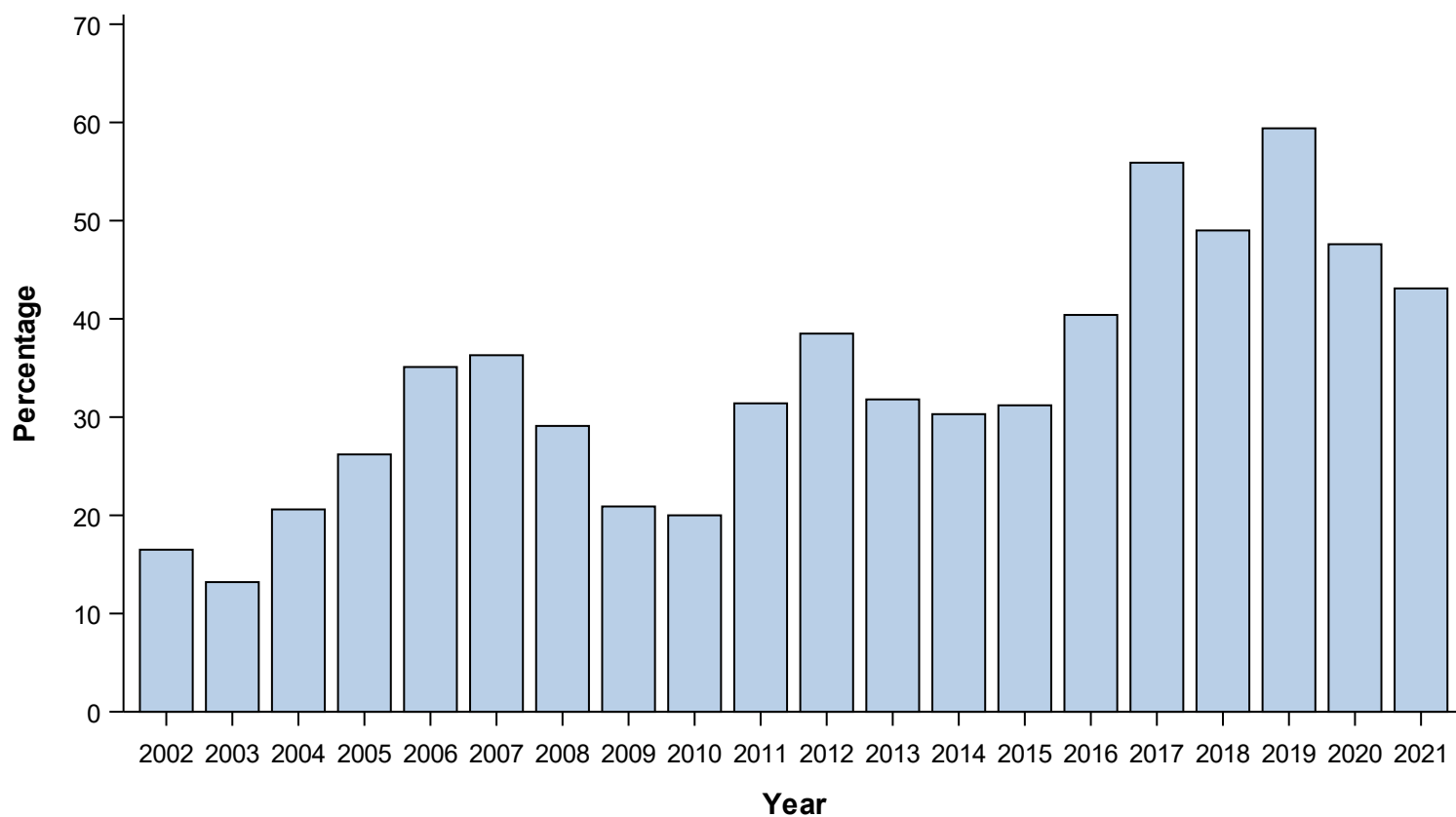


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (0.4)	0 (0.0)	6 (2.4)	4 (1.4)	0 (0.0)	1 (0.5)	0 (0.0)	5 (2.9)	5 (2.4)	2 (1.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	1 (0.6)	0 (0.0)	1 (0.5)	3 (1.6)	2 (1.0)	11 (7.5)	11 (8.3)	12 (11.7)	12 (9.2)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
San Diego, California, 2002-2021

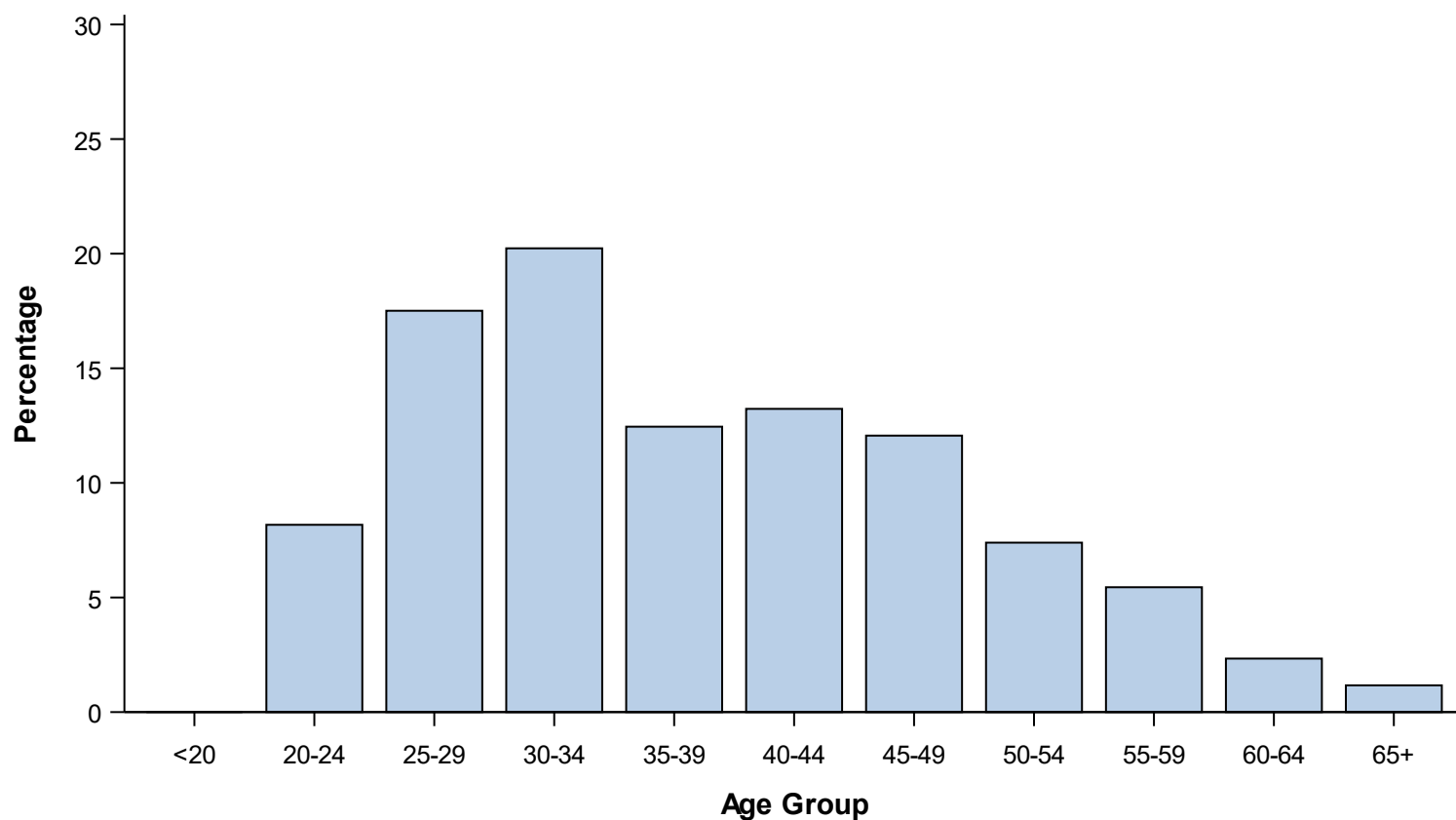


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
41 (16.5)	34 (13.2)	52 (20.6)	77 (26.2)	92 (35.1)	69 (36.3)	53 (29.1)	36 (20.9)	41 (20.0)	66 (31.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
79 (38.5)	56 (31.8)	66 (30.3)	59 (31.2)	78 (40.4)	109 (55.9)	72 (49.0)	79 (59.4)	49 (47.6)	56 (43.1)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

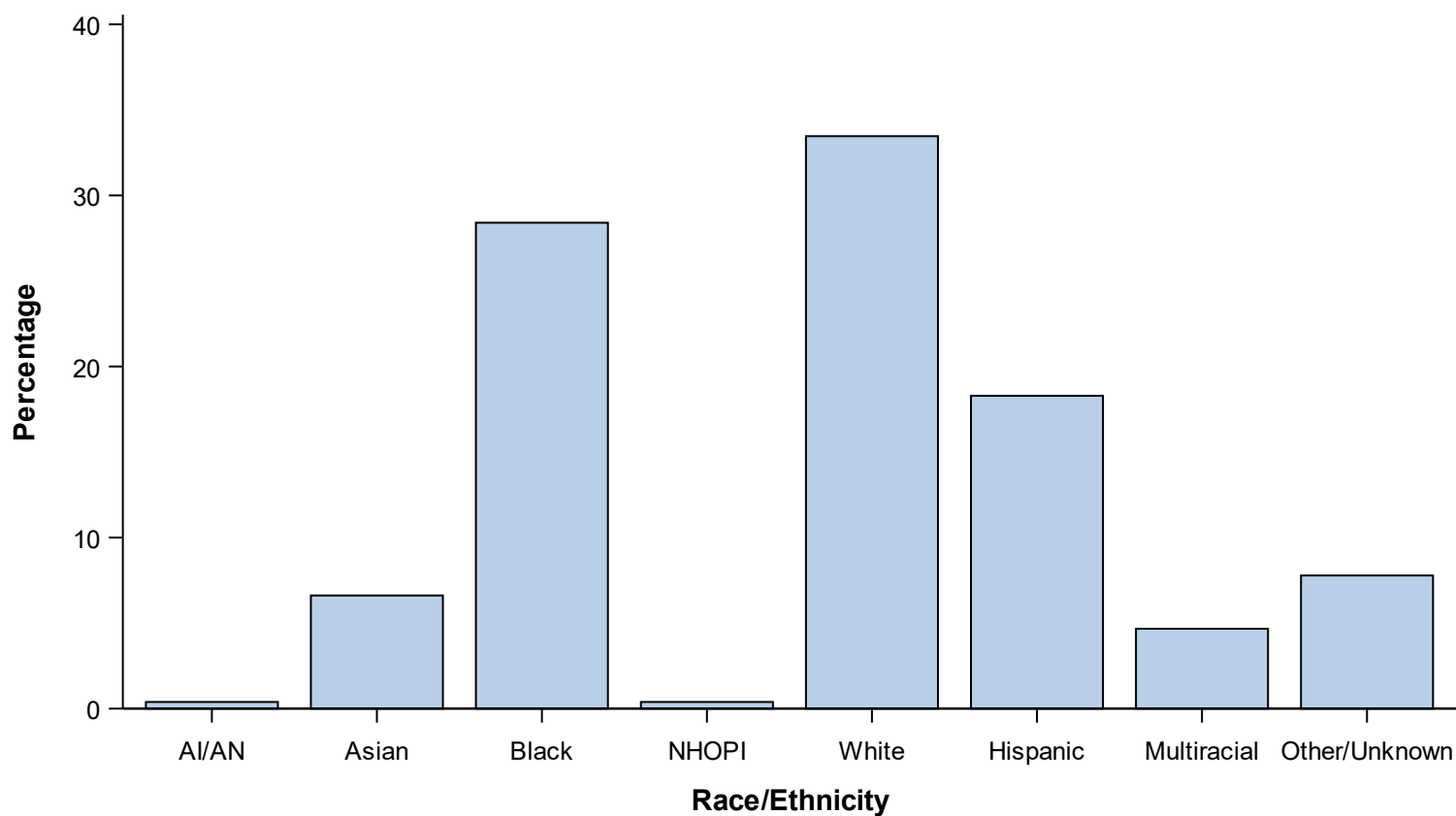
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
0 (0.0)	21 (8.2)	45 (17.5)	52 (20.2)	32 (12.5)	34 (13.2)	31 (12.1)	19 (7.4)	14 (5.4)	6 (2.3)	3 (1.2)	257

Note: Cases with unknown age were excluded.

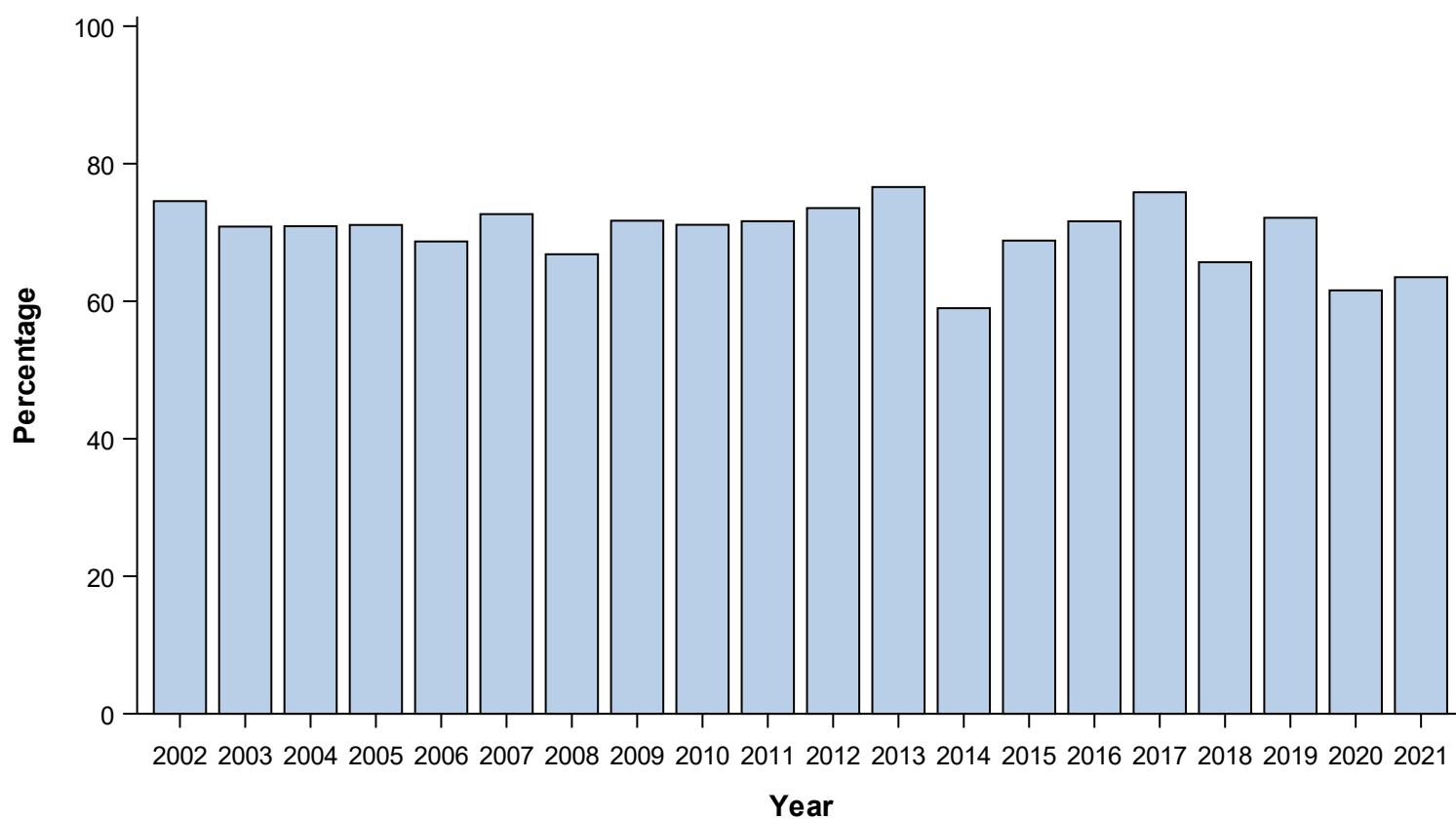
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
1 (0.4)	17 (6.6)	73 (28.4)	1 (0.4)	86 (33.5)	47 (18.3)	12 (4.7)	20 (7.8)	257

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
San Francisco, California, 2002-2021

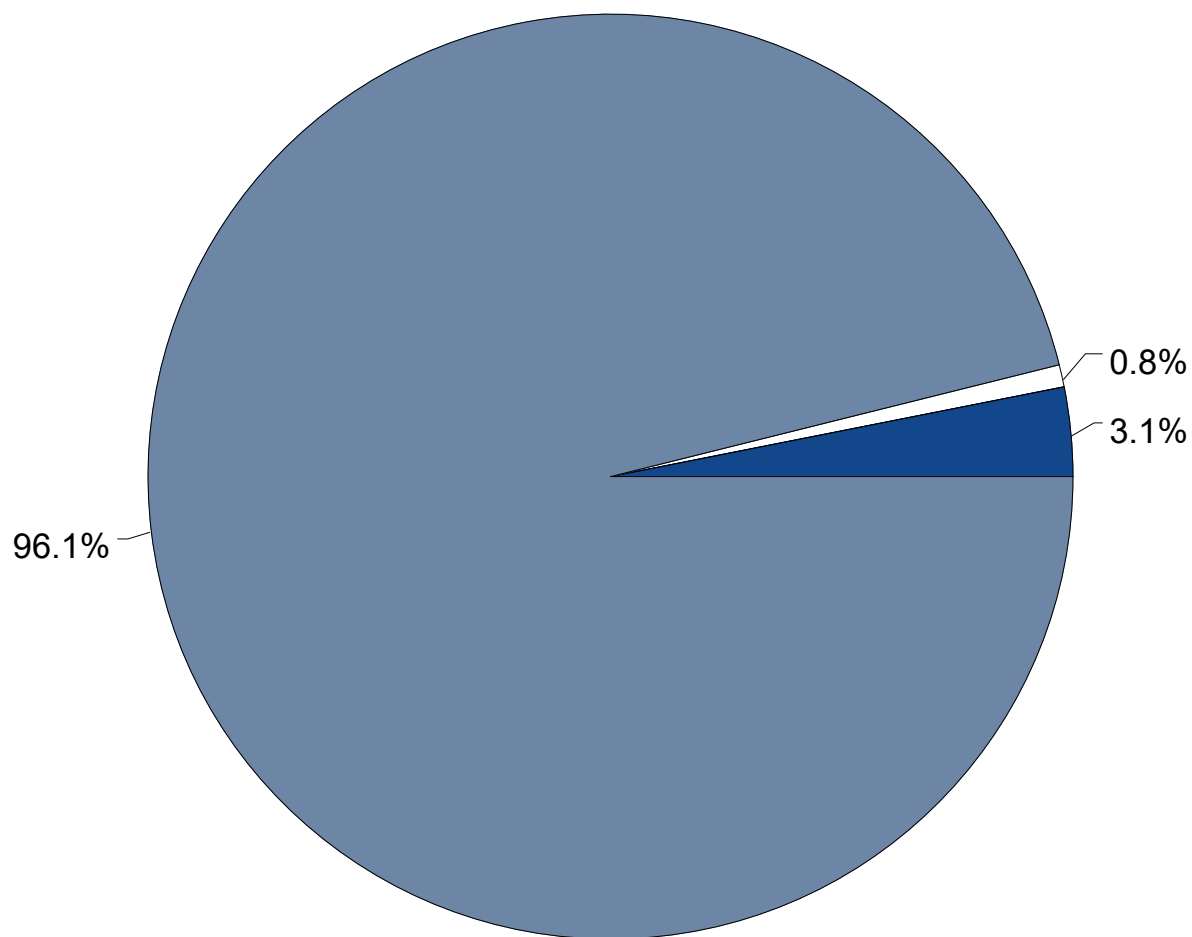


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
208 (74.6)	192 (70.8)	212 (70.9)	209 (71.1)	204 (68.7)	210 (72.7)	139 (66.8)	185 (71.7)	160 (71.1)	149 (71.6)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
189 (73.5)	203 (76.6)	174 (59.0)	203 (68.8)	212 (71.6)	226 (75.8)	155 (65.7)	176 (72.1)	125 (61.6)	160 (63.5)

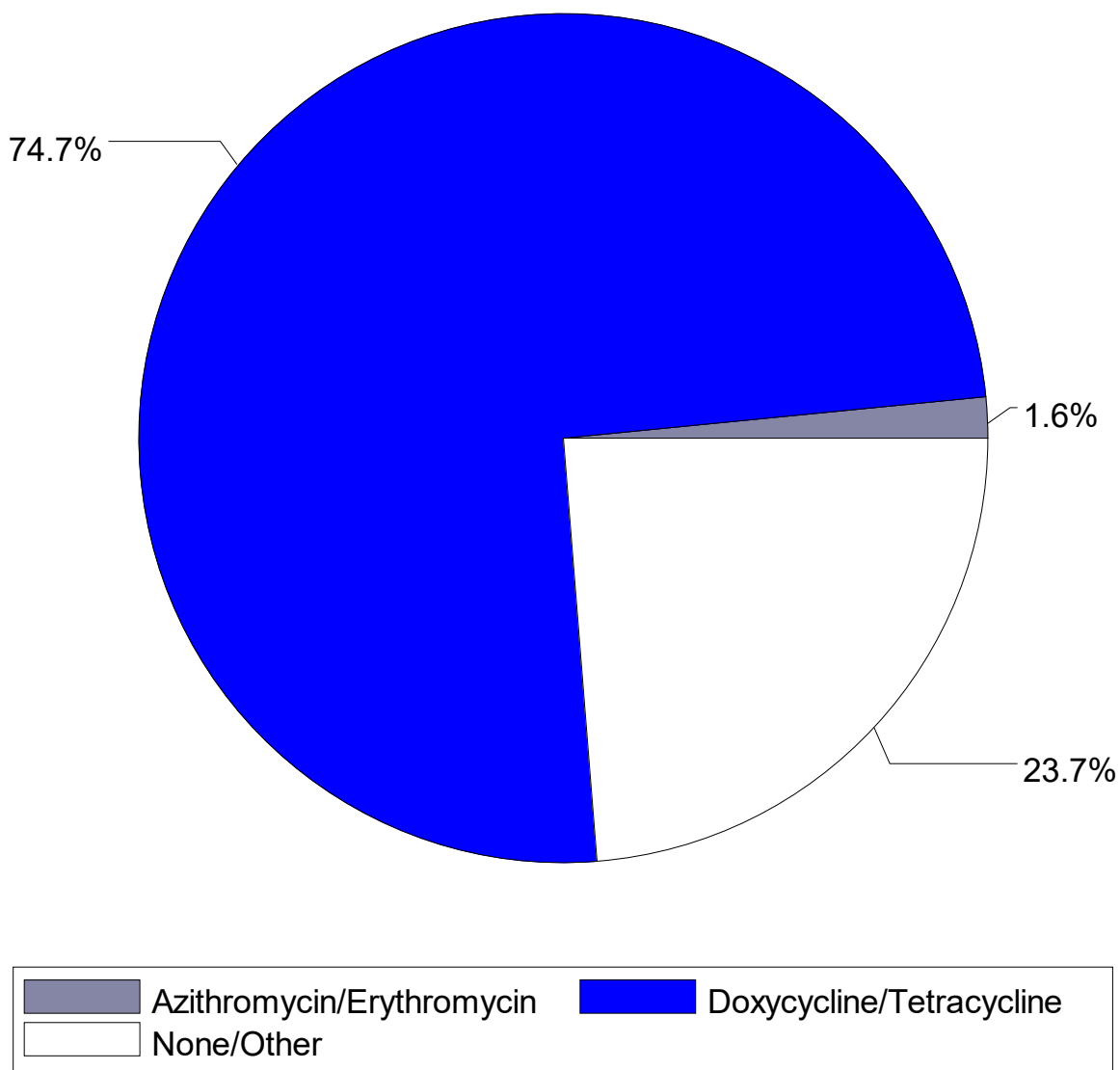
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2021



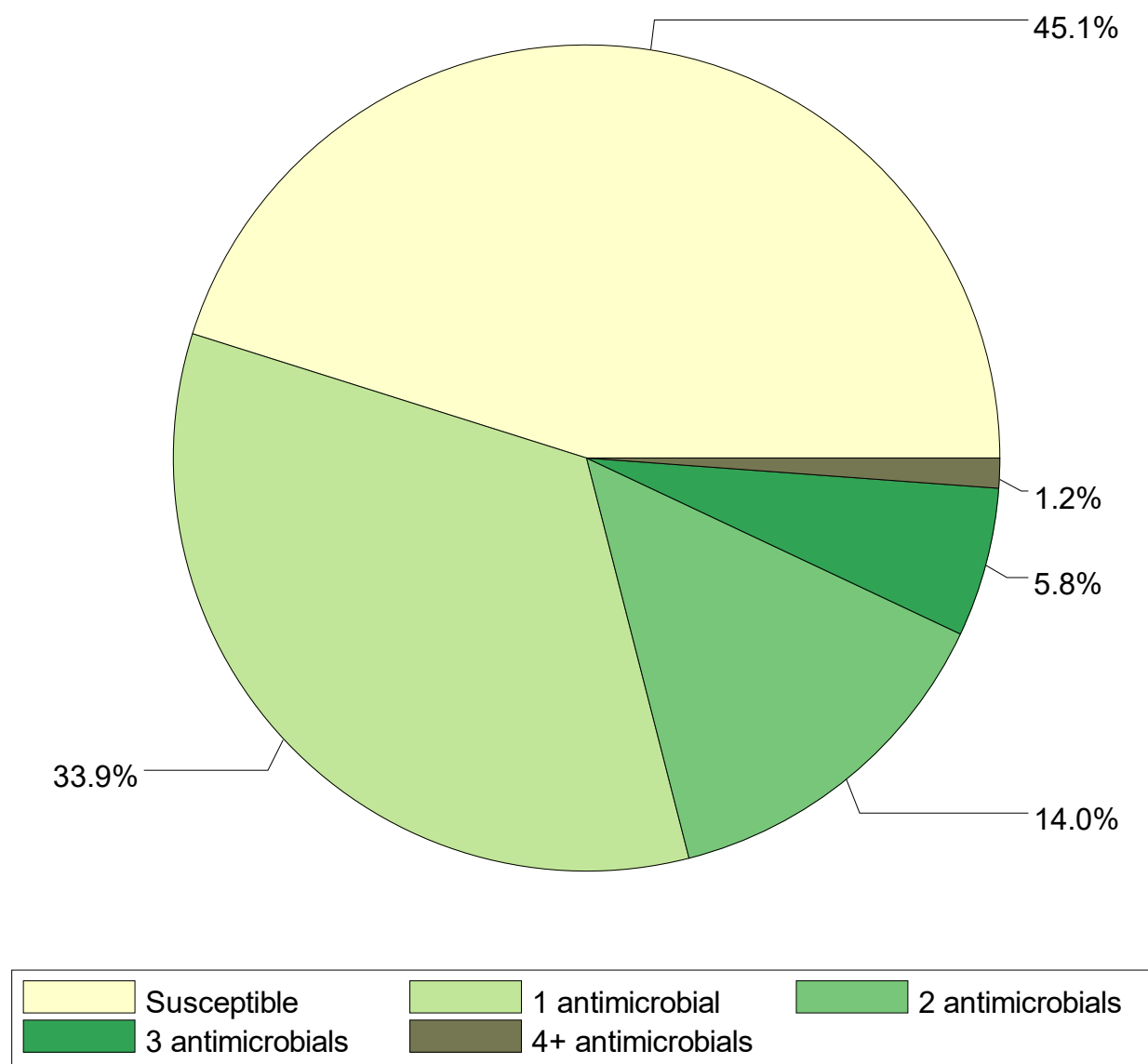
Primary Treatment	Count	Percentage
None	8	3.1
Gentamicin 240 mg	2	0.8
Ceftriaxone 500 mg	247	96.1

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	4	1.6
Doxycycline/Tetracycline	192	74.7
None/Other	61	23.7

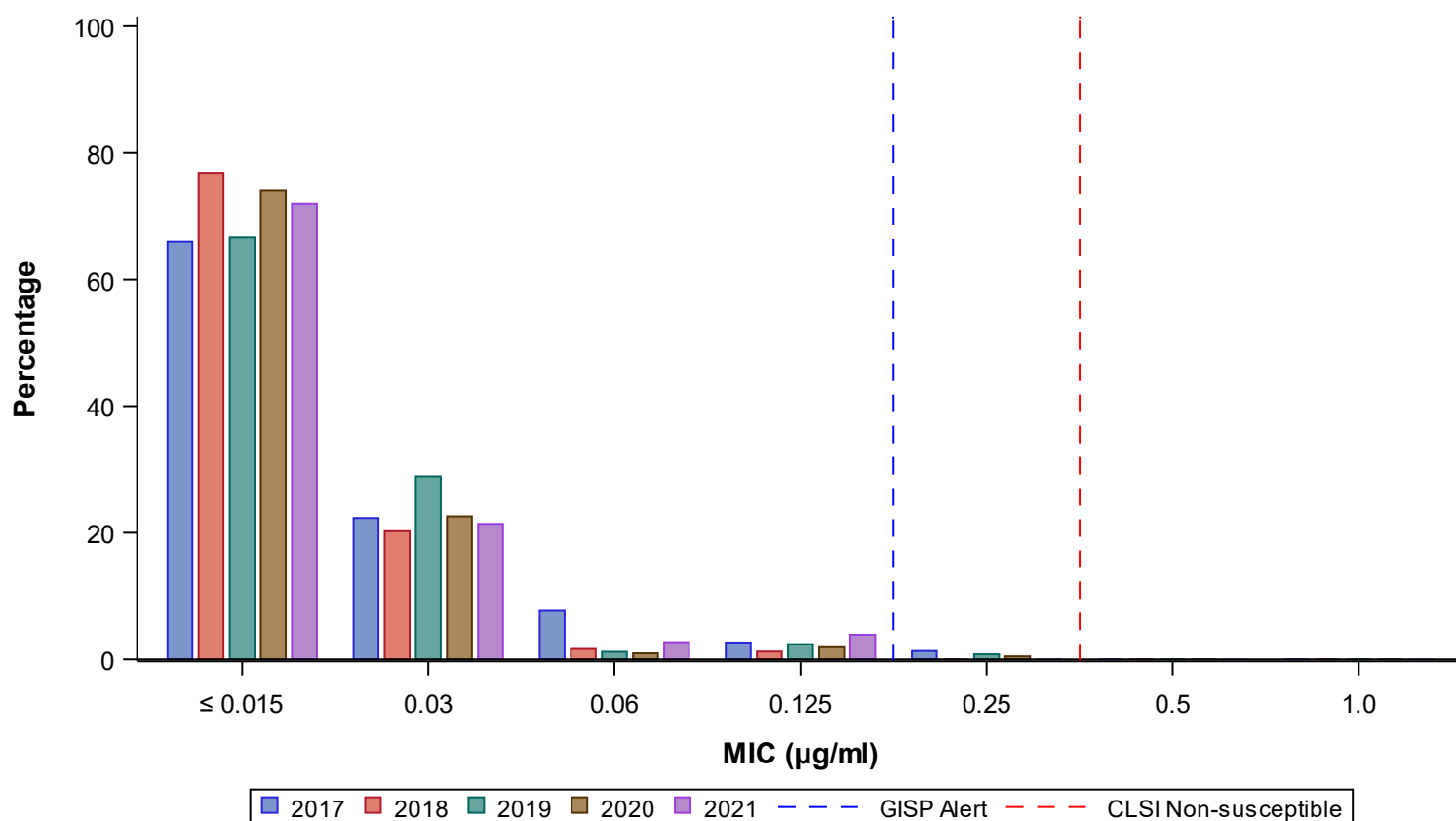
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	116	45.1
1 antimicrobial	87	33.9
2 antimicrobials	36	14.0
3 antimicrobials	15	5.8
4+ antimicrobials	3	1.2

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2017-2021



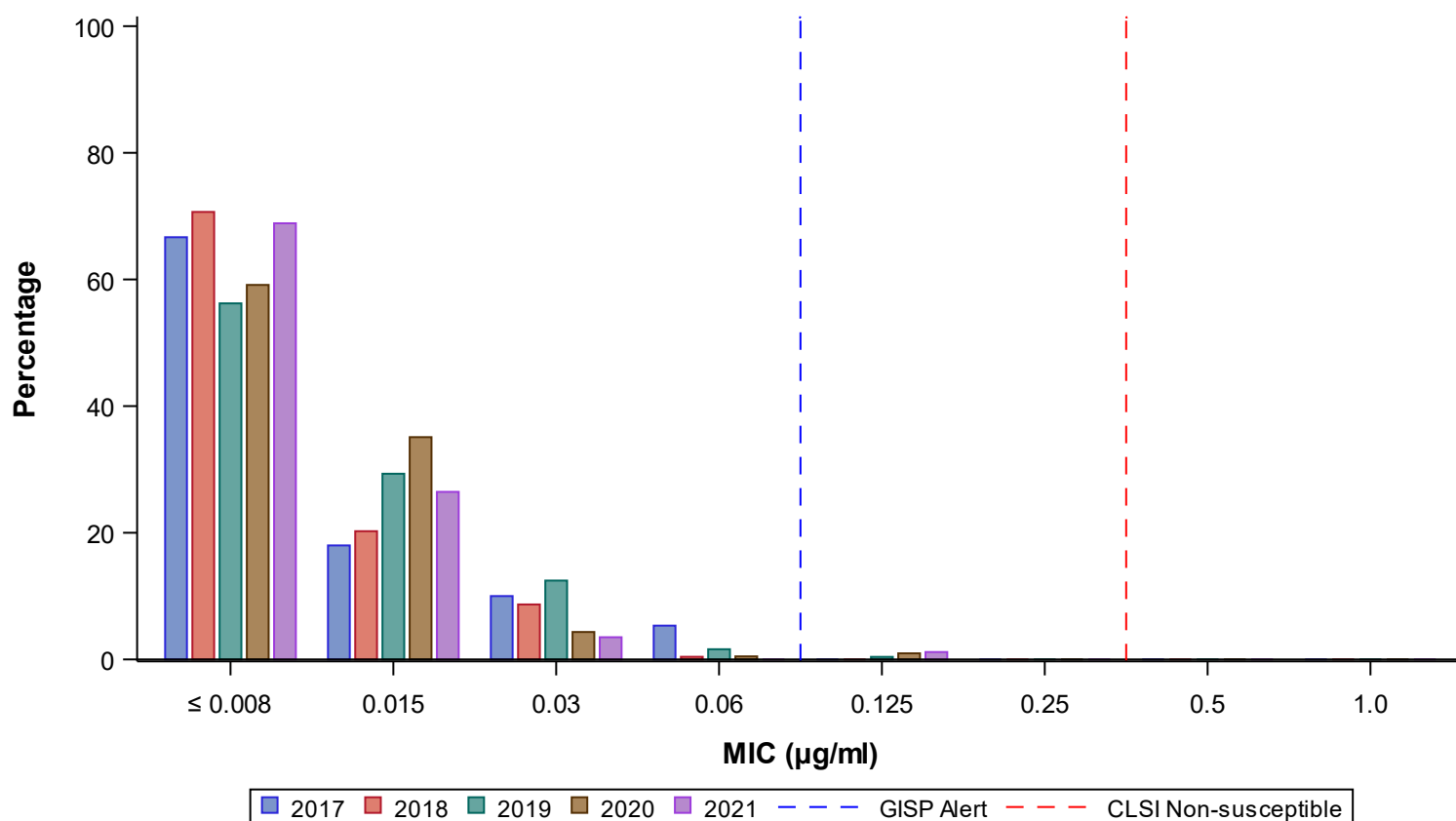
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	198 (66.0)	67 (22.3)	23 (7.7)	8 (2.7)	4 (1.3)	0 (0.0)	0 (0.0)	300
2018	186 (76.9)	49 (20.2)	4 (1.7)	3 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	242
2019	166 (66.7)	72 (28.9)	3 (1.2)	6 (2.4)	2 (0.8)	0 (0.0)	0 (0.0)	249
2020	154 (74.0)	47 (22.6)	2 (1.0)	4 (1.9)	1 (0.5)	0 (0.0)	0 (0.0)	208
2021	185 (72.0)	55 (21.4)	7 (2.7)	10 (3.9)	0 (0.0)	0 (0.0)	0 (0.0)	257

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	200 (66.7)	54 (18.0)	30 (10.0)	16 (5.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	300
2018	171 (70.7)	49 (20.2)	21 (8.7)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	242
2019	140 (56.2)	73 (29.3)	31 (12.4)	4 (1.6)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	249
2020	123 (59.1)	73 (35.1)	9 (4.3)	1 (0.5)	2 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	208
2021	177 (68.9)	68 (26.5)	9 (3.5)	0 (0.0)	3 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	257

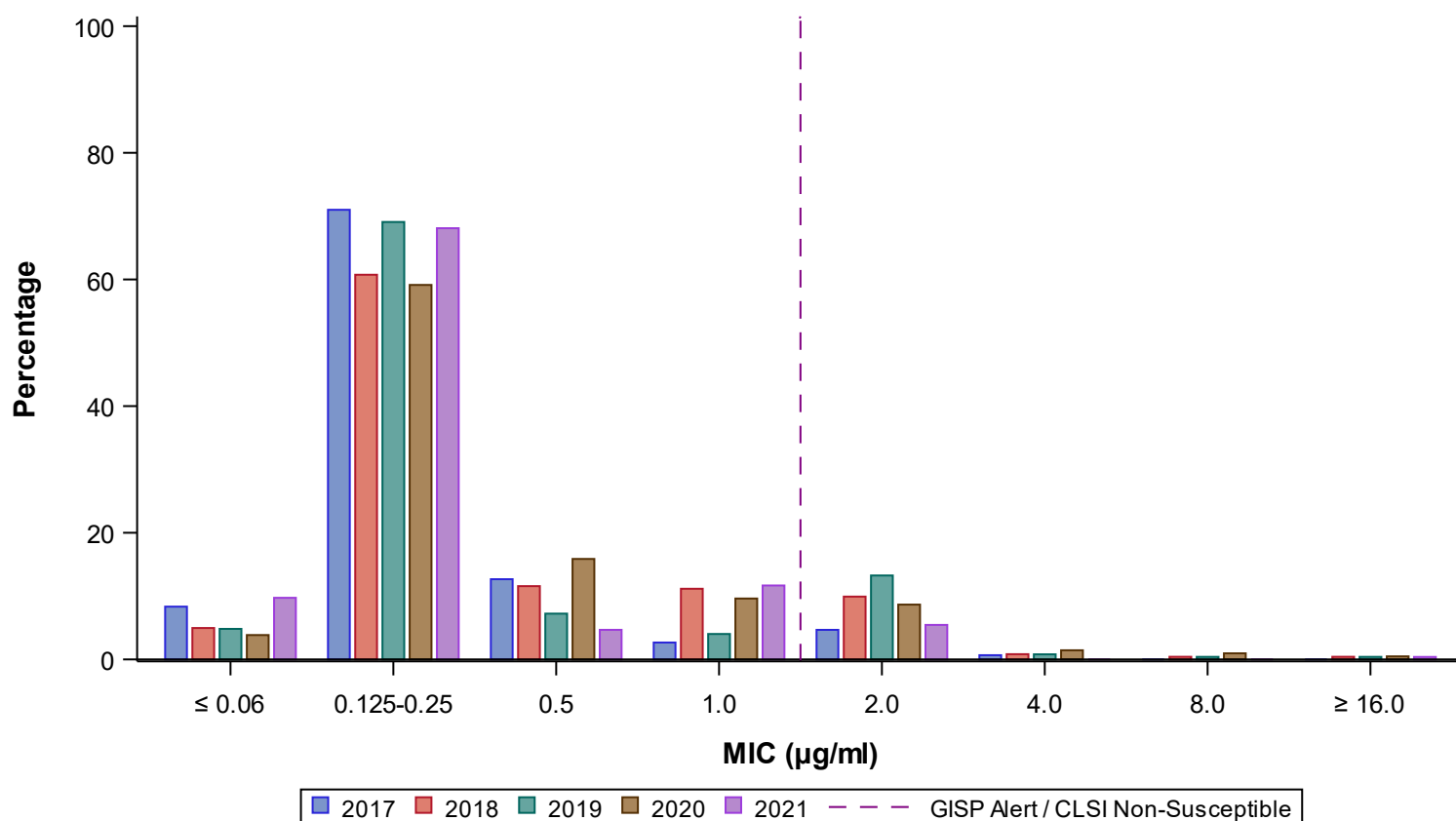
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	25 (8.3)	213 (71.0)	38 (12.7)	8 (2.7)	14 (4.7)	2 (0.7)	0 (0.0)	0 (0.0)	300
2018	12 (5.0)	147 (60.7)	28 (11.6)	27 (11.2)	24 (9.9)	2 (0.8)	1 (0.4)	1 (0.4)	242
2019	12 (4.8)	172 (69.1)	18 (7.2)	10 (4.0)	33 (13.3)	2 (0.8)	1 (0.4)	1 (0.4)	249
2020	8 (3.8)	123 (59.1)	33 (15.9)	20 (9.6)	18 (8.7)	3 (1.4)	2 (1.0)	1 (0.5)	208
2021	25 (9.7)	175 (68.1)	12 (4.7)	30 (11.7)	14 (5.4)	0 (0.0)	0 (0.0)	1 (0.4)	257

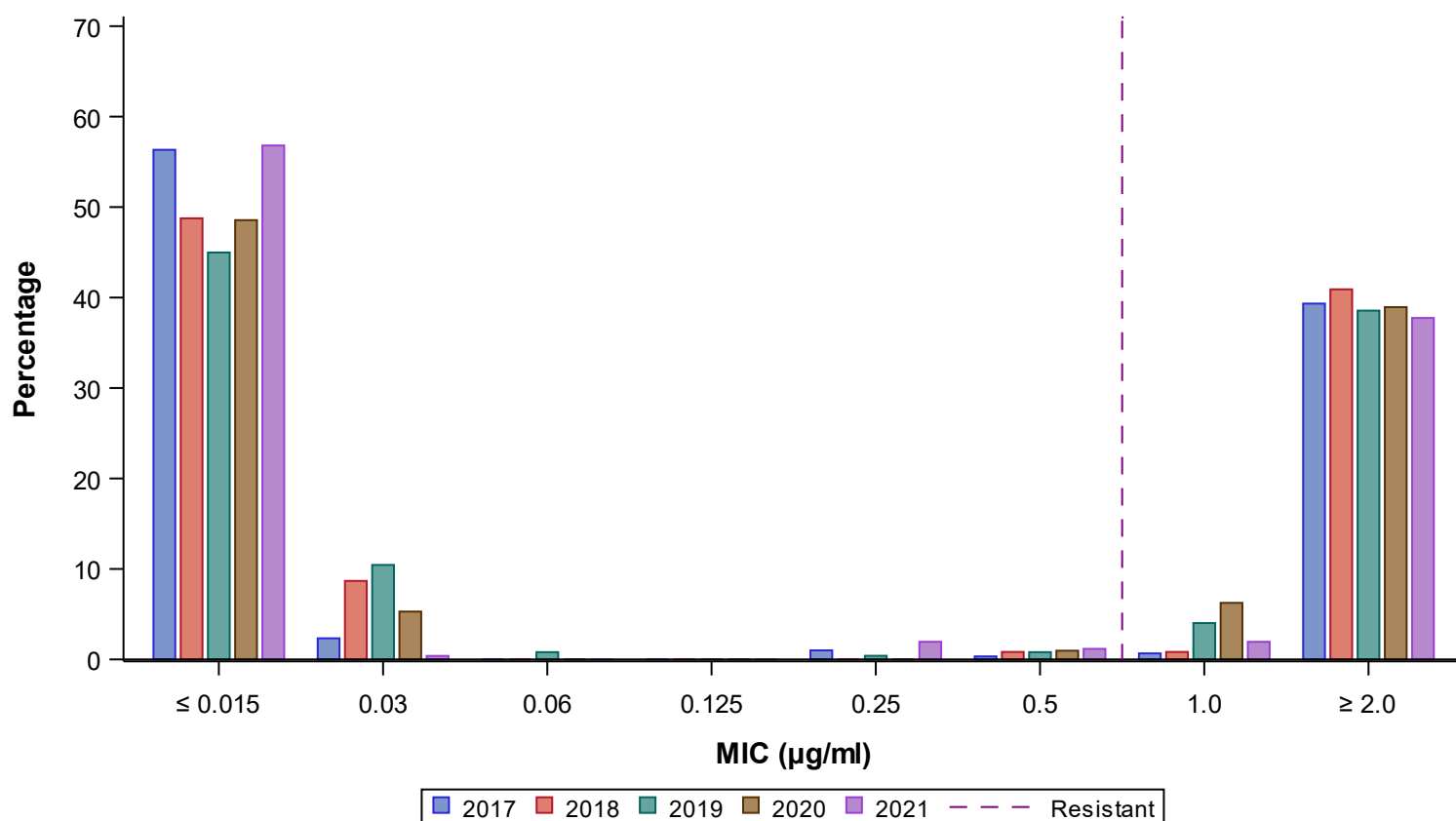
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

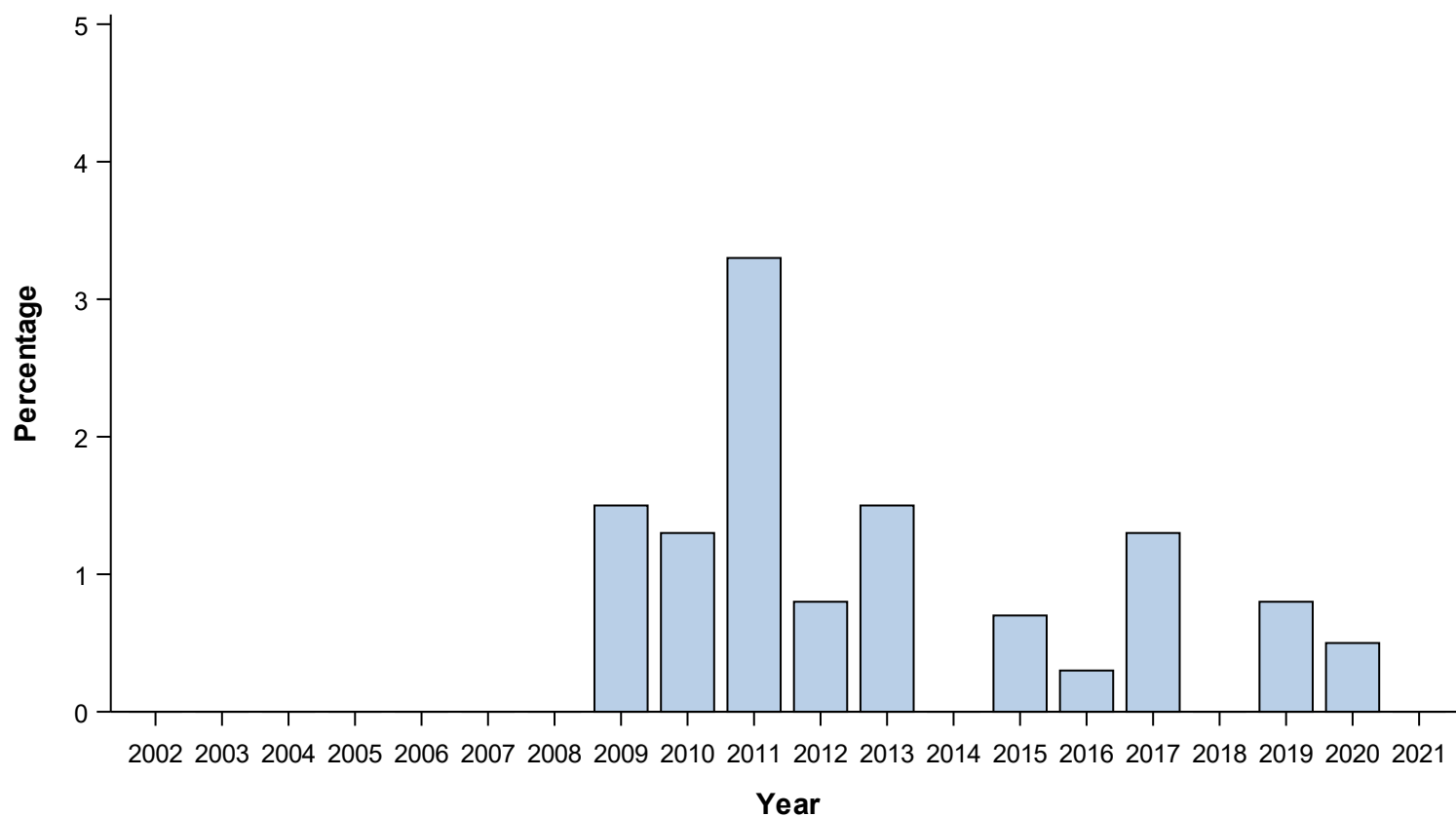
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	169 (56.3)	7 (2.3)	0 (0.0)	0 (0.0)	3 (1.0)	1 (0.3)	2 (0.7)	118 (39.3)	300
2018	118 (48.8)	21 (8.7)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.8)	2 (0.8)	99 (40.9)	242
2019	112 (45.0)	26 (10.4)	2 (0.8)	0 (0.0)	1 (0.4)	2 (0.8)	10 (4.0)	96 (38.6)	249
2020	101 (48.6)	11 (5.3)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.0)	13 (6.3)	81 (38.9)	208
2021	146 (56.8)	1 (0.4)	0 (0.0)	0 (0.0)	5 (1.9)	3 (1.2)	5 (1.9)	97 (37.7)	257

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2002-2021

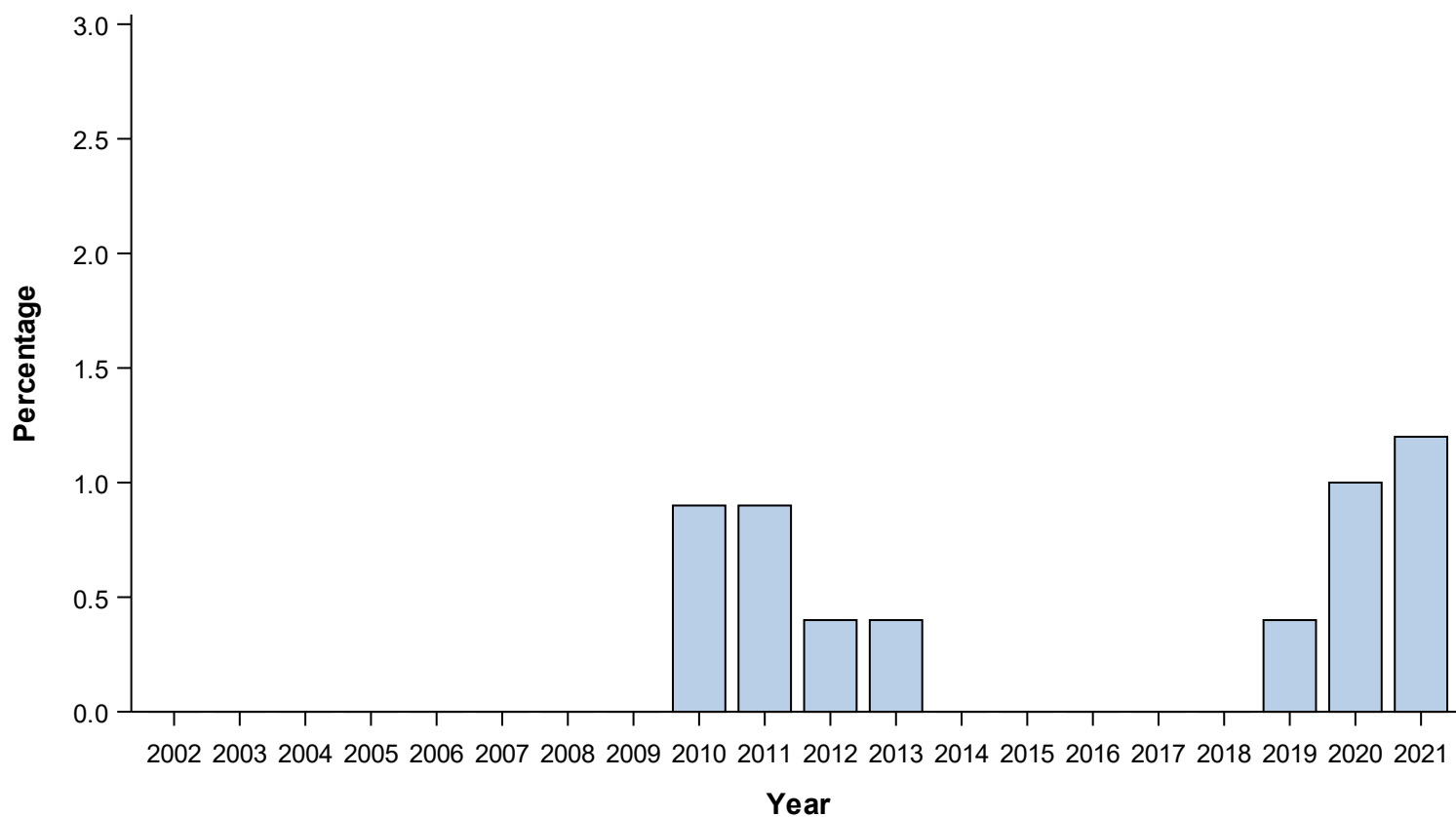


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (1.5)	3 (1.3)	7 (3.3)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
2 (0.8)	4 (1.5)	0 (0.0)	2 (0.7)	1 (0.3)	4 (1.3)	0 (0.0)	2 (0.8)	1 (0.5)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2002-2021

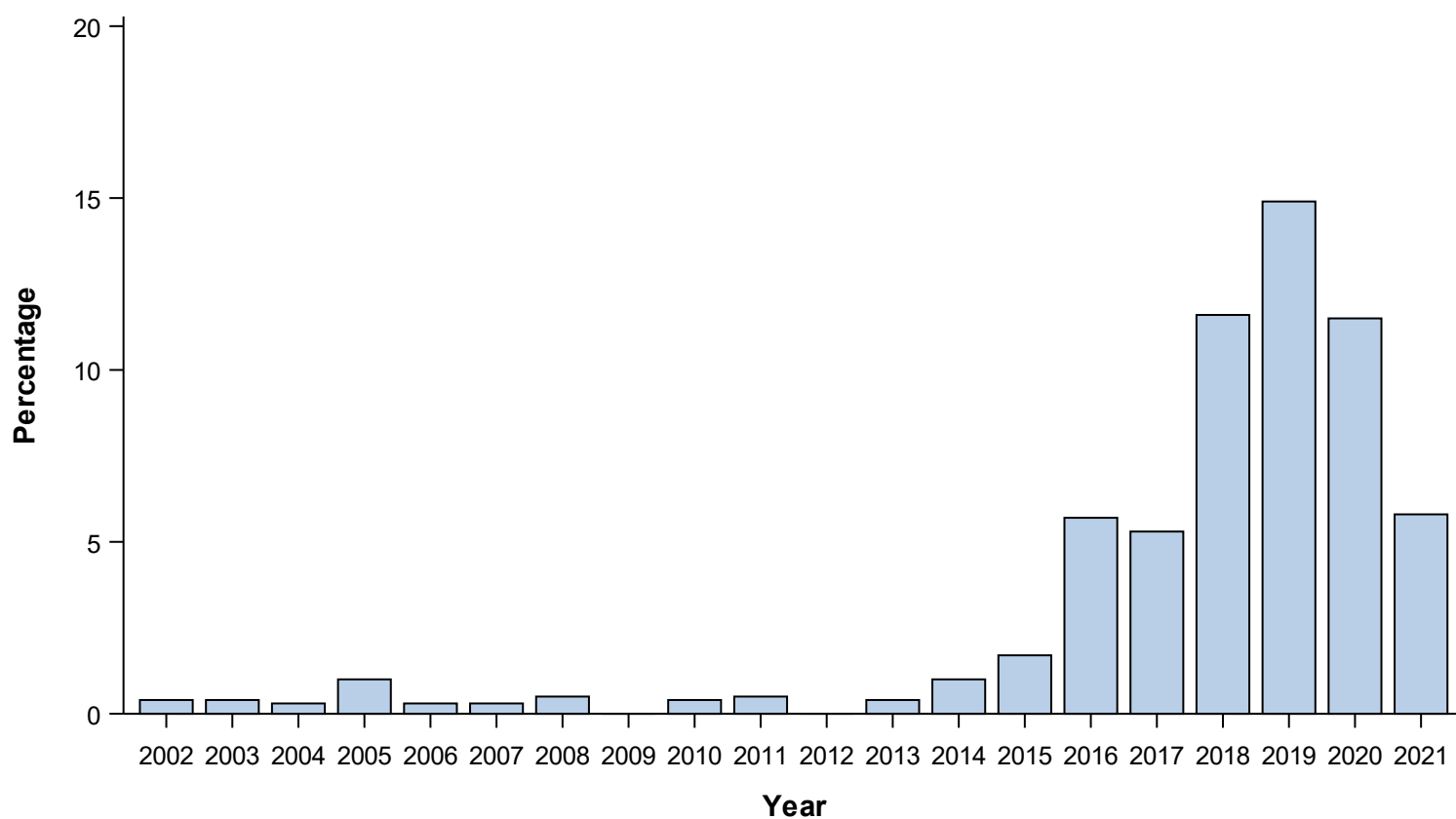


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.9)	2 (0.9)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.4)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.4)	2 (1.0)	3 (1.2)

Note: Ceftriaxone elevated MIC $\geq$ 0.125 μ g/ml.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), San Francisco, California, 2002-2021

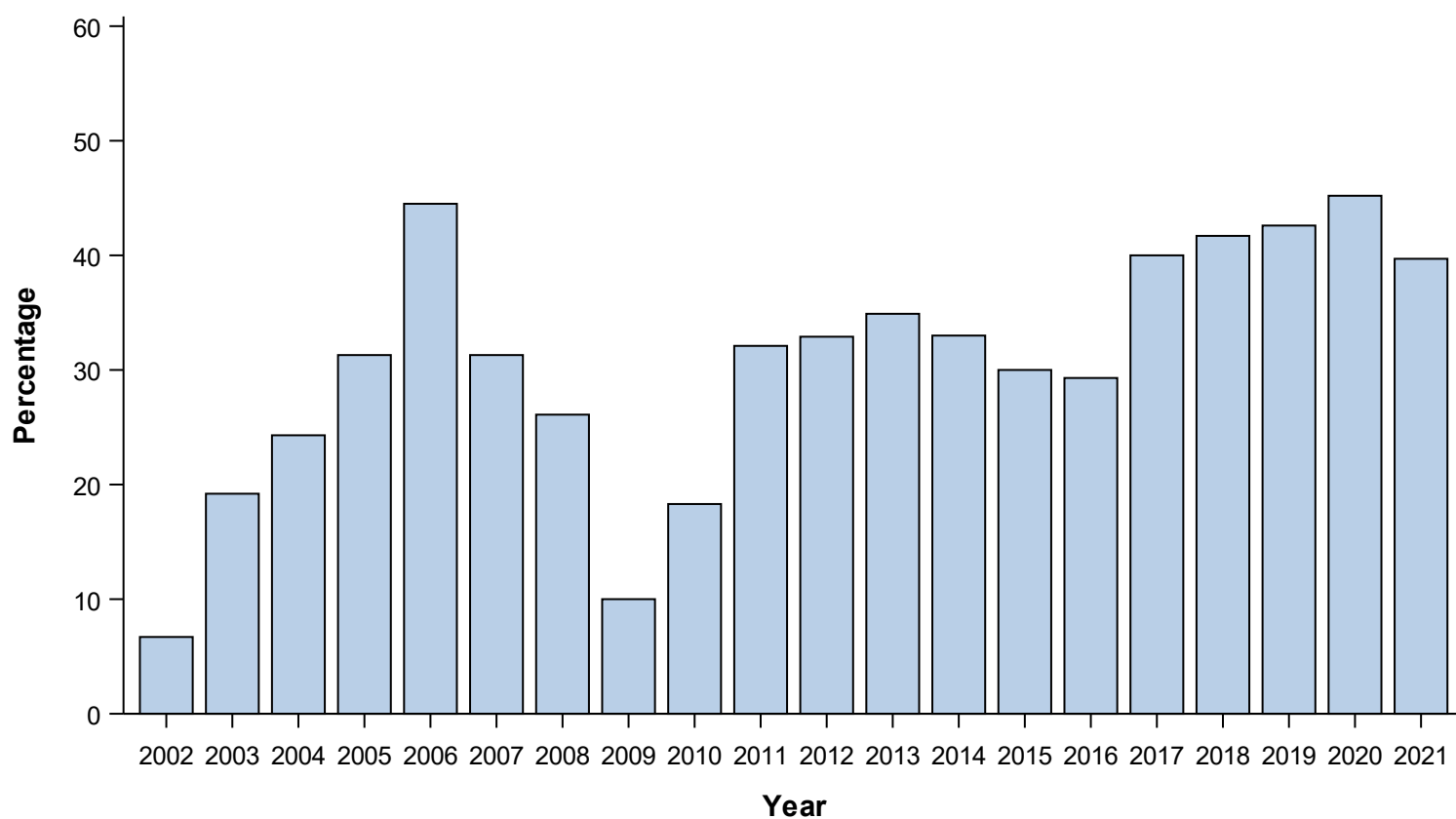


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (0.4)	1 (0.4)	1 (0.3)	3 (1.0)	1 (0.3)	1 (0.3)	1 (0.5)	0 (0.0)	1 (0.4)	1 (0.5)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	1 (0.4)	3 (1.0)	5 (1.7)	17 (5.7)	16 (5.3)	28 (11.6)	37 (14.9)	24 (11.5)	15 (5.8)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
San Francisco, California, 2002-2021

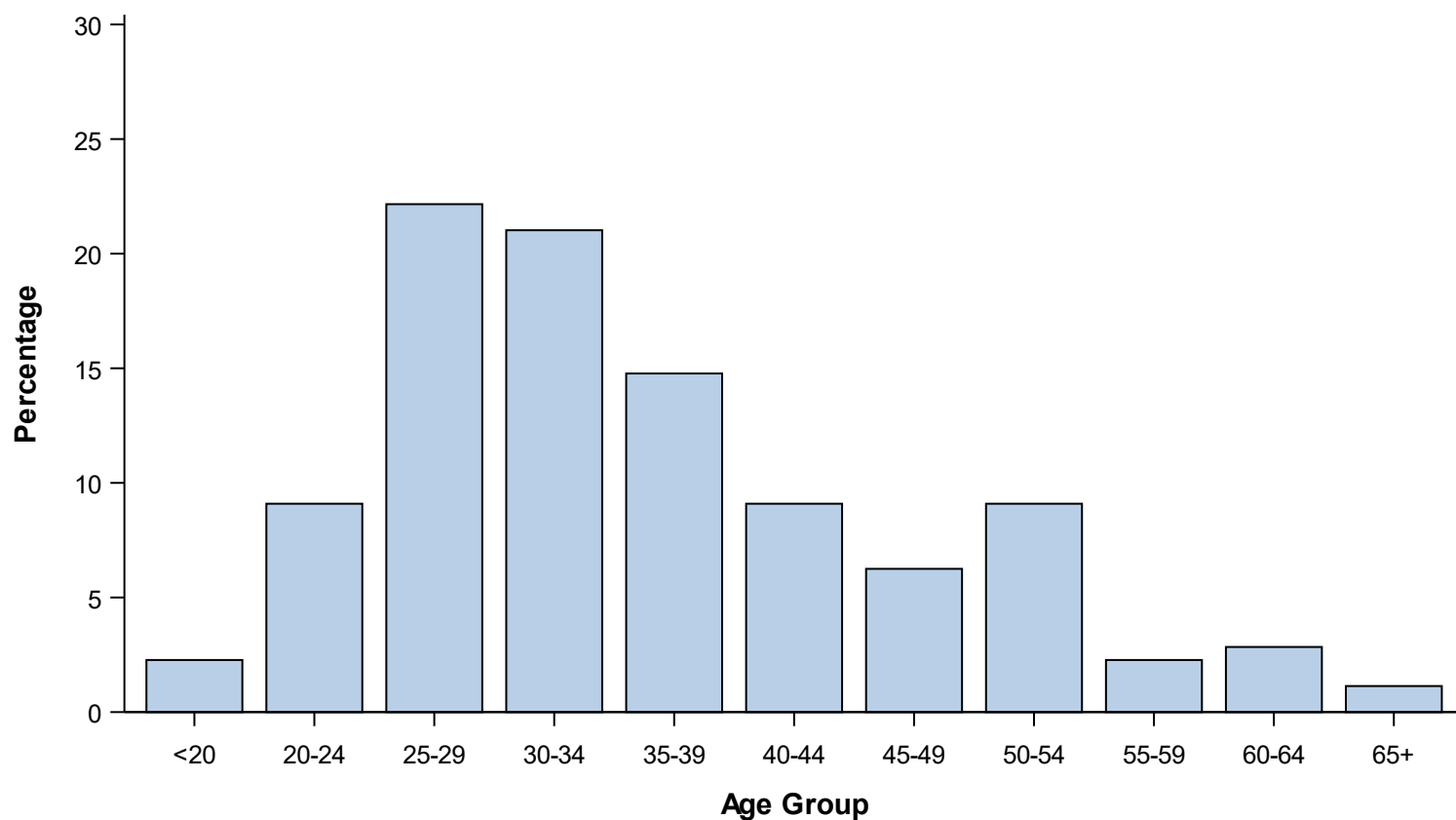


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
19 (6.7)	53 (19.2)	73 (24.3)	94 (31.3)	133 (44.5)	94 (31.3)	55 (26.1)	26 (10.0)	42 (18.3)	68 (32.1)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
85 (32.9)	94 (34.9)	99 (33.0)	90 (30.0)	88 (29.3)	120 (40.0)	101 (41.7)	106 (42.6)	94 (45.2)	102 (39.7)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

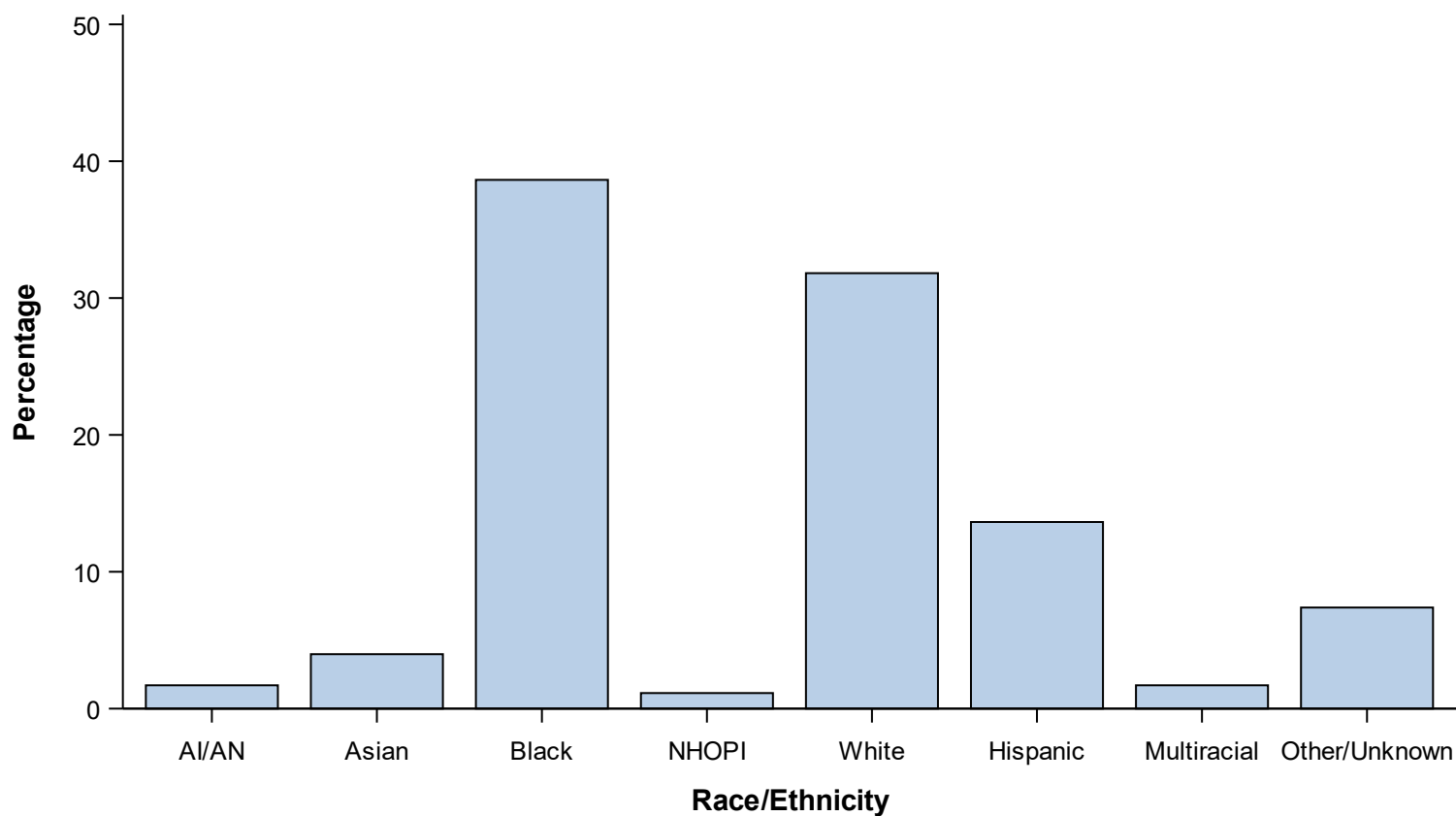
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
4 (2.3)	16 (9.1)	39 (22.2)	37 (21.0)	26 (14.8)	16 (9.1)	11 (6.3)	16 (9.1)	4 (2.3)	5 (2.8)	2 (1.1)	176

Note: Cases with unknown age were excluded.

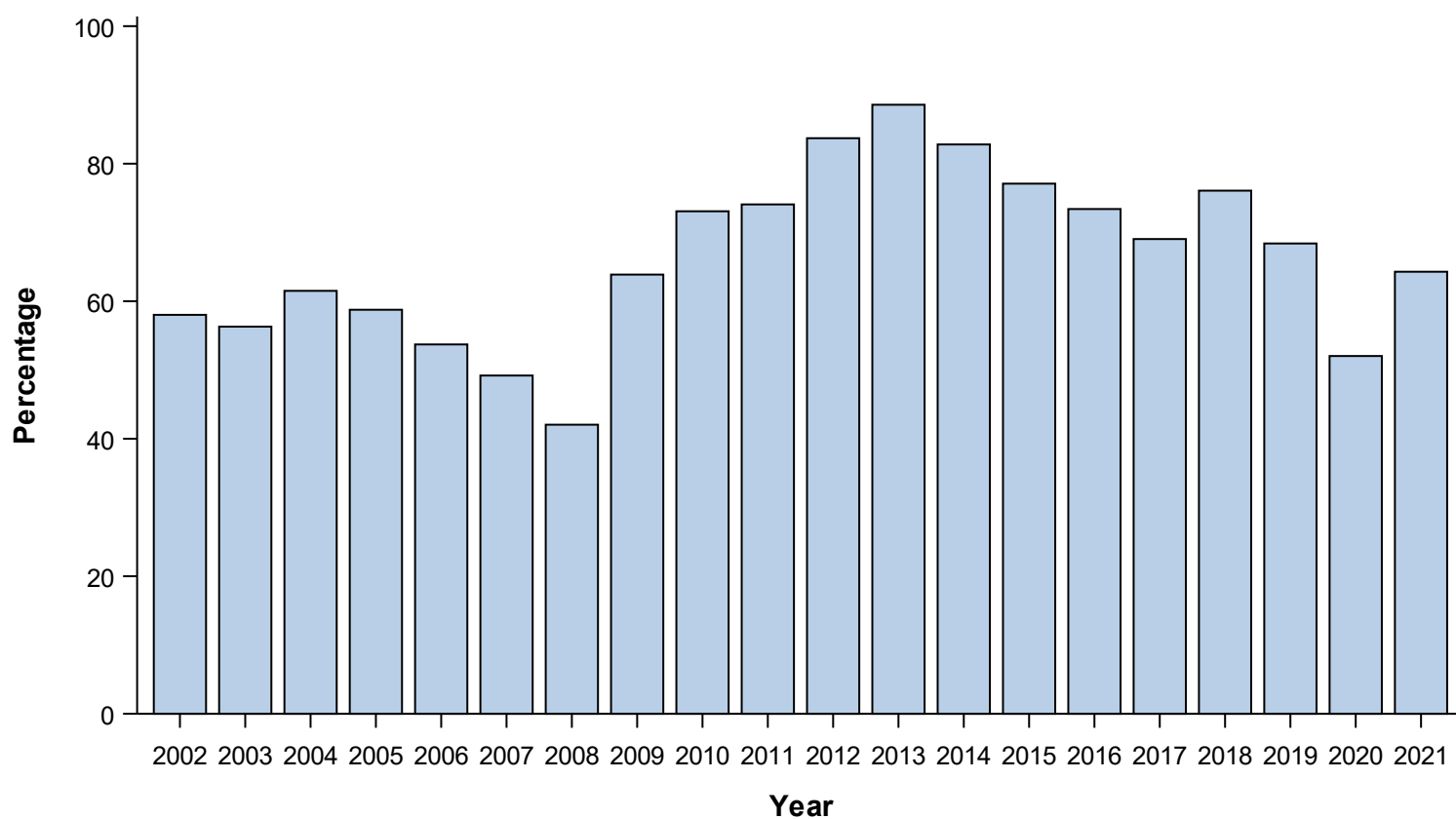
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
3 (1.7)	7 (4.0)	68 (38.6)	2 (1.1)	56 (31.8)	24 (13.6)	3 (1.7)	13 (7.4)	176

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Seattle, Washington, 2002-2021

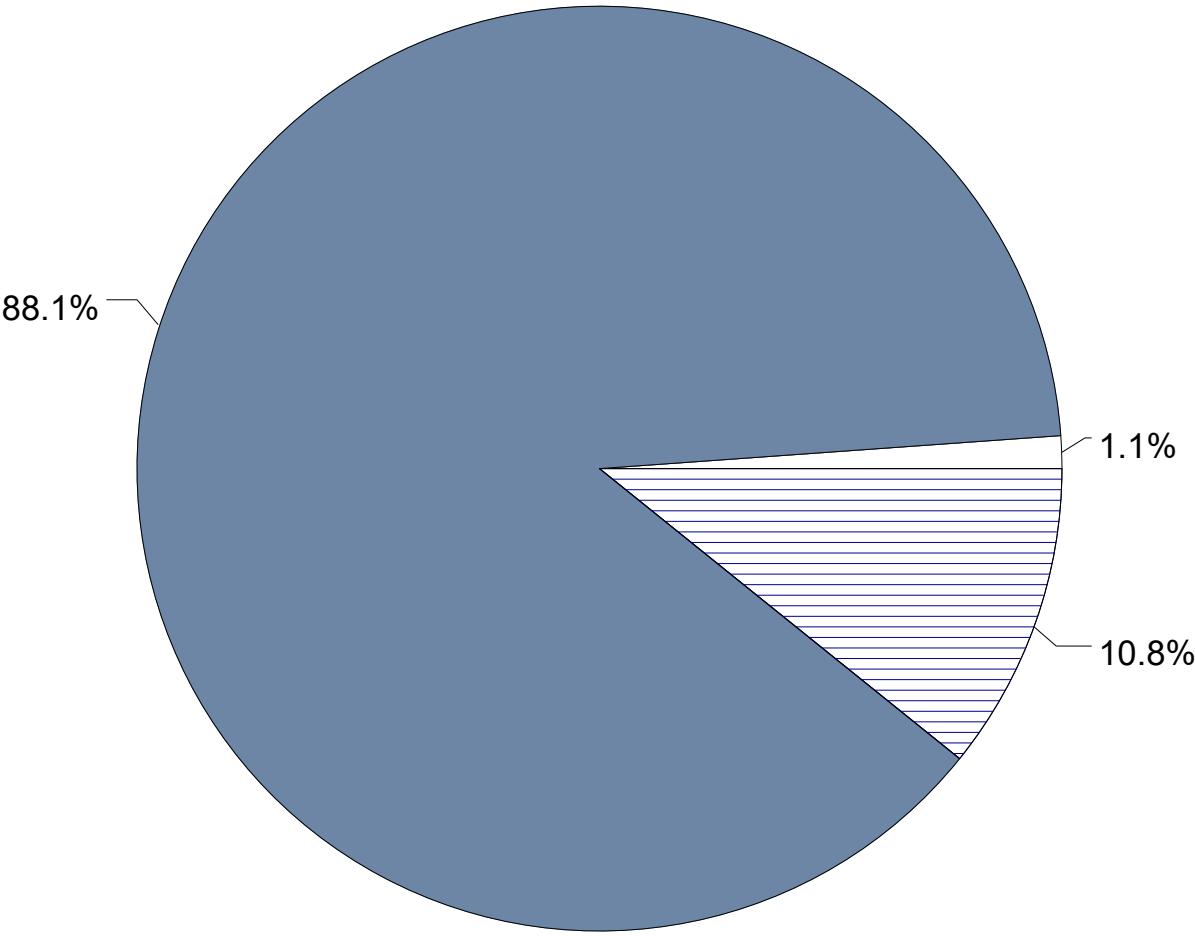


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
152 (58.0)	143 (56.3)	139 (61.5)	151 (58.8)	123 (53.7)	91 (49.2)	66 (42.0)	99 (63.9)	171 (73.1)	120 (74.1)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
113 (83.7)	124 (88.6)	154 (82.8)	138 (77.1)	138 (73.4)	165 (69.0)	159 (76.1)	145 (68.4)	77 (52.0)	90 (64.3)

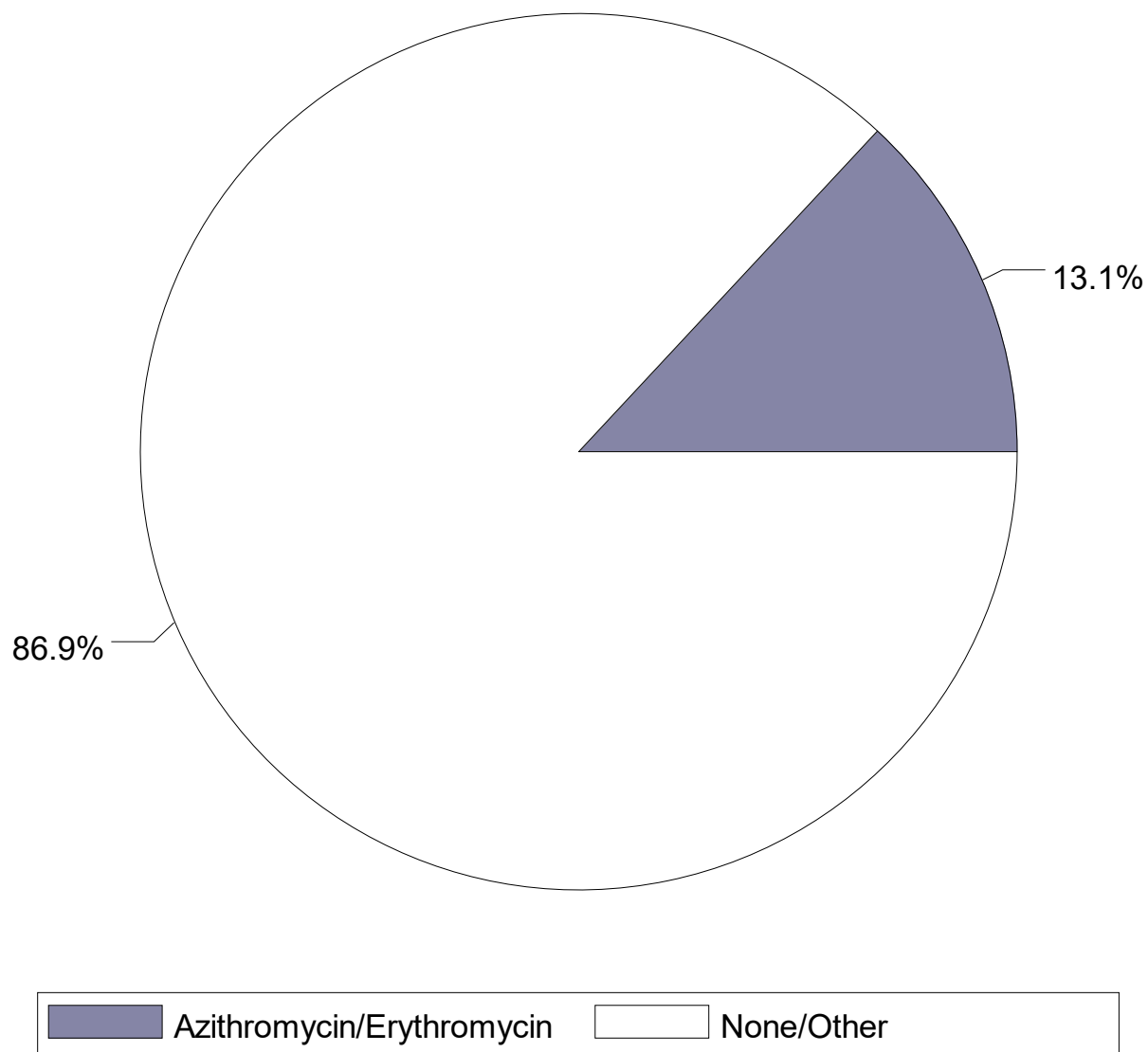
Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2021



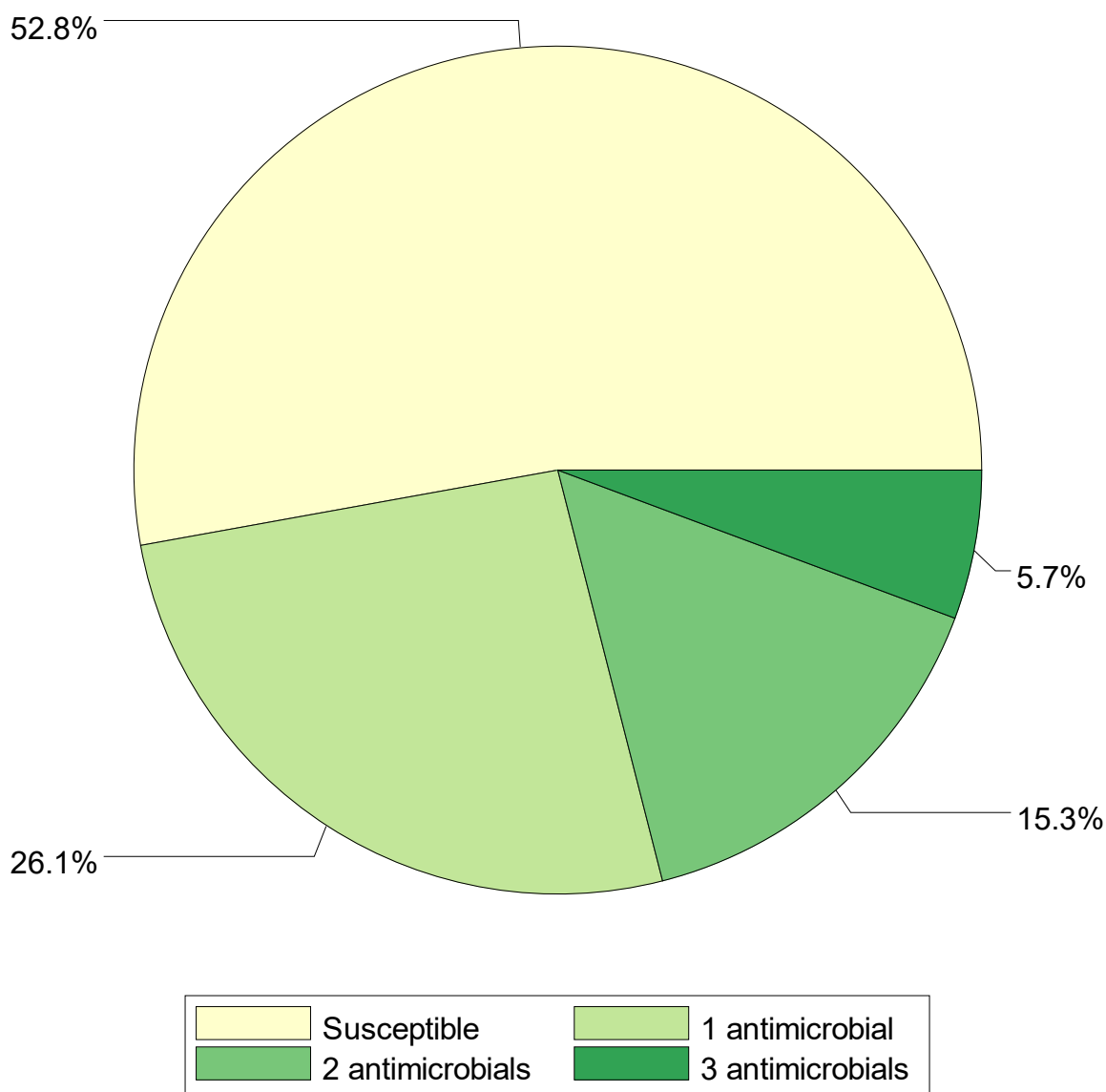
Primary Treatment	Count	Percentage
Gentamicin 240 mg	2	1.1
Ceftriaxone 500 mg	155	88.1
Other	19	10.8

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	23	13.1
None/Other	153	86.9

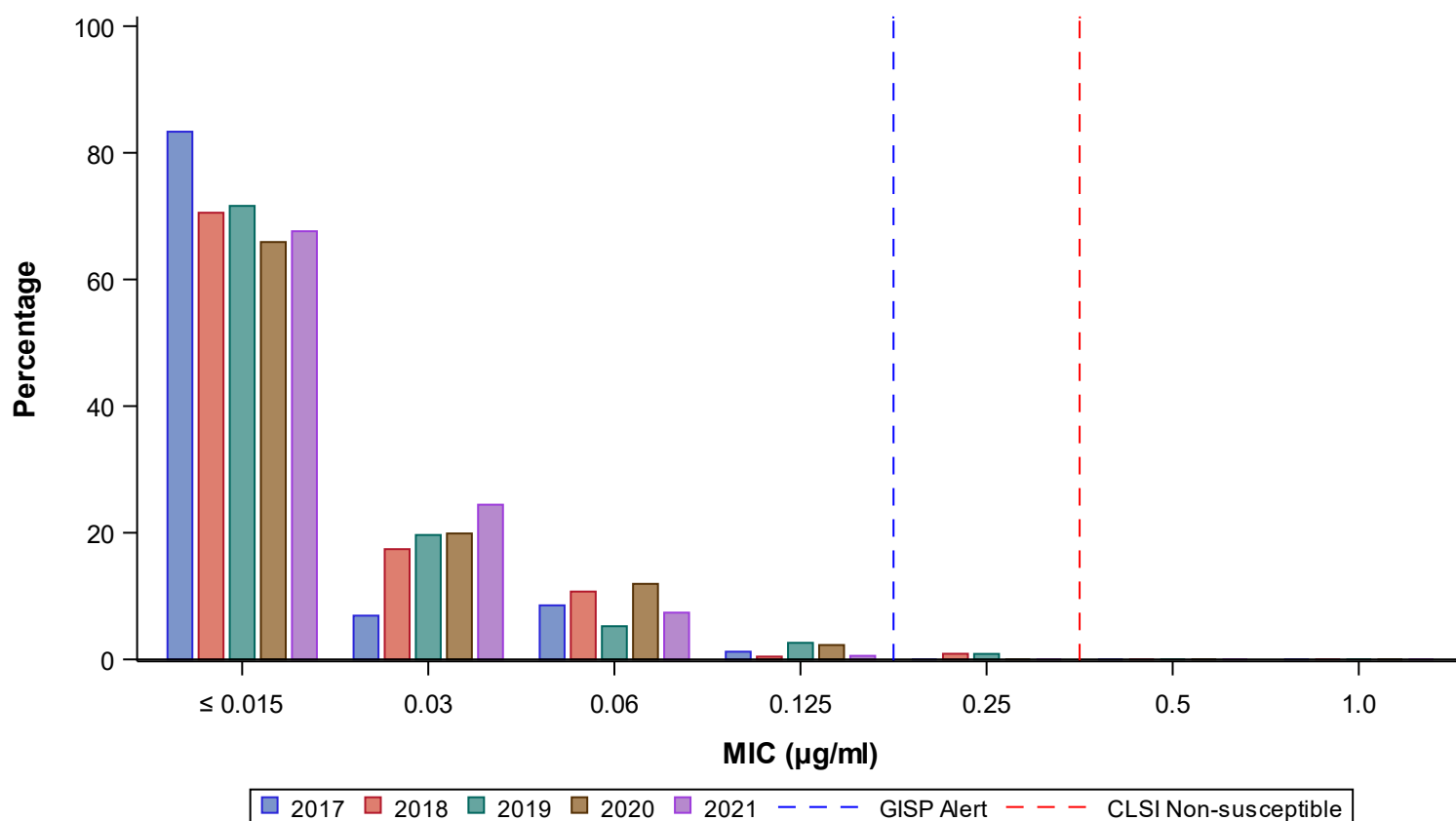
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	93	52.8
1 antimicrobial	46	26.1
2 antimicrobials	27	15.3
3 antimicrobials	10	5.7
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2017-2021



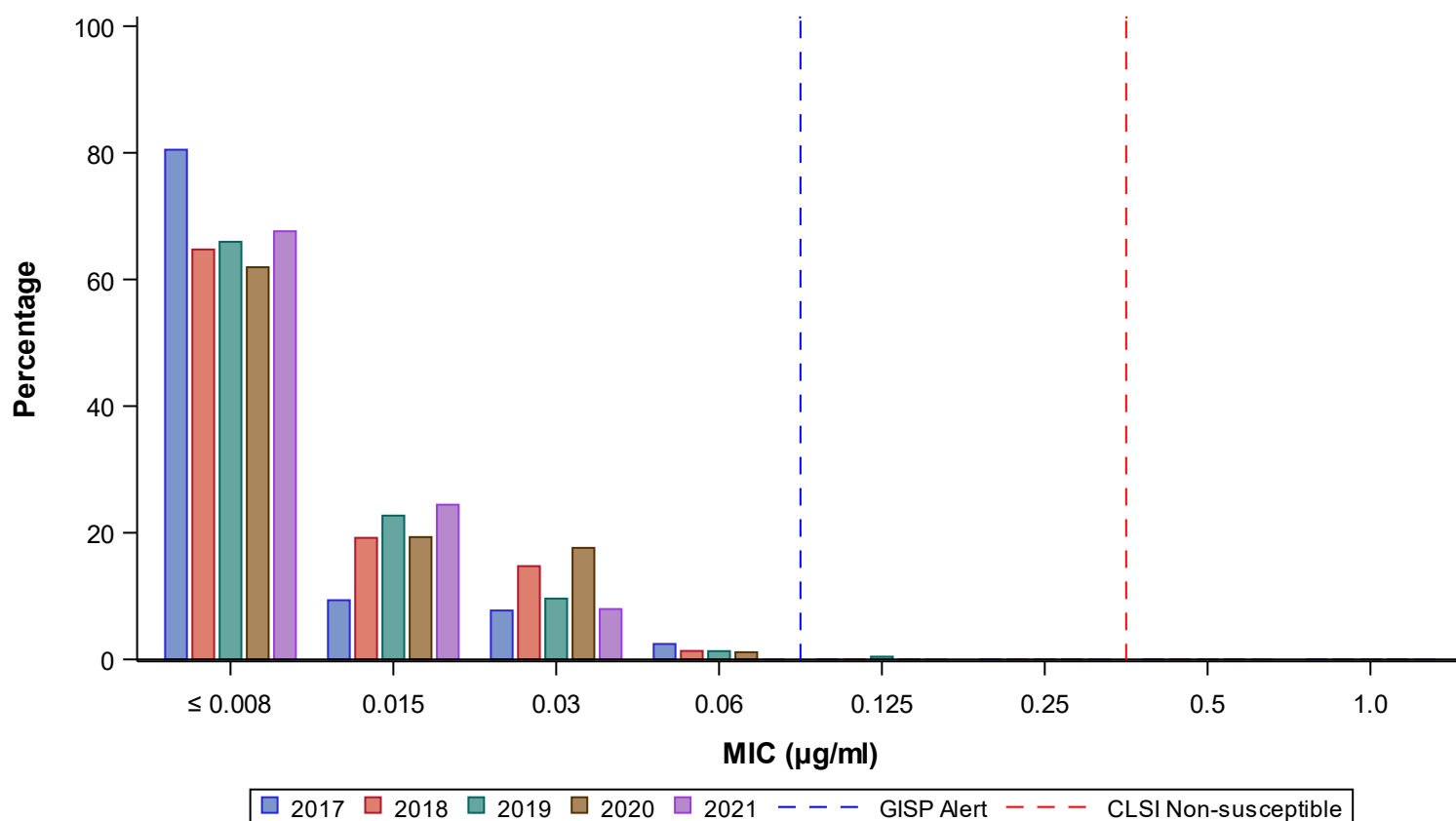
Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	205 (83.3)	17 (6.9)	21 (8.5)	3 (1.2)	0 (0.0)	0 (0.0)	0 (0.0)	246
2018	158 (70.5)	39 (17.4)	24 (10.7)	1 (0.4)	2 (0.9)	0 (0.0)	0 (0.0)	224
2019	164 (71.6)	45 (19.7)	12 (5.2)	6 (2.6)	2 (0.9)	0 (0.0)	0 (0.0)	229
2020	116 (65.9)	35 (19.9)	21 (11.9)	4 (2.3)	0 (0.0)	0 (0.0)	0 (0.0)	176
2021	119 (67.6)	43 (24.4)	13 (7.4)	1 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)	176

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint. As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	198 (80.5)	23 (9.3)	19 (7.7)	6 (2.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	246
2018	145 (64.7)	43 (19.2)	33 (14.7)	3 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	224
2019	151 (65.9)	52 (22.7)	22 (9.6)	3 (1.3)	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	229
2020	109 (61.9)	34 (19.3)	31 (17.6)	2 (1.1)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	176
2021	119 (67.6)	43 (24.4)	14 (8.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	176

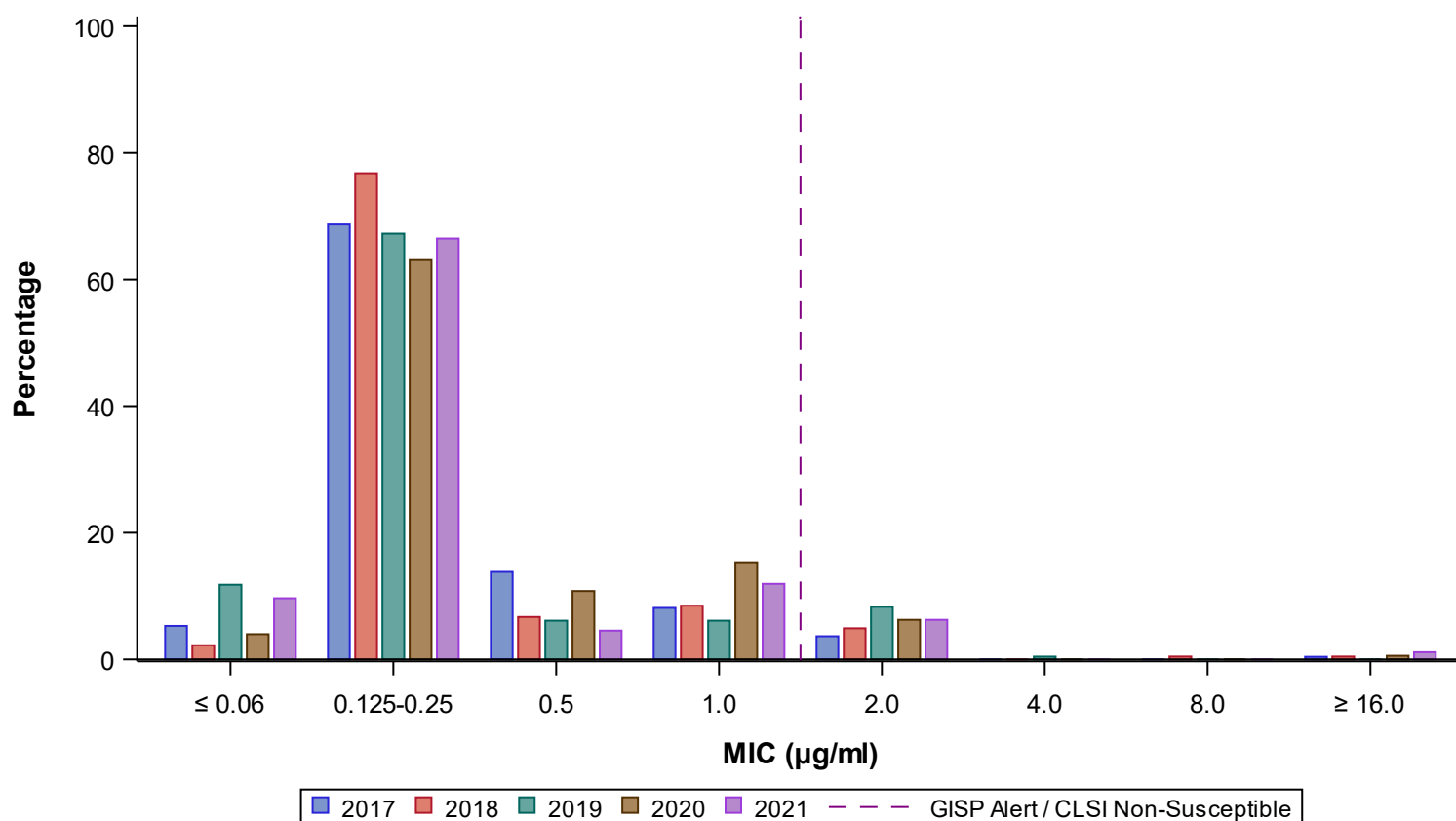
GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	13 (5.3)	169 (68.7)	34 (13.8)	20 (8.1)	9 (3.7)	0 (0.0)	0 (0.0)	1 (0.4)	246
2018	5 (2.2)	172 (76.8)	15 (6.7)	19 (8.5)	11 (4.9)	0 (0.0)	1 (0.4)	1 (0.4)	224
2019	27 (11.8)	154 (67.2)	14 (6.1)	14 (6.1)	19 (8.3)	1 (0.4)	0 (0.0)	0 (0.0)	229
2020	7 (4.0)	111 (63.1)	19 (10.8)	27 (15.3)	11 (6.3)	0 (0.0)	0 (0.0)	1 (0.6)	176
2021	17 (9.7)	117 (66.5)	8 (4.5)	21 (11.9)	11 (6.3)	0 (0.0)	0 (0.0)	2 (1.1)	176

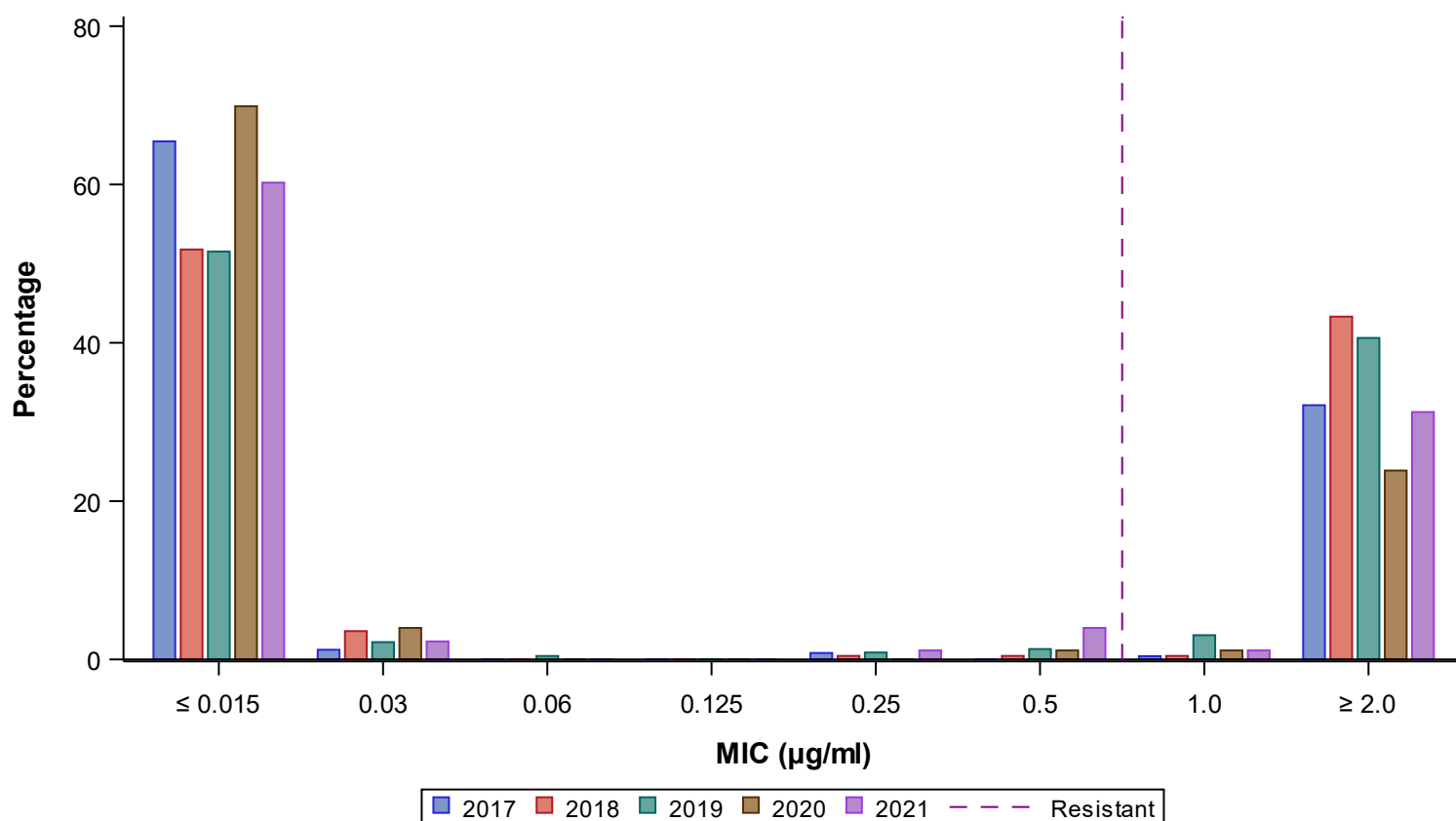
GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

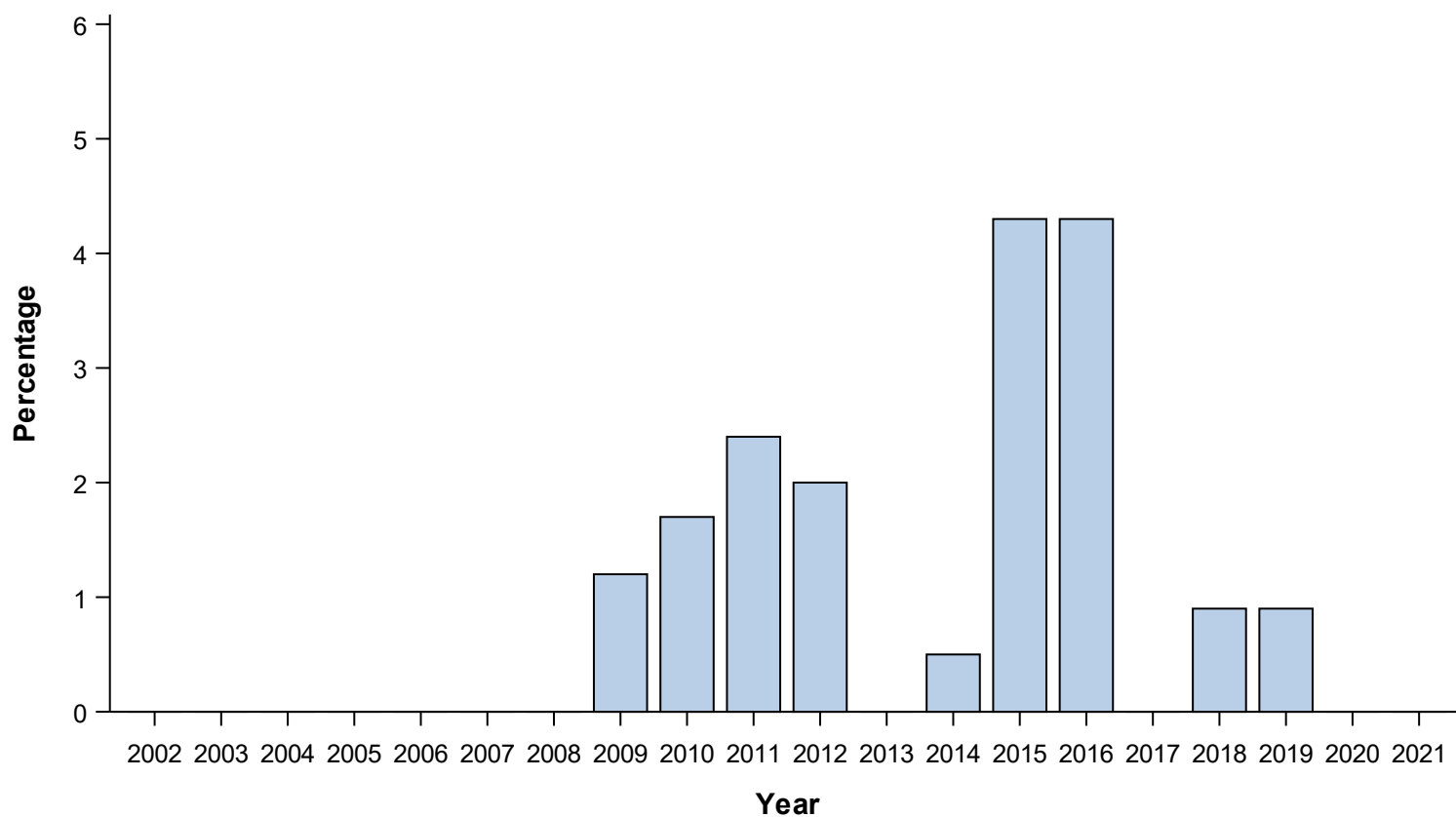
Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	161 (65.4)	3 (1.2)	0 (0.0)	0 (0.0)	2 (0.8)	0 (0.0)	1 (0.4)	79 (32.1)	246
2018	116 (51.8)	8 (3.6)	0 (0.0)	0 (0.0)	1 (0.4)	1 (0.4)	1 (0.4)	97 (43.3)	224
2019	118 (51.5)	5 (2.2)	1 (0.4)	0 (0.0)	2 (0.9)	3 (1.3)	7 (3.1)	93 (40.6)	229
2020	123 (69.9)	7 (4.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.1)	2 (1.1)	42 (23.9)	176
2021	106 (60.2)	4 (2.3)	0 (0.0)	0 (0.0)	2 (1.1)	7 (4.0)	2 (1.1)	55 (31.3)	176

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2002-2021

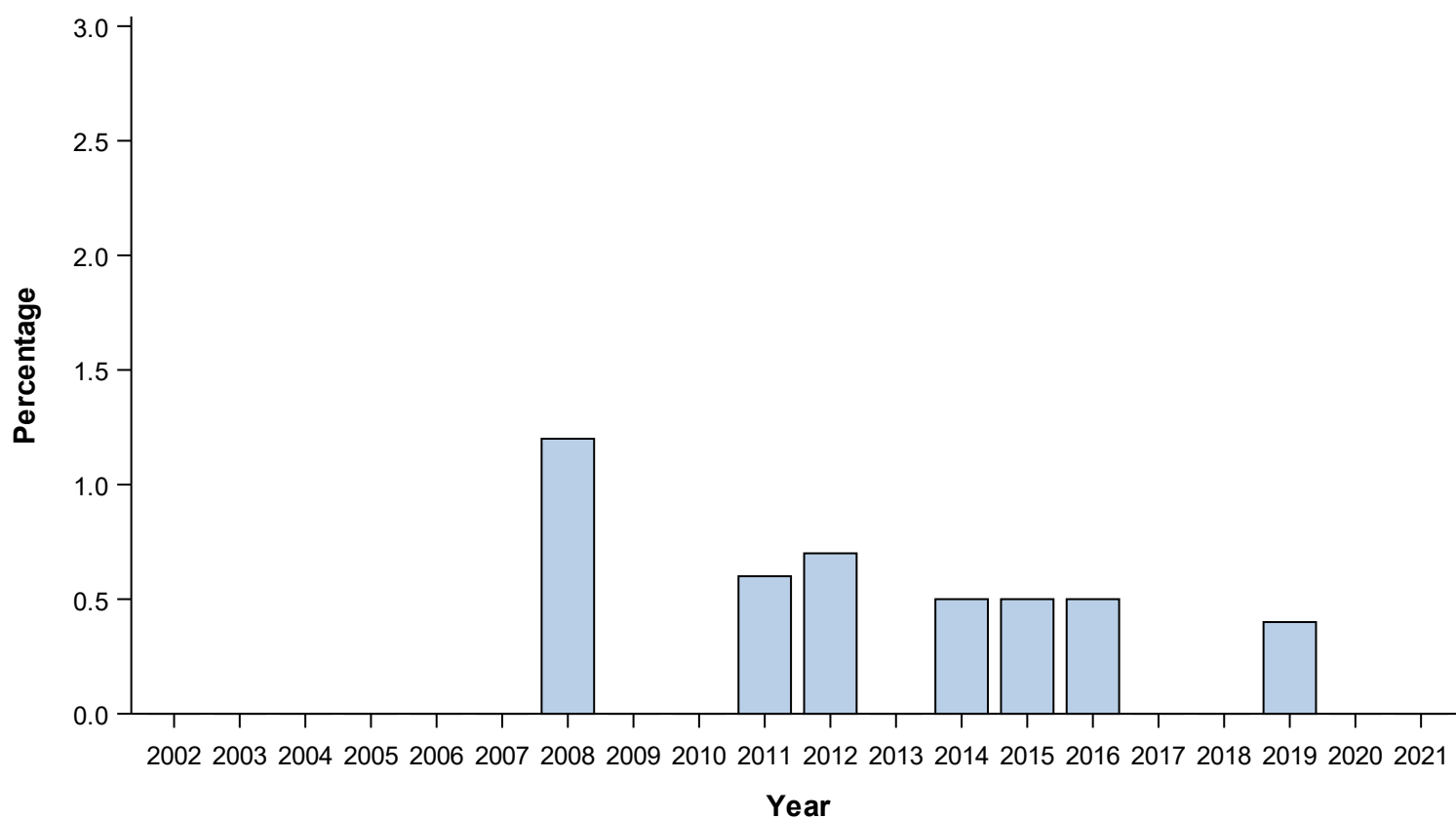


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.2)	4 (1.7)	4 (2.4)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
3 (2.0)	0 (0.0)	1 (0.5)	8 (4.3)	8 (4.3)	0 (0.0)	2 (0.9)	2 (0.9)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2002-2021

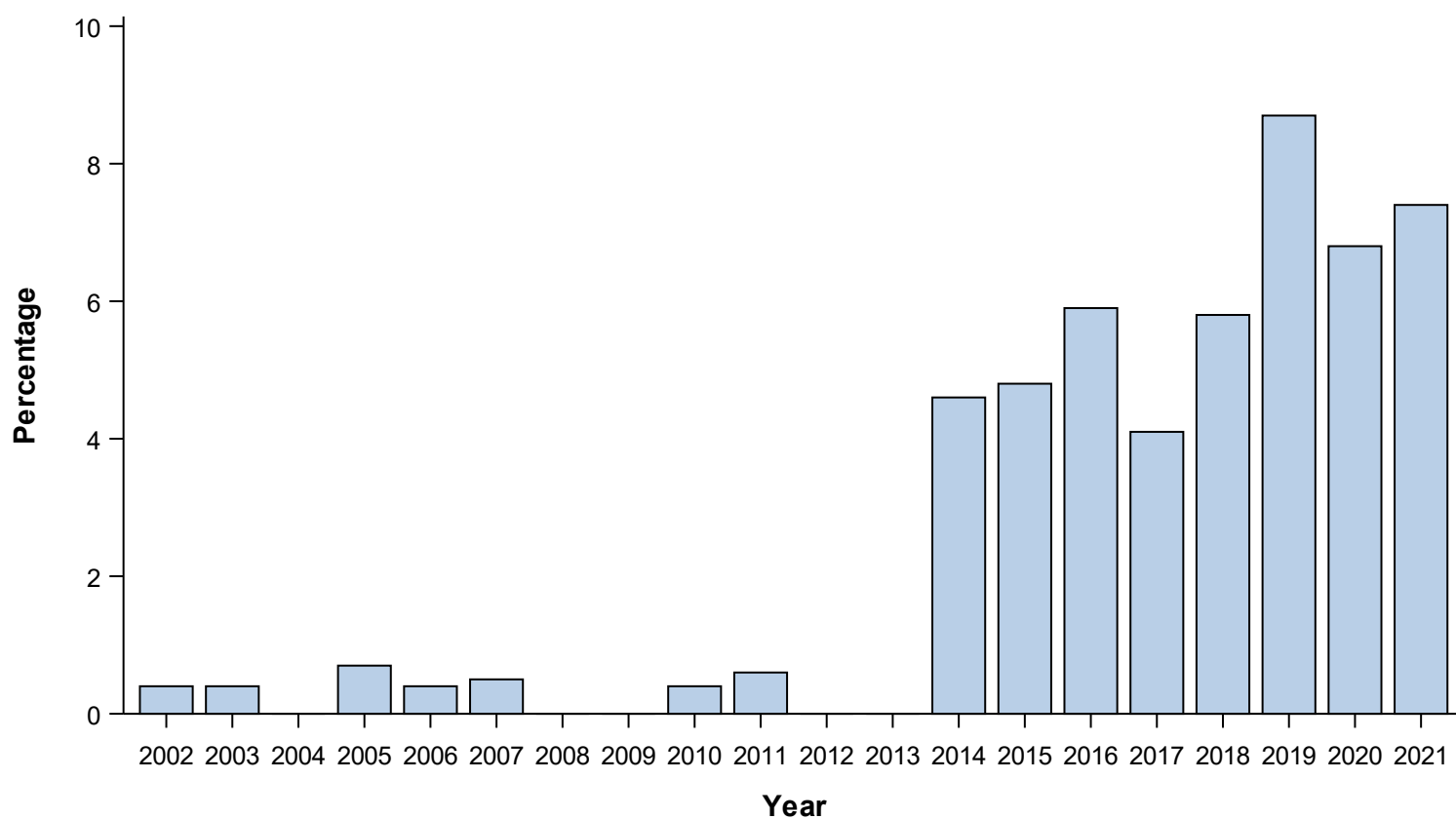


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.2)	0 (0.0)	0 (0.0)	1 (0.6)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
1 (0.7)	0 (0.0)	1 (0.5)	1 (0.5)	1 (0.5)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Seattle, Washington, 2002-2021

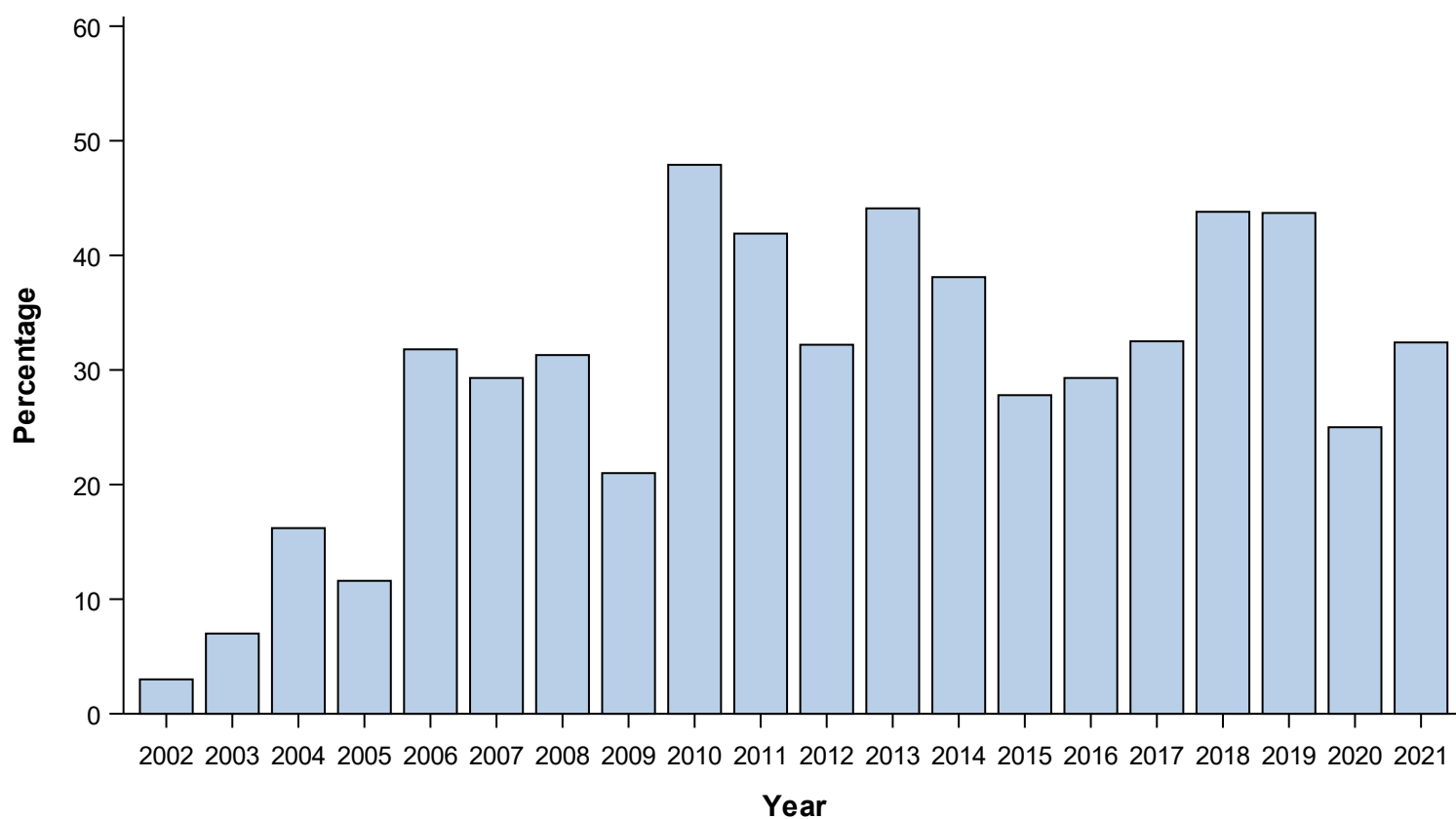


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
1 (0.4)	1 (0.4)	0 (0.0)	2 (0.7)	1 (0.4)	1 (0.5)	0 (0.0)	0 (0.0)	1 (0.4)	1 (0.6)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	9 (4.6)	9 (4.8)	11 (5.9)	10 (4.1)	13 (5.8)	20 (8.7)	12 (6.8)	13 (7.4)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Seattle, Washington, 2002-2021

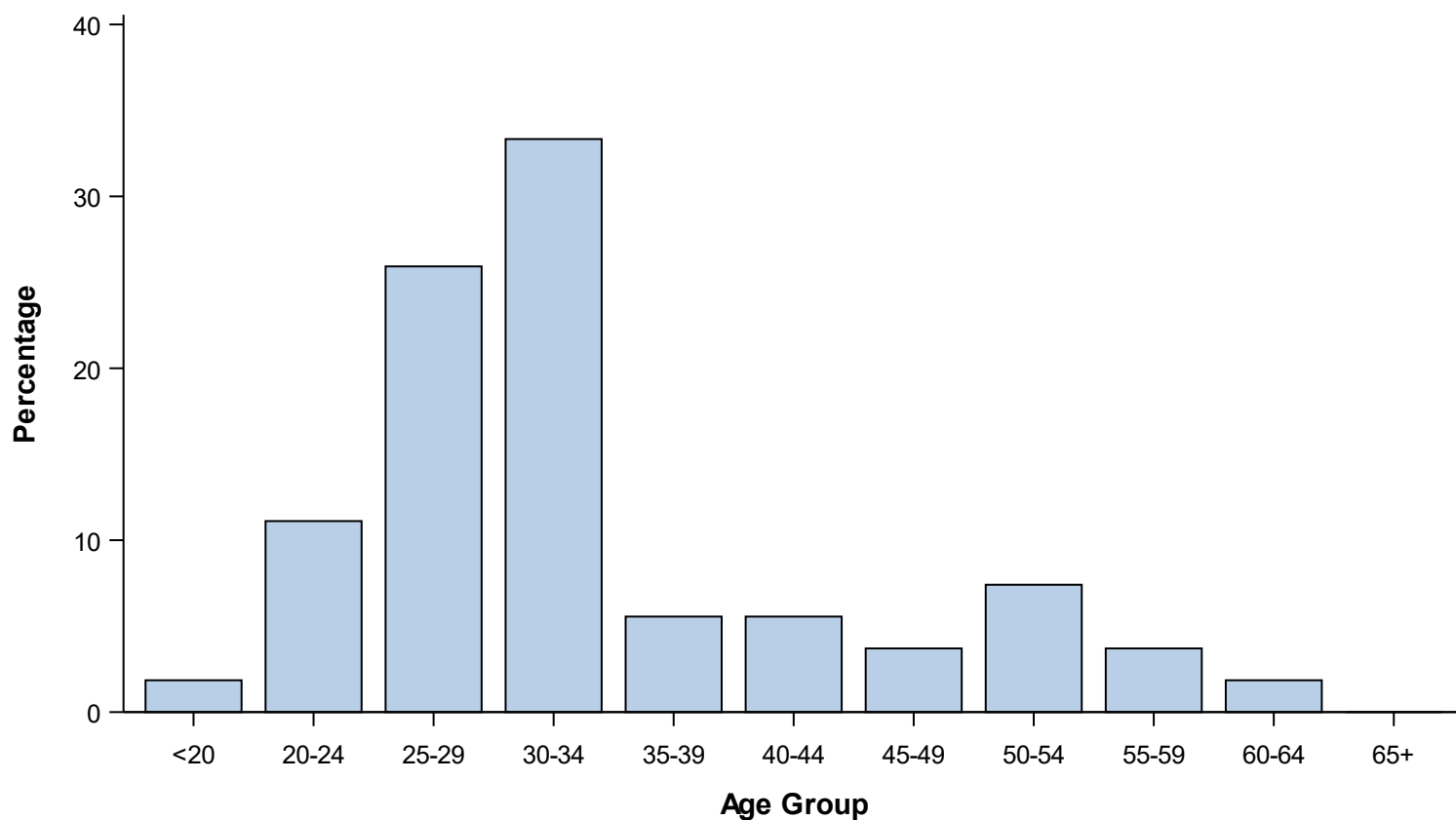


2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
8 (3.0)	18 (7.0)	38 (16.2)	31 (11.6)	77 (31.8)	55 (29.3)	51 (31.3)	34 (21.0)	114 (47.9)	70 (41.9)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
48 (32.2)	63 (44.1)	74 (38.1)	52 (27.8)	55 (29.3)	80 (32.5)	98 (43.8)	100 (43.7)	44 (25.0)	57 (32.4)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

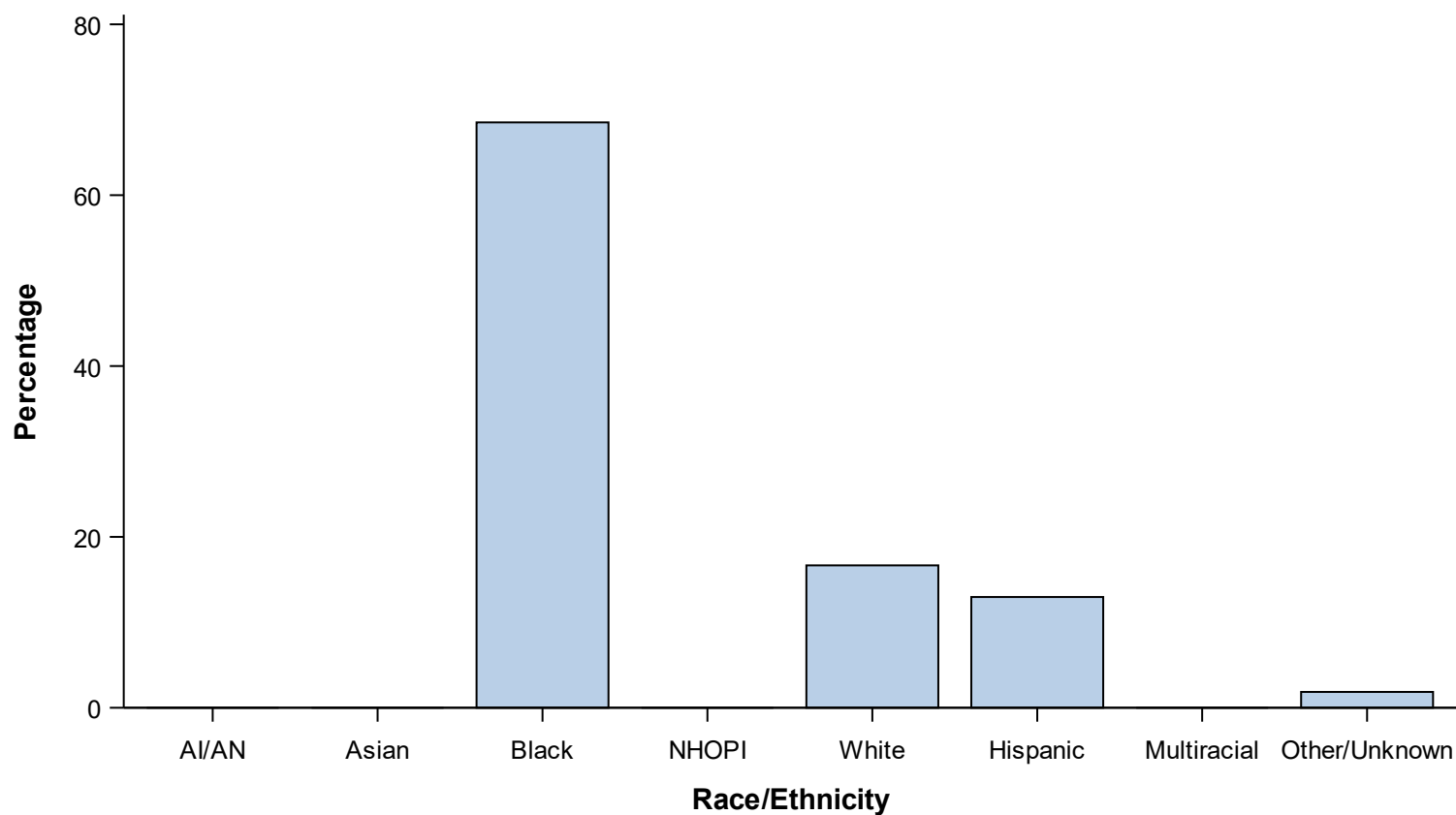
Figure A. Percentage of Participants by Age Group, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2021



<20 n (%)	20-24 n (%)	25-29 n (%)	30-34 n (%)	35-39 n (%)	40-44 n (%)	45-49 n (%)	50-54 n (%)	55-59 n (%)	60-64 n (%)	65+ n (%)	Total
1 (1.9)	6 (11.1)	14 (25.9)	18 (33.3)	3 (5.6)	3 (5.6)	2 (3.7)	4 (7.4)	2 (3.7)	1 (1.9)	0 (0.0)	54

Note: Cases with unknown age were excluded.

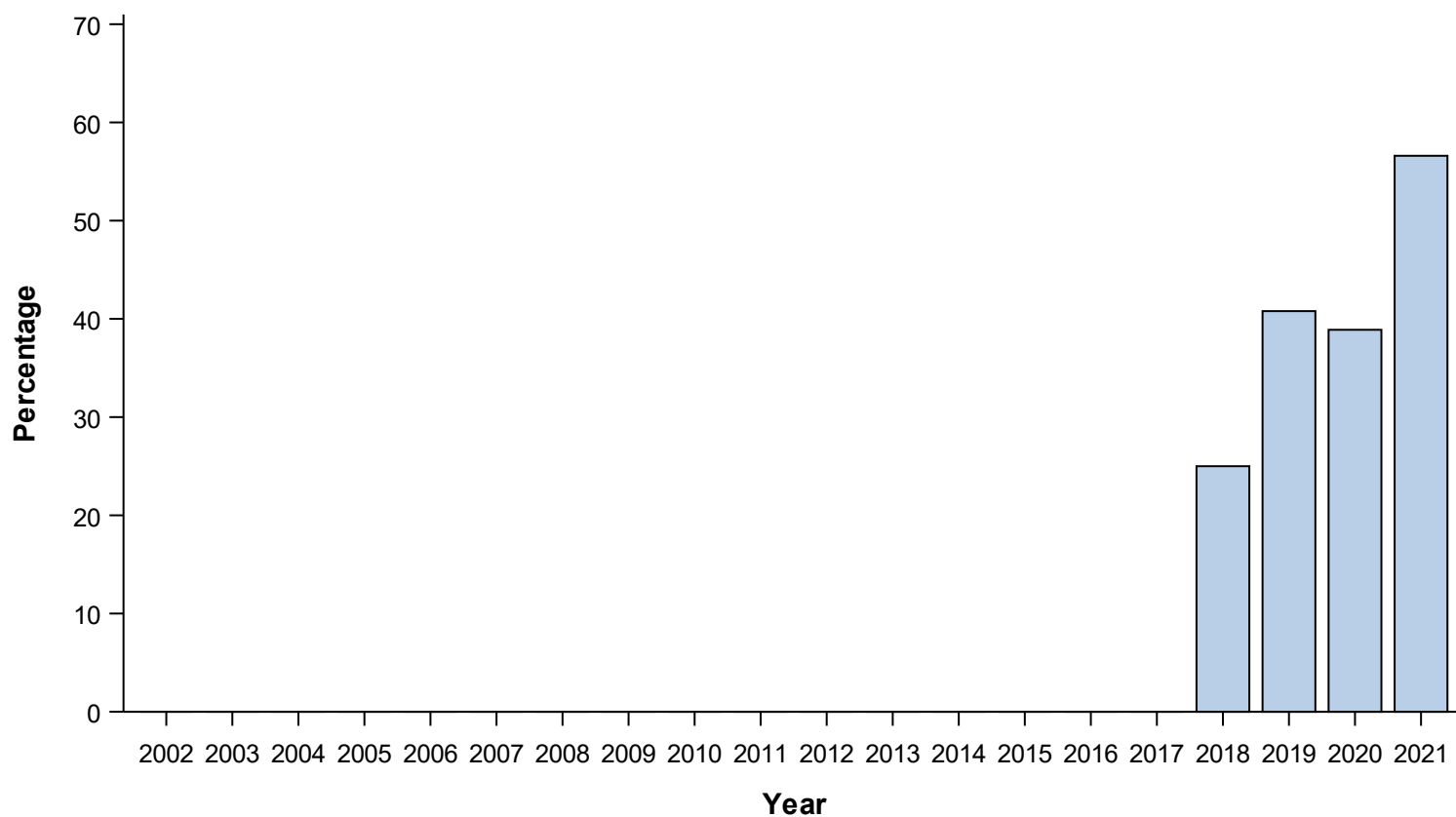
Figure B. Percentage of Participants by Race/Ethnicity, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2021



AI/AN n (%)	Asian n (%)	Black n (%)	NHOPI n (%)	White n (%)	Hispanic n (%)	Multiracial n (%)	Other/Unknown n (%)	Total
0 (0.0)	0 (0.0)	37 (68.5)	0 (0.0)	9 (16.7)	7 (13.0)	0 (0.0)	1 (1.9)	54

Note: Cases are reported using Office of Management and Budget (OMB) compliant race and ethnicity categories. AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Figure C. Percentage of Participants Identifying as Men who Have Sex with Men,
Gonococcal Isolate Surveillance Project (GISP),
Washington, DC, 2002-2021



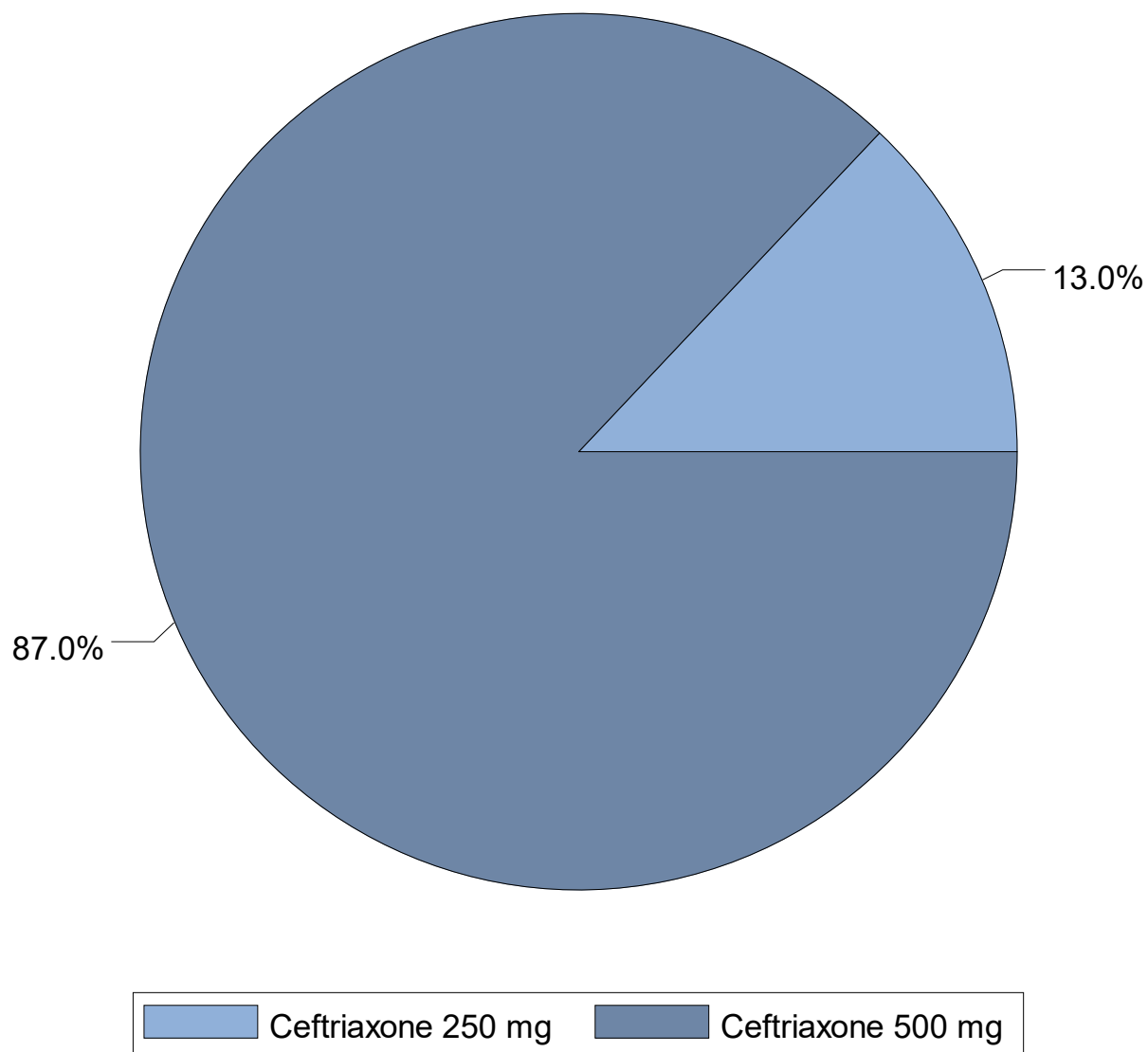
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (25.0)	31 (40.8)	21 (38.9)	30 (56.6)

Note: Men who have sex with men = men who self-identified as gay or bisexual or reported recent male sex partners.

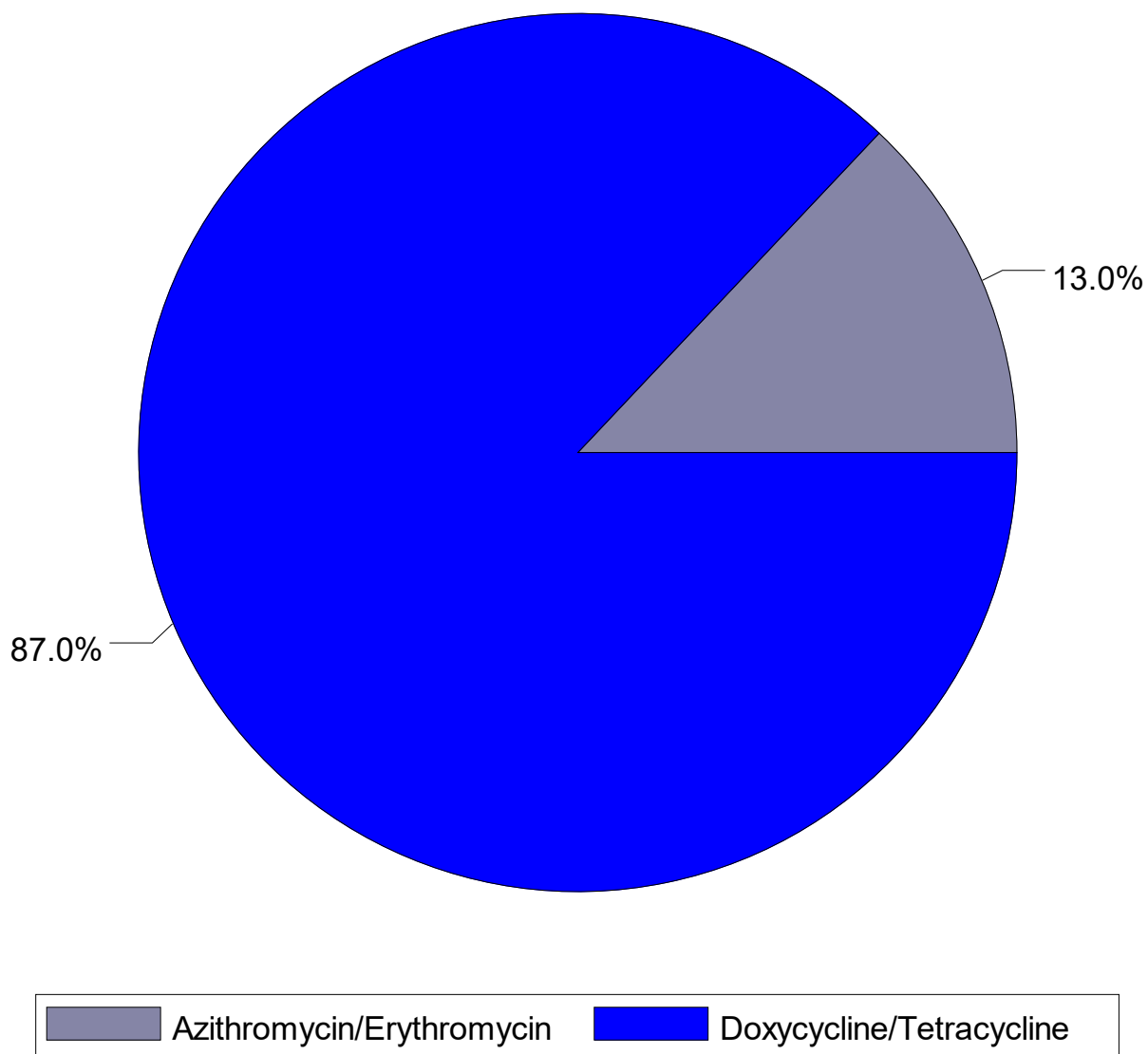
Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure D. Primary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2021



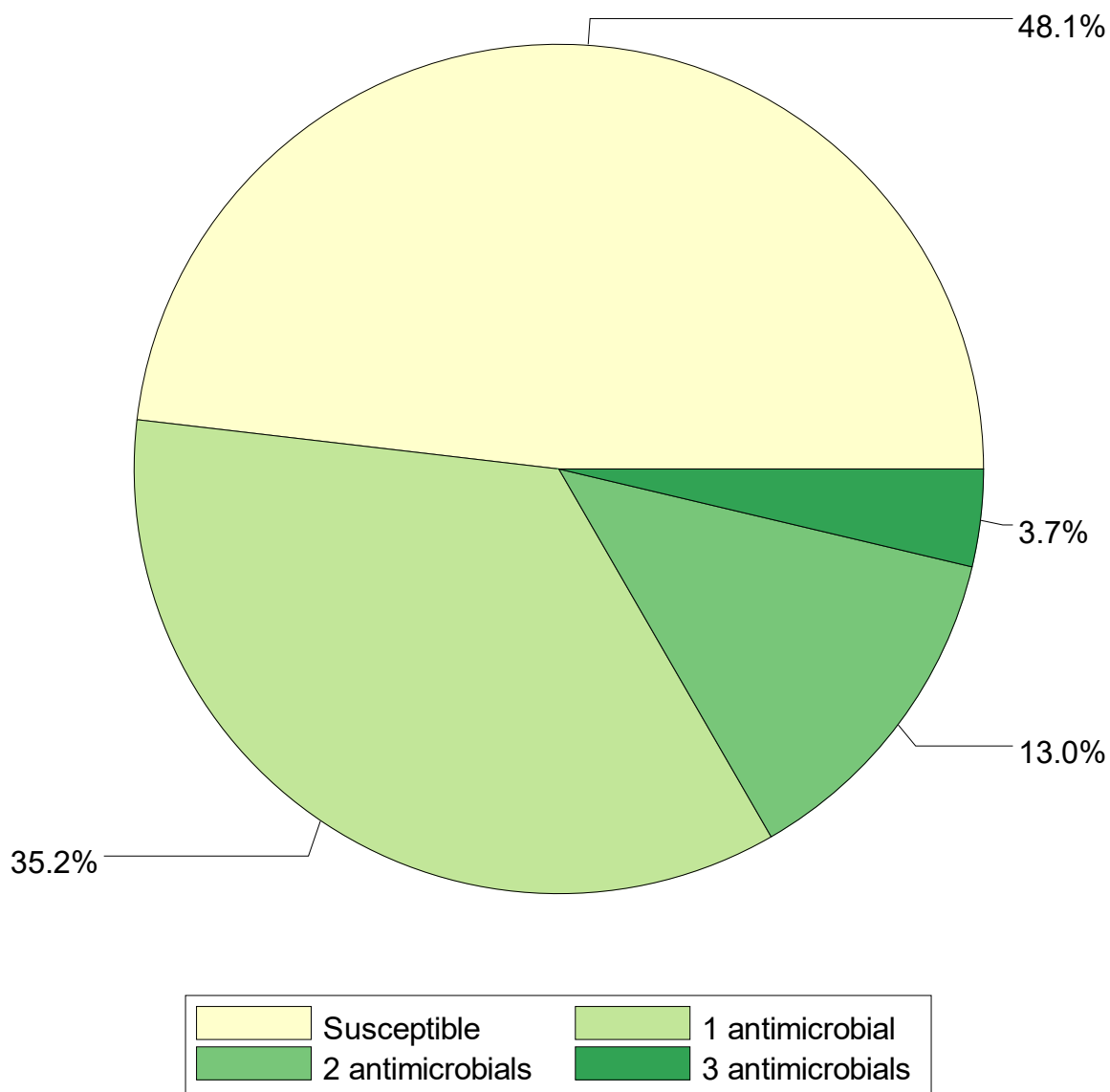
Primary Treatment	Count	Percentage
Ceftriaxone 250 mg	7	13.0
Ceftriaxone 500 mg	47	87.0

Figure E. Secondary Antimicrobial Drug Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2021



Secondary Treatment	Count	Percentage
Azithromycin/Erythromycin	7	13.0
Doxycycline/Tetracycline	47	87.0

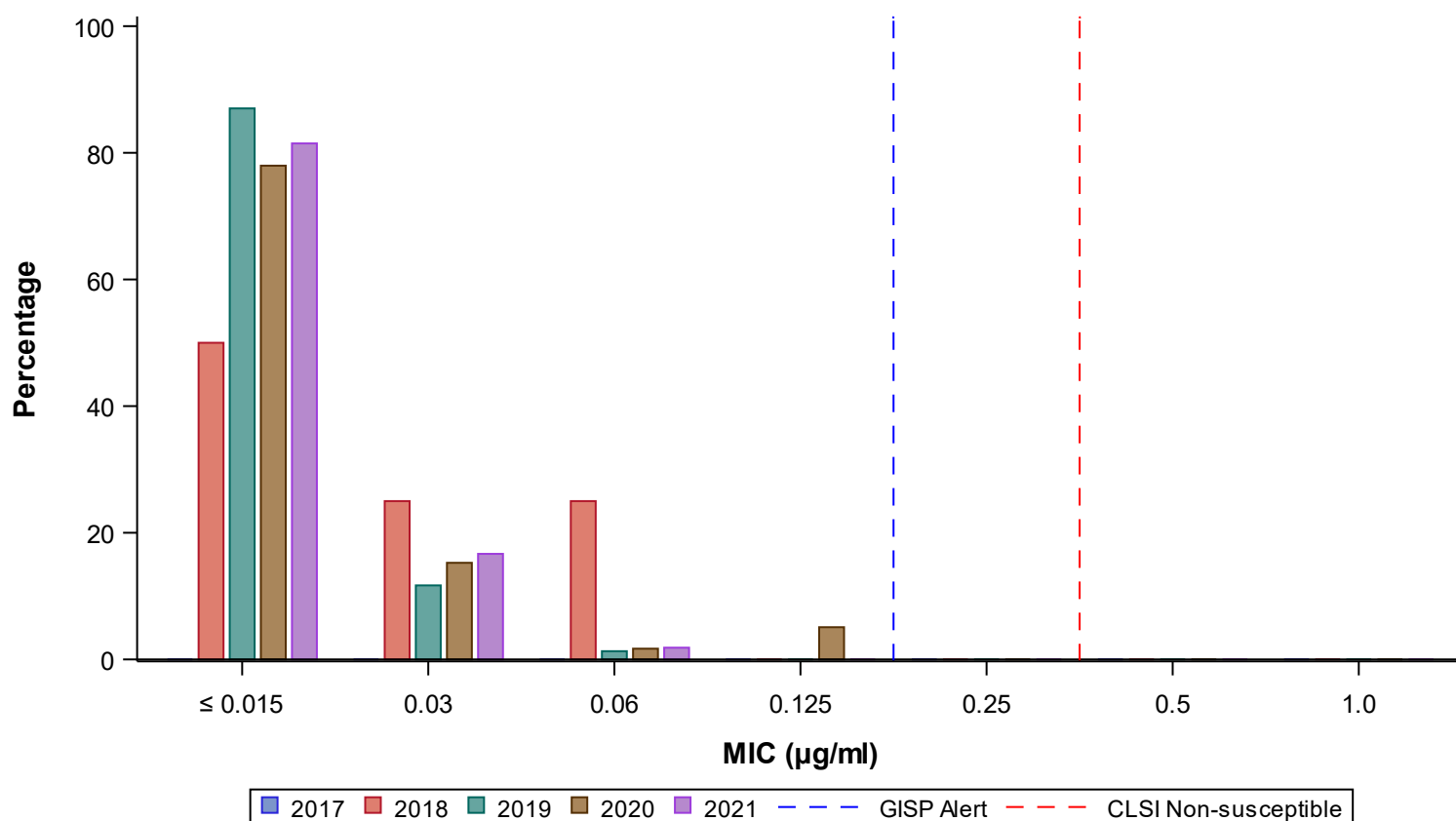
Figure F: Resistance or Elevated Minimum Inhibitory Concentration (MIC) Patterns Among *Neisseria gonorrhoeae* Isolates by Number of Antimicrobials, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2021



Number of Antimicrobials	Count	Percentage
Susceptible	26	48.1
1 antimicrobial	19	35.2
2 antimicrobials	7	13.0
3 antimicrobials	2	3.7
4+ antimicrobials	0	0.0

Note: Elevated MICs = Ceftriaxone: MIC ≥ 0.125 $\mu\text{g/mL}$; Cefixime: MIC ≥ 0.25 $\mu\text{g/mL}$; Azithromycin: MIC ≥ 2.0 $\mu\text{g/mL}$; Resistance = Tetracycline: MIC ≥ 2.0 $\mu\text{g/mL}$; Ciprofloxacin: MIC ≥ 1.0 $\mu\text{g/mL}$; Penicillin: MIC ≥ 2.0 $\mu\text{g/mL}$ or Beta-lactamase positive.

Figure G. Distribution of Cefixime Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2017-2021



Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	2 (50.0)	1 (25.0)	1 (25.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4
2019	67 (87.0)	9 (11.7)	1 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	77
2020	46 (78.0)	9 (15.3)	1 (1.7)	3 (5.1)	0 (0.0)	0 (0.0)	0 (0.0)	59
2021	44 (81.5)	9 (16.7)	1 (1.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	54

GISP Alert Value = Cefixime MIC ≥ 0.25 µg/mL; CLSI Non-susceptible = Cefixime: MIC ≥ 0.5 µg/mL.

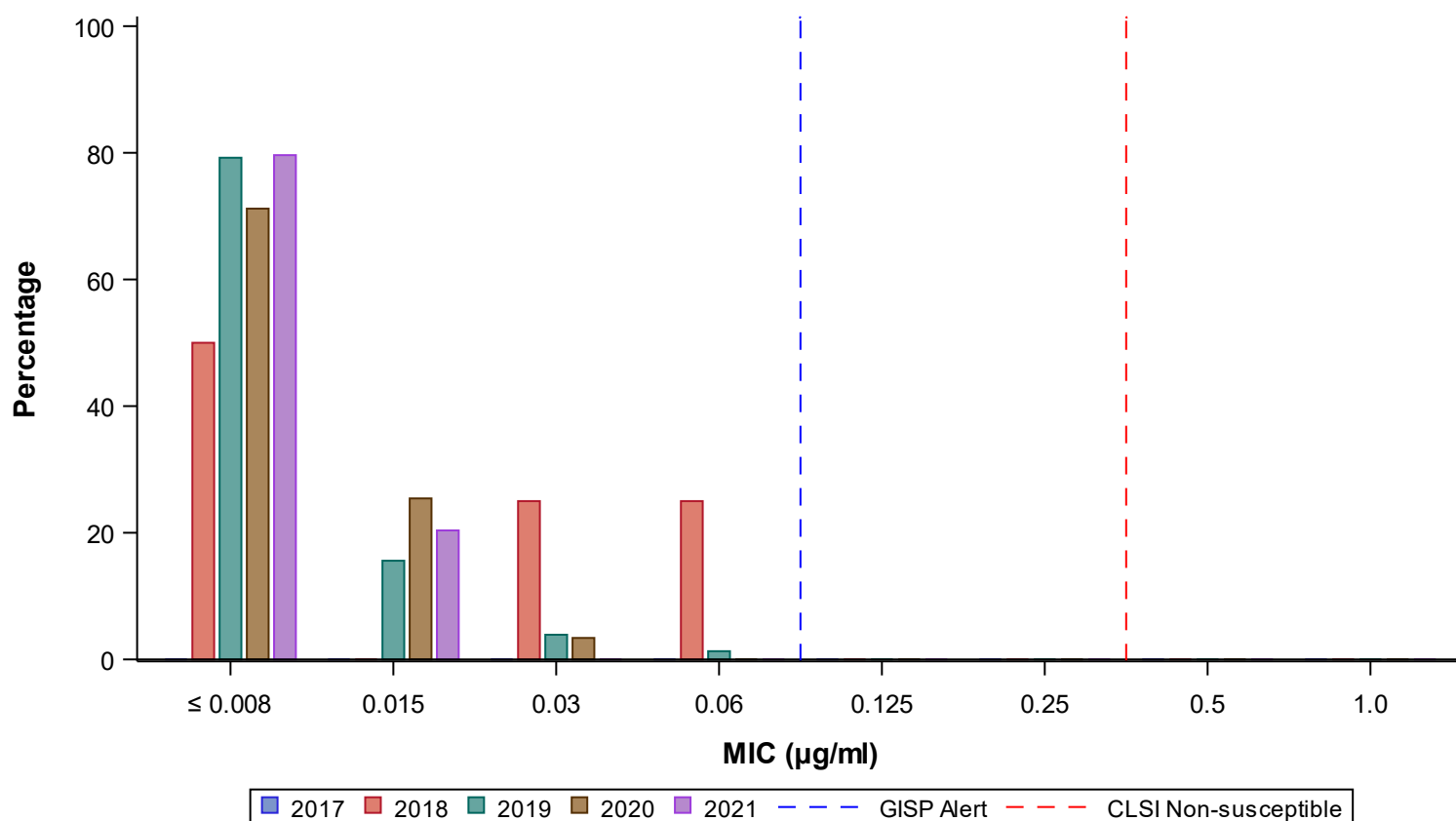
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a cefixime resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure H. Distribution of Ceftriaxone Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2017-2021



Year	≤ 0.008 n (%)	0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	2 (50.0)	0 (0.0)	1 (25.0)	1 (25.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4
2019	61 (79.2)	12 (15.6)	3 (3.9)	1 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	77
2020	42 (71.2)	15 (25.4)	2 (3.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	59
2021	43 (79.6)	11 (20.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	54

GISP Alert Value = Ceftriaxone MIC ≥ 0.125 µg/mL; CLSI Non-susceptible = Ceftriaxone: MIC ≥ 0.5 µg/mL.

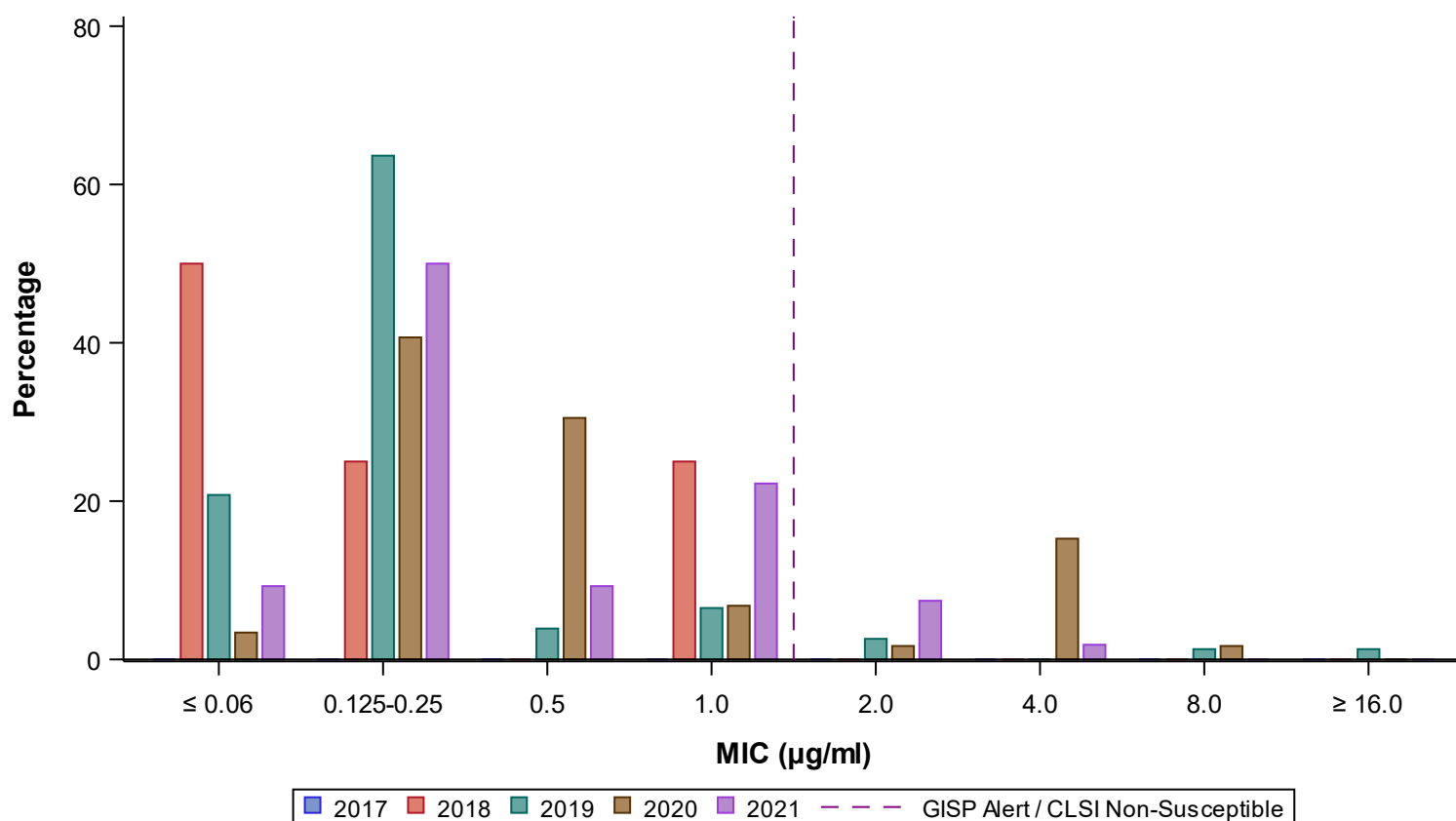
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established a ceftriaxone resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure I. Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2017-2021



Year	≤ 0.06 n (%)	0.125-0.25 n (%)	0.5 n (%)	1.0 n (%)	2.0 n (%)	4.0 n (%)	8.0 n (%)	≥ 16.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	2 (50.0)	1 (25.0)	0 (0.0)	1 (25.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4
2019	16 (20.8)	49 (63.6)	3 (3.9)	5 (6.5)	2 (2.6)	0 (0.0)	1 (1.3)	1 (1.3)	77
2020	2 (3.4)	24 (40.7)	18 (30.5)	4 (6.8)	1 (1.7)	9 (15.3)	1 (1.7)	0 (0.0)	59
2021	5 (9.3)	27 (50.0)	5 (9.3)	12 (22.2)	4 (7.4)	1 (1.9)	0 (0.0)	0 (0.0)	54

GISP Alert Value: Azithromycin MIC ≥ 2.0 µg/mL; CLSI Non-susceptible = Azithromycin: MIC ≥ 2.0 µg/mL.

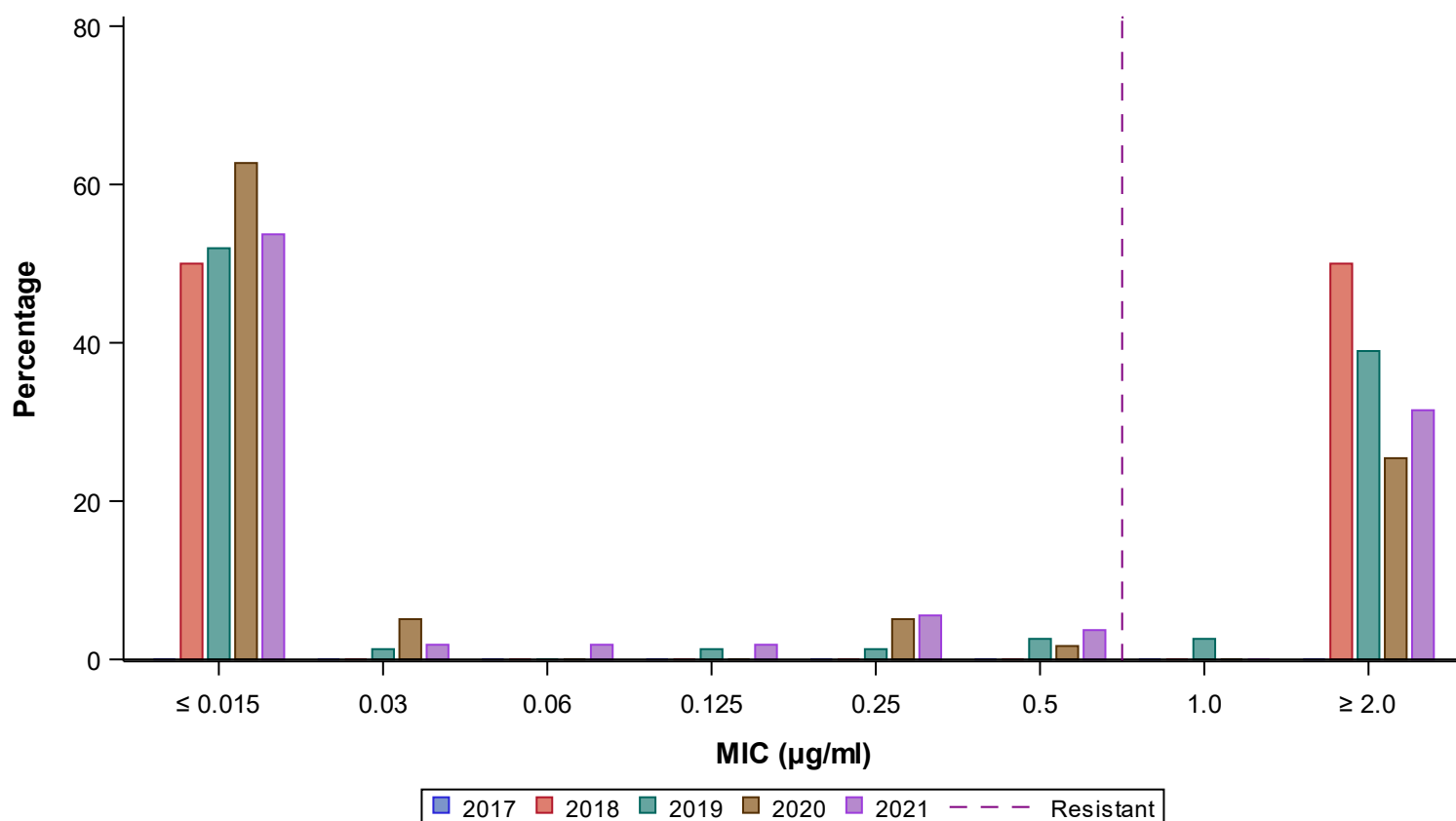
CLSI = Clinical and Laboratory Standards Institute.

Non-susceptible = Category used for isolates when only a susceptible breakpoint has been designated and the MIC is above the susceptible breakpoint.

As of the end of 2021, the CLSI has not established an azithromycin resistance breakpoint for *N. gonorrhoeae*.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure J. Distribution of Ciprofloxacin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2017-2021

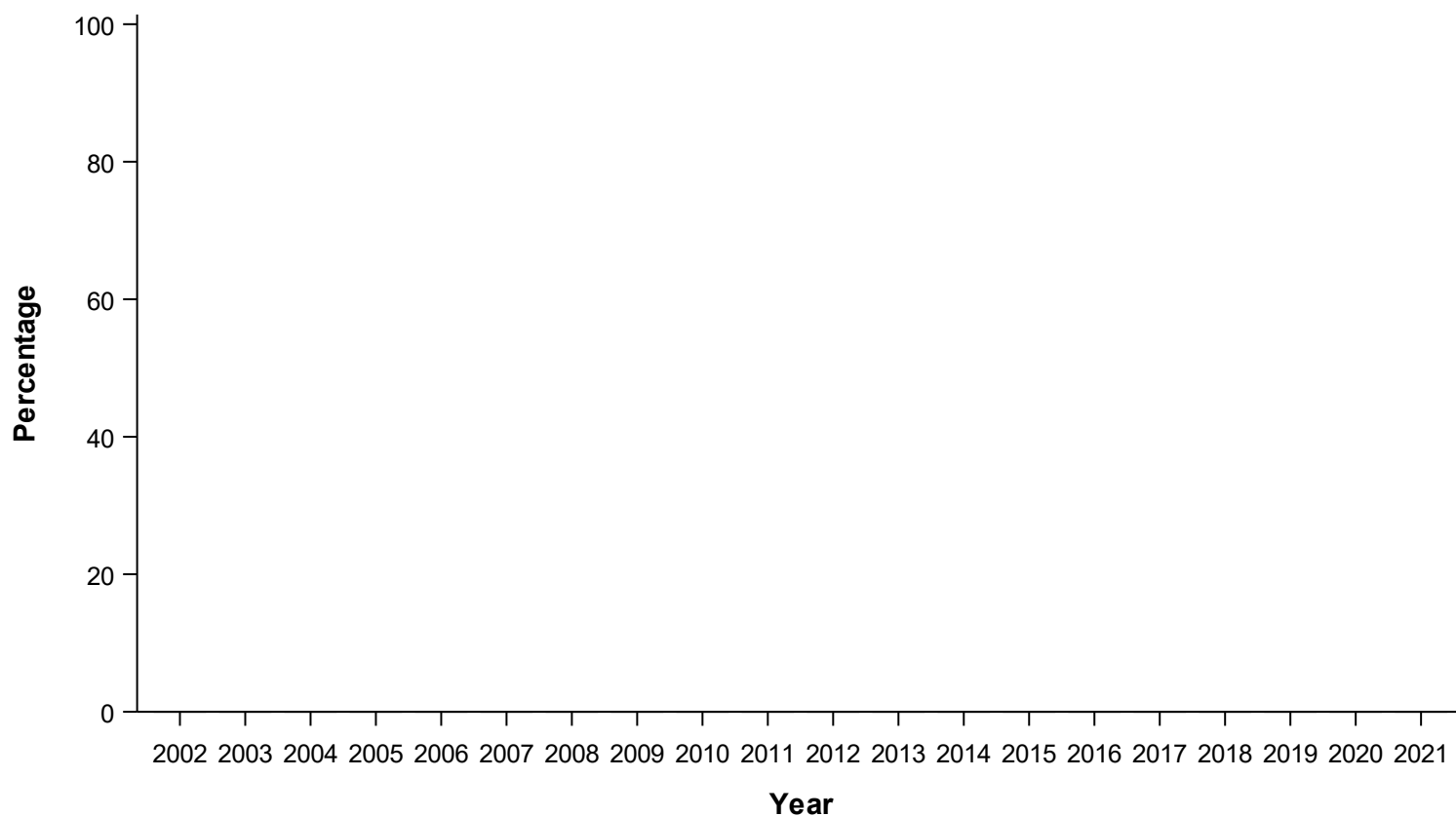


Year	≤ 0.015 n (%)	0.03 n (%)	0.06 n (%)	0.125 n (%)	0.25 n (%)	0.5 n (%)	1.0 n (%)	≥ 2.0 n (%)	Total
2017	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0
2018	2 (50.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (50.0)	4
2019	40 (51.9)	1 (1.3)	0 (0.0)	1 (1.3)	1 (1.3)	2 (2.6)	2 (2.6)	30 (39.0)	77
2020	37 (62.7)	3 (5.1)	0 (0.0)	0 (0.0)	3 (5.1)	1 (1.7)	0 (0.0)	15 (25.4)	59
2021	29 (53.7)	1 (1.9)	1 (1.9)	1 (1.9)	3 (5.6)	2 (3.7)	0 (0.0)	17 (31.5)	54

Ciprofloxacin resistance MIC ≥ 1.0 µg/mL.

Note: Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure K. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Cefixime, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2002-2021



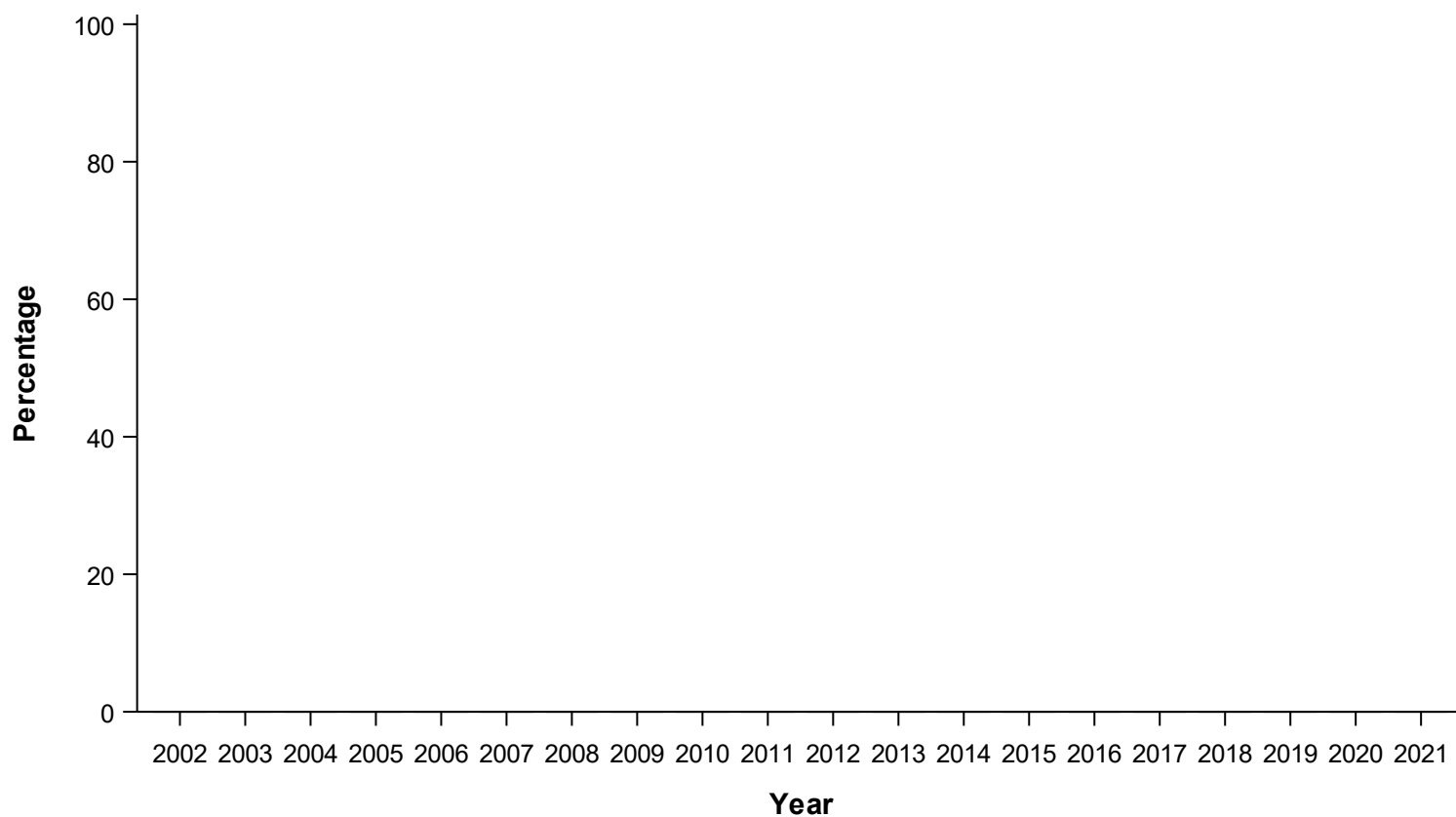
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Cefixime elevated MIC ≥ 0.25 $\mu\text{g/ml}$.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure L. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Ceftriaxone, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2002-2021



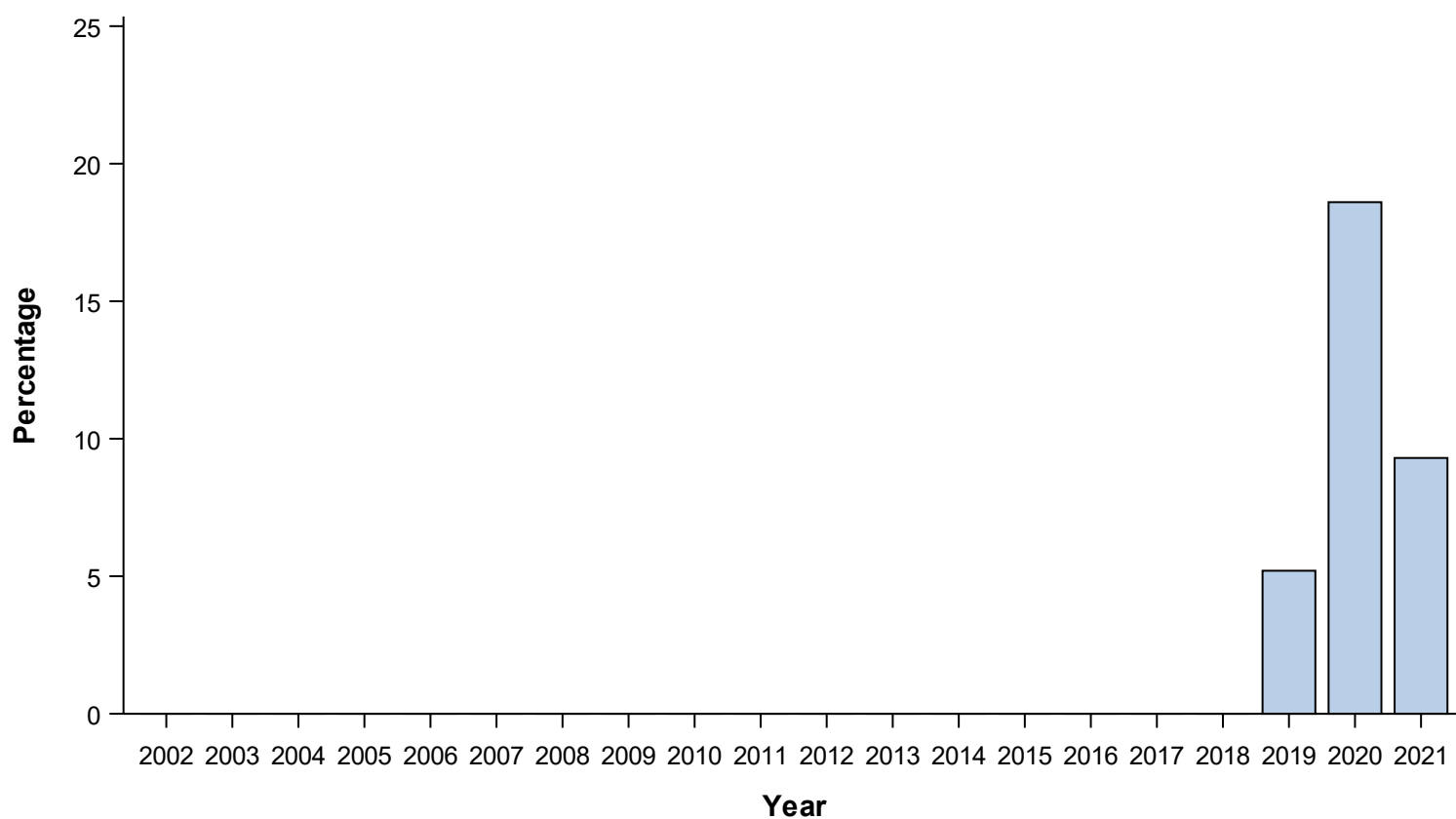
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

Note: Ceftriaxone elevated MIC ≥ 0.125 $\mu\text{g/ml}$.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure M. Percentage of Isolates with an Elevated Minimum Inhibitory Concentration (MIC) to Azithromycin, Gonococcal Isolate Surveillance Project (GISP), Washington, DC, 2002-2021



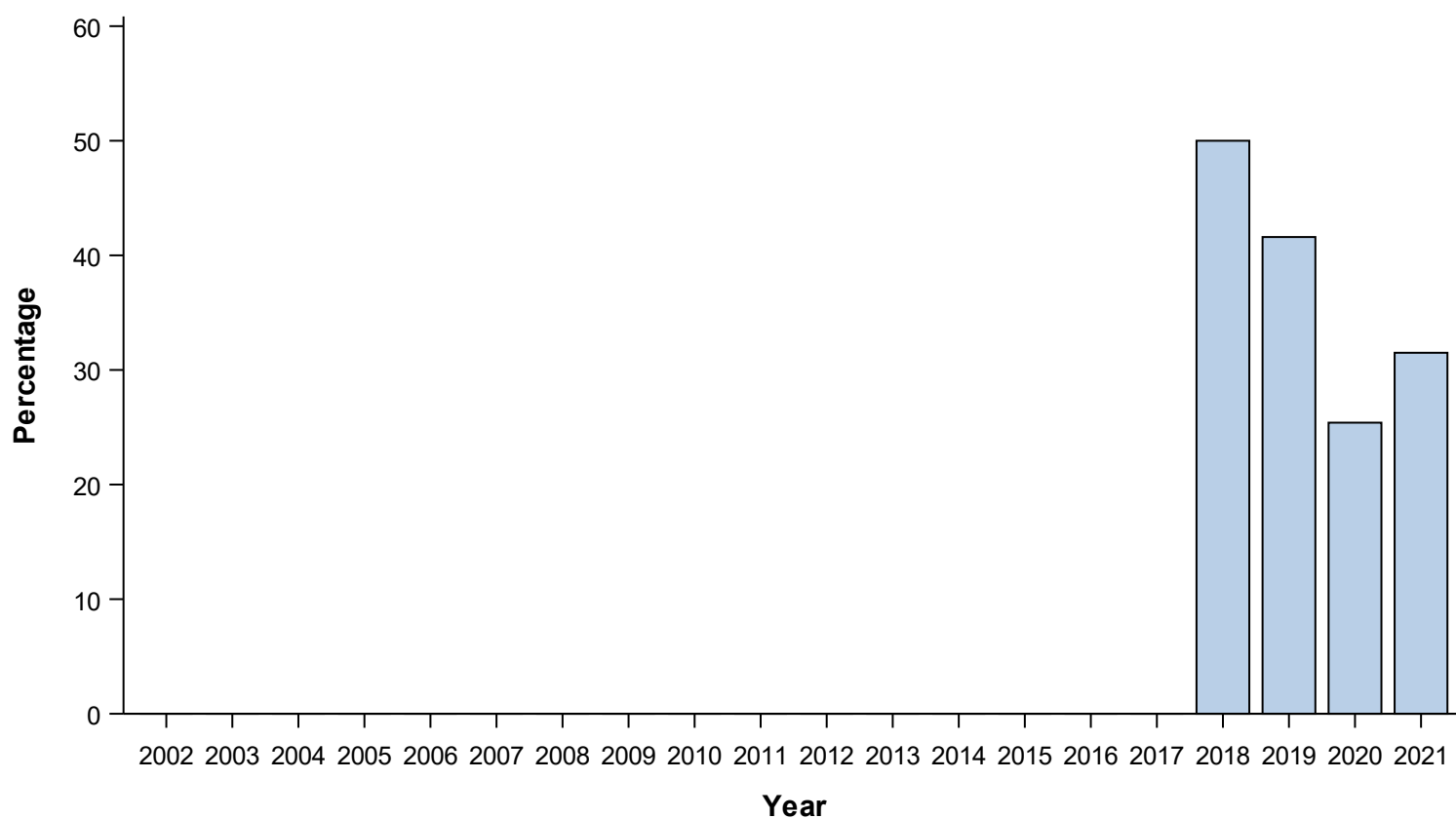
2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	4 (5.2)	11 (18.6)	5 (9.3)

Note: Azithromycin elevated MIC ≥ 1.0 $\mu\text{g/ml}$ prior to 2005 and ≥ 2.0 $\mu\text{g/ml}$ during 2005-2021.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.

Figure N. Percentage of Isolates with Resistance to Ciprofloxacin,
Gonococcal Isolate Surveillance Project (GISP),
Washington, DC, 2002-2021



2002 n (%)	2003 n (%)	2004 n (%)	2005 n (%)	2006 n (%)	2007 n (%)	2008 n (%)	2009 n (%)	2010 n (%)	2011 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

2012 n (%)	2013 n (%)	2014 n (%)	2015 n (%)	2016 n (%)	2017 n (%)	2018 n (%)	2019 n (%)	2020 n (%)	2021 n (%)
0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (50.0)	32 (41.6)	15 (25.4)	17 (31.5)

Note: Ciprofloxacin resistance MIC $\geq$ 1.0 μ g/ml.

Site participated in GISP during 2018-2021. Where blanks exist on the graphs for years of participation, no data were available for the criteria presented.