

Strep Throat Infections Up 30% From 2017 Peak After Pandemic Drop

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Key Findings:

- Like other infectious illnesses, rates of strep throat infections dropped significantly in 2020, coinciding with COVID-19 pandemic precautions. Rates remained low throughout 2020 and 2021.
- Similar to prior to the COVID-19 pandemic, strep throat infections started to increase in September 2022. Strep throat then increased to the greatest rate of infection seen since 2017 in February 2023.

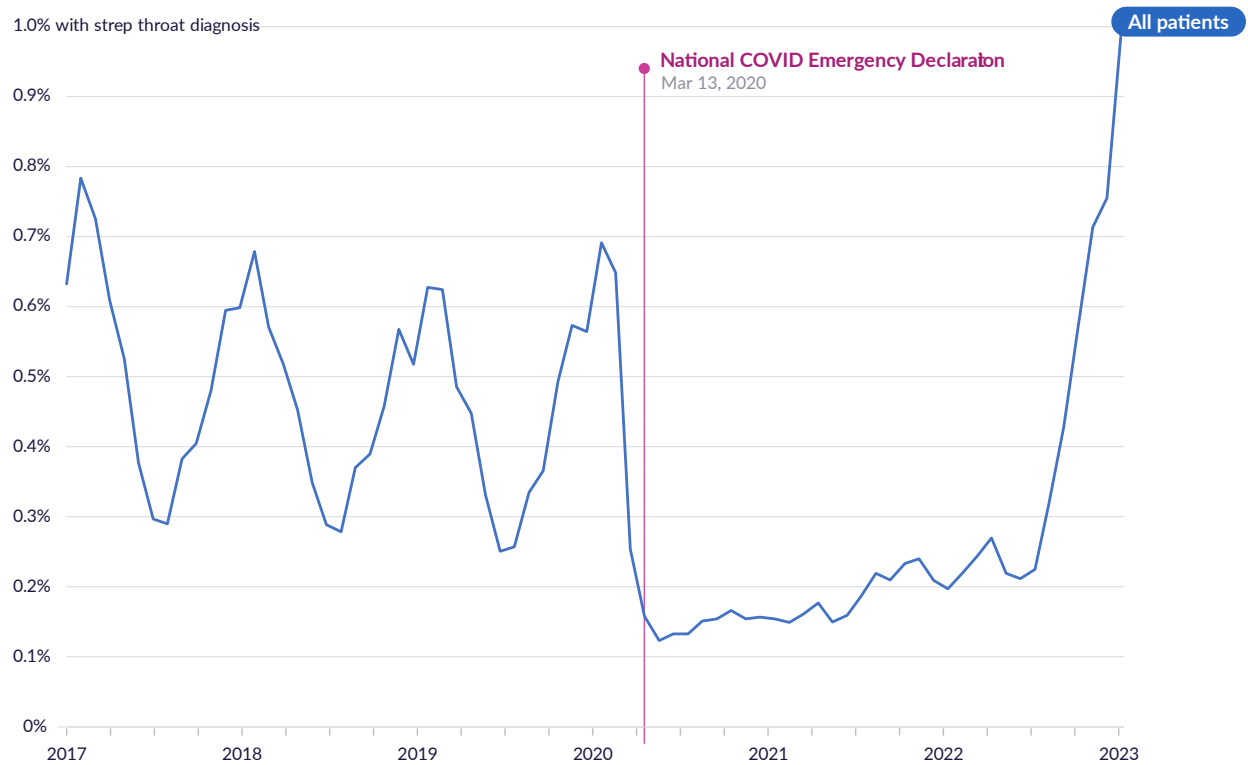
In February 2023, the Centers for Disease Control and Prevention (CDC) noted an increase in group A Streptococcus, or strep, infections, particularly in children.¹ Given this, we wanted to understand how the incidence of strep pharyngitis and strep tonsillitis (strep throat) in 2022 and 2023 compares to previous years. We identified 3.3 million strep throat infections across 982.3 million encounters from January 1, 2017, to February 28, 2023.

From January 2017 through February 2020, strep throat infections followed a seasonal pattern, typically starting to increase in September and peaking at between 0.63 and 0.74% of encounters in February each year. Similar to other infectious respiratory illnesses like influenza and RSV, strep throat encounters dramatically decreased in March 2020, coinciding with the start of the COVID-19 pandemic. Rates remained low (less than 0.28% of encounters) but began to rise again in September 2022. As of February 2023, strep throat encounters increased to a rate nearly 30% greater than the previous peak seen in February 2017 (0.74% to 1.0% of encounters), as shown in Figure 1.

Percentage of Encounters for Strep Throat

n= 982.3 million encounters

1.0% with strep throat diagnosis



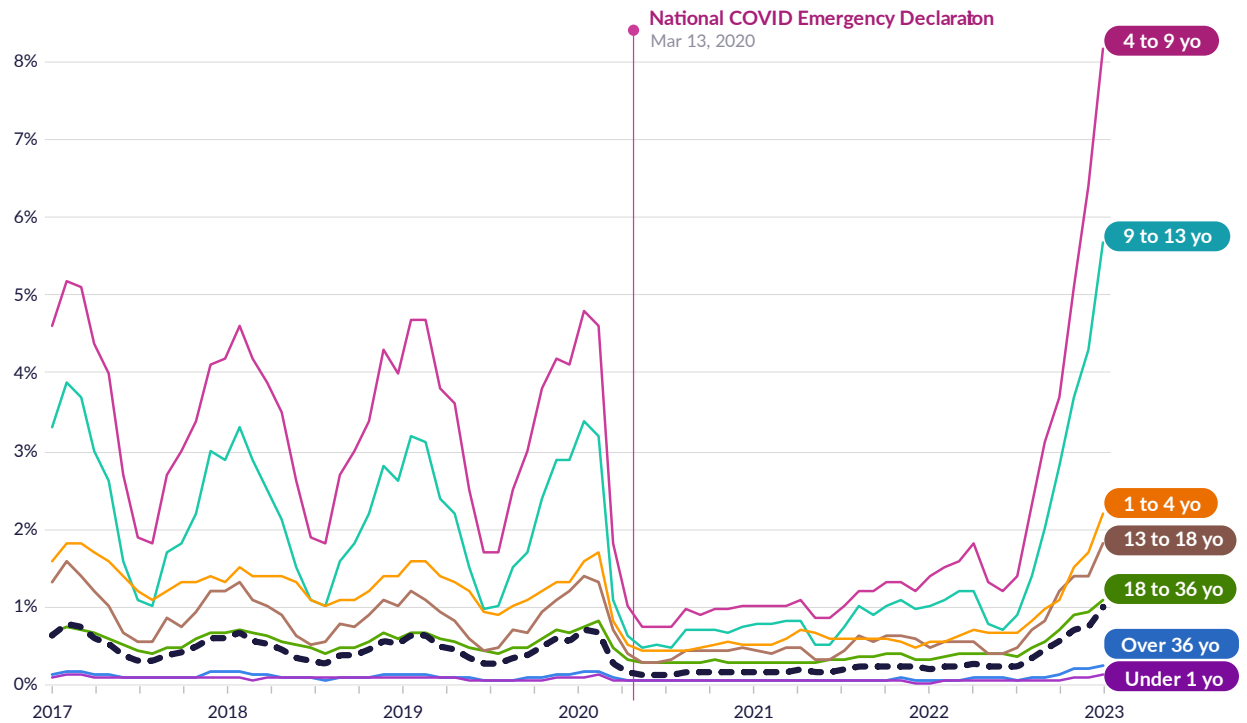
"Percentage of Encounters for Strep Throat," 2023.EpicResearch.org

Figure 1. Percentage of office visit and emergency encounters with a strep pharyngitis or strep tonsillitis diagnosis by month from January 2017 to February 2023.

These findings of increased encounters for strep throat held true across all social vulnerability index (SVIs) quartiles, all U.S. census regions, and all races. Strep throat diagnoses were most common in patients ages 4-13, but all age groups followed similar trends, as shown in Figure 2.

Percentage of Encounters for Strep Throat by Age

n= 982.3 million encounters ■ ■ ■ All Patient Ages
9% with strep throat diagnosis



"Percentage of Encounters for Strep Throat by Age," 2023.EpicResearch.org

Figure 2. Percentage of office visit and emergency encounters with a strep pharyngitis or strep tonsillitis diagnosis by month from January 2017 to February 2023 stratified by age.

These findings support the CDC's preliminary reports of increased strep activity in 2022 and 2023, especially in children.¹

These data come from Cosmos, a HIPAA-defined Limited Data Set of more than 184 million patients from 199 Epic organizations including 1,147 hospitals and more than 24,900 clinics, serving patients in all 50 states and Lebanon. This study was completed by two teams that worked independently, each composed of a clinician and research scientists. The two teams came to similar conclusions.

References

1. Centers for Disease Control and Prevention. Increase in Invasive Group A Strep Infections, 2022–2023. [Increase in Invasive Group A Strep Infections, 2022-2023 | CDC](#). Accessed on: March 14, 2023.

Data Definitions

Term	Definition
Strep throat diagnosis	Clinical diagnosis with any of the following ICD-10 diagnosis codes: <ul style="list-style-type: none"> J02.0, J03.00, J03.01

Table 1: Percentage of Encounters for Strep (All Ages)

Month Start	Percentage with Diagnosis (%)
1/1/2017	0.633
2/1/2017	0.784
3/1/2017	0.726
4/1/2017	0.610
5/1/2017	0.526
6/1/2017	0.377
7/1/2017	0.297
8/1/2017	0.290
9/1/2017	0.383
10/1/2017	0.405
11/1/2017	0.480
12/1/2017	0.595
1/1/2018	0.599
2/1/2018	0.679
3/1/2018	0.571
4/1/2018	0.518
5/1/2018	0.453
6/1/2018	0.349
7/1/2018	0.289
8/1/2018	0.279
9/1/2018	0.370
10/1/2018	0.390
11/1/2018	0.458
12/1/2018	0.568
1/1/2019	0.518
2/1/2019	0.628
3/1/2019	0.625
4/1/2019	0.486
5/1/2019	0.448
6/1/2019	0.332
7/1/2019	0.251
8/1/2019	0.257
9/1/2019	0.335
10/1/2019	0.366
11/1/2019	0.493
12/1/2019	0.574
1/1/2020	0.565
2/1/2020	0.692
3/1/2020	0.649
4/1/2020	0.254
5/1/2020	0.158
6/1/2020	0.123

7/1/2020	0.133
8/1/2020	0.133
9/1/2020	0.151
10/1/2020	0.154
11/1/2020	0.166
12/1/2020	0.154
1/1/2021	0.157
2/1/2021	0.154
3/1/2021	0.149
4/1/2021	0.161
5/1/2021	0.177
6/1/2021	0.150
7/1/2021	0.159
8/1/2021	0.187
9/1/2021	0.219
10/1/2021	0.210
11/1/2021	0.233
12/1/2021	0.240
1/1/2022	0.209
2/1/2022	0.197
3/1/2022	0.220
4/1/2022	0.244
5/1/2022	0.270
6/1/2022	0.219
7/1/2022	0.212
8/1/2022	0.225
9/1/2022	0.321
10/1/2022	0.430
11/1/2022	0.571
12/1/2022	0.714
1/1/2023	0.756
2/1/2023	1.000

Table 2: Percentage of Encounters for Strep by Age

Age Group	Month Start	Percentage of Encounters for Strep (%)
1 years or more and less than 4 years	1/1/2017	1.600
1 years or more and less than 4 years	2/1/2017	1.800
1 years or more and less than 4 years	3/1/2017	1.800
1 years or more and less than 4 years	4/1/2017	1.700
1 years or more and less than 4 years	5/1/2017	1.600
1 years or more and less than 4 years	6/1/2017	1.400
1 years or more and less than 4 years	7/1/2017	1.200
1 years or more and less than 4 years	8/1/2017	1.100
1 years or more and less than 4 years	9/1/2017	1.200

1 years or more and less than 4 years	10/1/2017	1.300
1 years or more and less than 4 years	11/1/2017	1.300
1 years or more and less than 4 years	12/1/2017	1.400
1 years or more and less than 4 years	1/1/2018	1.300
1 years or more and less than 4 years	2/1/2018	1.500
1 years or more and less than 4 years	3/1/2018	1.400
1 years or more and less than 4 years	4/1/2018	1.400
1 years or more and less than 4 years	5/1/2018	1.400
1 years or more and less than 4 years	6/1/2018	1.300
1 years or more and less than 4 years	7/1/2018	1.100
1 years or more and less than 4 years	8/1/2018	1.000
1 years or more and less than 4 years	9/1/2018	1.100
1 years or more and less than 4 years	10/1/2018	1.100
1 years or more and less than 4 years	11/1/2018	1.200
1 years or more and less than 4 years	12/1/2018	1.400
1 years or more and less than 4 years	1/1/2019	1.400
1 years or more and less than 4 years	2/1/2019	1.600
1 years or more and less than 4 years	3/1/2019	1.600
1 years or more and less than 4 years	4/1/2019	1.400
1 years or more and less than 4 years	5/1/2019	1.300
1 years or more and less than 4 years	6/1/2019	1.200
1 years or more and less than 4 years	7/1/2019	0.946
1 years or more and less than 4 years	8/1/2019	0.880
1 years or more and less than 4 years	9/1/2019	0.987
1 years or more and less than 4 years	10/1/2019	1.100
1 years or more and less than 4 years	11/1/2019	1.200
1 years or more and less than 4 years	12/1/2019	1.300
1 years or more and less than 4 years	1/1/2020	1.300
1 years or more and less than 4 years	2/1/2020	1.600
1 years or more and less than 4 years	3/1/2020	1.700
1 years or more and less than 4 years	4/1/2020	0.802
1 years or more and less than 4 years	5/1/2020	0.521
1 years or more and less than 4 years	6/1/2020	0.420
1 years or more and less than 4 years	7/1/2020	0.430
1 years or more and less than 4 years	8/1/2020	0.433
1 years or more and less than 4 years	9/1/2020	0.443
1 years or more and less than 4 years	10/1/2020	0.463
1 years or more and less than 4 years	11/1/2020	0.526
1 years or more and less than 4 years	12/1/2020	0.530
1 years or more and less than 4 years	1/1/2021	0.502
1 years or more and less than 4 years	2/1/2021	0.491
1 years or more and less than 4 years	3/1/2021	0.516
1 years or more and less than 4 years	4/1/2021	0.571
1 years or more and less than 4 years	5/1/2021	0.692
1 years or more and less than 4 years	6/1/2021	0.650

1 years or more and less than 4 years	7/1/2021	0.590
1 years or more and less than 4 years	8/1/2021	0.588
1 years or more and less than 4 years	9/1/2021	0.588
1 years or more and less than 4 years	10/1/2021	0.597
1 years or more and less than 4 years	11/1/2021	0.573
1 years or more and less than 4 years	12/1/2021	0.563
1 years or more and less than 4 years	1/1/2022	0.460
1 years or more and less than 4 years	2/1/2022	0.547
1 years or more and less than 4 years	3/1/2022	0.549
1 years or more and less than 4 years	4/1/2022	0.605
1 years or more and less than 4 years	5/1/2022	0.699
1 years or more and less than 4 years	6/1/2022	0.672
1 years or more and less than 4 years	7/1/2022	0.668
1 years or more and less than 4 years	8/1/2022	0.670
1 years or more and less than 4 years	9/1/2022	0.804
1 years or more and less than 4 years	10/1/2022	0.972
1 years or more and less than 4 years	11/1/2022	1.100
1 years or more and less than 4 years	12/1/2022	1.500
1 years or more and less than 4 years	1/1/2023	1.700
1 years or more and less than 4 years	2/1/2023	2.200
13 years or more and less than 18 years	1/1/2017	1.300
13 years or more and less than 18 years	2/1/2017	1.600
13 years or more and less than 18 years	3/1/2017	1.400
13 years or more and less than 18 years	4/1/2017	1.200
13 years or more and less than 18 years	5/1/2017	1.000
13 years or more and less than 18 years	6/1/2017	0.651
13 years or more and less than 18 years	7/1/2017	0.550
13 years or more and less than 18 years	8/1/2017	0.547
13 years or more and less than 18 years	9/1/2017	0.853
13 years or more and less than 18 years	10/1/2017	0.735
13 years or more and less than 18 years	11/1/2017	0.934
13 years or more and less than 18 years	12/1/2017	1.200
13 years or more and less than 18 years	1/1/2018	1.200
13 years or more and less than 18 years	2/1/2018	1.300
13 years or more and less than 18 years	3/1/2018	1.100
13 years or more and less than 18 years	4/1/2018	1.000
13 years or more and less than 18 years	5/1/2018	0.888
13 years or more and less than 18 years	6/1/2018	0.617
13 years or more and less than 18 years	7/1/2018	0.522
13 years or more and less than 18 years	8/1/2018	0.531
13 years or more and less than 18 years	9/1/2018	0.795
13 years or more and less than 18 years	10/1/2018	0.741
13 years or more and less than 18 years	11/1/2018	0.889
13 years or more and less than 18 years	12/1/2018	1.100
13 years or more and less than 18 years	1/1/2019	1.000

13 years or more and less than 18 years	2/1/2019	1.200
13 years or more and less than 18 years	3/1/2019	1.100
13 years or more and less than 18 years	4/1/2019	0.930
13 years or more and less than 18 years	5/1/2019	0.832
13 years or more and less than 18 years	6/1/2019	0.588
13 years or more and less than 18 years	7/1/2019	0.430
13 years or more and less than 18 years	8/1/2019	0.479
13 years or more and less than 18 years	9/1/2019	0.692
13 years or more and less than 18 years	10/1/2019	0.665
13 years or more and less than 18 years	11/1/2019	0.912
13 years or more and less than 18 years	12/1/2019	1.100
13 years or more and less than 18 years	1/1/2020	1.200
13 years or more and less than 18 years	2/1/2020	1.400
13 years or more and less than 18 years	3/1/2020	1.300
13 years or more and less than 18 years	4/1/2020	0.681
13 years or more and less than 18 years	5/1/2020	0.391
13 years or more and less than 18 years	6/1/2020	0.289
13 years or more and less than 18 years	7/1/2020	0.292
13 years or more and less than 18 years	8/1/2020	0.308
13 years or more and less than 18 years	9/1/2020	0.443
13 years or more and less than 18 years	10/1/2020	0.425
13 years or more and less than 18 years	11/1/2020	0.449
13 years or more and less than 18 years	12/1/2020	0.421
13 years or more and less than 18 years	1/1/2021	0.465
13 years or more and less than 18 years	2/1/2021	0.434
13 years or more and less than 18 years	3/1/2021	0.378
13 years or more and less than 18 years	4/1/2021	0.456
13 years or more and less than 18 years	5/1/2021	0.452
13 years or more and less than 18 years	6/1/2021	0.309
13 years or more and less than 18 years	7/1/2021	0.332
13 years or more and less than 18 years	8/1/2021	0.442
13 years or more and less than 18 years	9/1/2021	0.607
13 years or more and less than 18 years	10/1/2021	0.558
13 years or more and less than 18 years	11/1/2021	0.619
13 years or more and less than 18 years	12/1/2021	0.626
13 years or more and less than 18 years	1/1/2022	0.587
13 years or more and less than 18 years	2/1/2022	0.468
13 years or more and less than 18 years	3/1/2022	0.558
13 years or more and less than 18 years	4/1/2022	0.559
13 years or more and less than 18 years	5/1/2022	0.564
13 years or more and less than 18 years	6/1/2022	0.404
13 years or more and less than 18 years	7/1/2022	0.381
13 years or more and less than 18 years	8/1/2022	0.477
13 years or more and less than 18 years	9/1/2022	0.709
13 years or more and less than 18 years	10/1/2022	0.810

13 years or more and less than 18 years	11/1/2022	1.200
13 years or more and less than 18 years	12/1/2022	1.400
13 years or more and less than 18 years	1/1/2023	1.400
13 years or more and less than 18 years	2/1/2023	1.800
18 years or more and less than 36 years	1/1/2017	0.655
18 years or more and less than 36 years	2/1/2017	0.733
18 years or more and less than 36 years	3/1/2017	0.707
18 years or more and less than 36 years	4/1/2017	0.662
18 years or more and less than 36 years	5/1/2017	0.582
18 years or more and less than 36 years	6/1/2017	0.508
18 years or more and less than 36 years	7/1/2017	0.446
18 years or more and less than 36 years	8/1/2017	0.411
18 years or more and less than 36 years	9/1/2017	0.477
18 years or more and less than 36 years	10/1/2017	0.474
18 years or more and less than 36 years	11/1/2017	0.569
18 years or more and less than 36 years	12/1/2017	0.671
18 years or more and less than 36 years	1/1/2018	0.663
18 years or more and less than 36 years	2/1/2018	0.690
18 years or more and less than 36 years	3/1/2018	0.653
18 years or more and less than 36 years	4/1/2018	0.627
18 years or more and less than 36 years	5/1/2018	0.557
18 years or more and less than 36 years	6/1/2018	0.501
18 years or more and less than 36 years	7/1/2018	0.462
18 years or more and less than 36 years	8/1/2018	0.411
18 years or more and less than 36 years	9/1/2018	0.470
18 years or more and less than 36 years	10/1/2018	0.476
18 years or more and less than 36 years	11/1/2018	0.555
18 years or more and less than 36 years	12/1/2018	0.654
18 years or more and less than 36 years	1/1/2019	0.597
18 years or more and less than 36 years	2/1/2019	0.642
18 years or more and less than 36 years	3/1/2019	0.670
18 years or more and less than 36 years	4/1/2019	0.598
18 years or more and less than 36 years	5/1/2019	0.548
18 years or more and less than 36 years	6/1/2019	0.487
18 years or more and less than 36 years	7/1/2019	0.417
18 years or more and less than 36 years	8/1/2019	0.384
18 years or more and less than 36 years	9/1/2019	0.451
18 years or more and less than 36 years	10/1/2019	0.453
18 years or more and less than 36 years	11/1/2019	0.571
18 years or more and less than 36 years	12/1/2019	0.685
18 years or more and less than 36 years	1/1/2020	0.642
18 years or more and less than 36 years	2/1/2020	0.730
18 years or more and less than 36 years	3/1/2020	0.807
18 years or more and less than 36 years	4/1/2020	0.450
18 years or more and less than 36 years	5/1/2020	0.318

18 years or more and less than 36 years	6/1/2020	0.268
18 years or more and less than 36 years	7/1/2020	0.275
18 years or more and less than 36 years	8/1/2020	0.268
18 years or more and less than 36 years	9/1/2020	0.283
18 years or more and less than 36 years	10/1/2020	0.290
18 years or more and less than 36 years	11/1/2020	0.306
18 years or more and less than 36 years	12/1/2020	0.285
18 years or more and less than 36 years	1/1/2021	0.287
18 years or more and less than 36 years	2/1/2021	0.275
18 years or more and less than 36 years	3/1/2021	0.267
18 years or more and less than 36 years	4/1/2021	0.263
18 years or more and less than 36 years	5/1/2021	0.291
18 years or more and less than 36 years	6/1/2021	0.279
18 years or more and less than 36 years	7/1/2021	0.299
18 years or more and less than 36 years	8/1/2021	0.297
18 years or more and less than 36 years	9/1/2021	0.340
18 years or more and less than 36 years	10/1/2021	0.348
18 years or more and less than 36 years	11/1/2021	0.396
18 years or more and less than 36 years	12/1/2021	0.395
18 years or more and less than 36 years	1/1/2022	0.329
18 years or more and less than 36 years	2/1/2022	0.307
18 years or more and less than 36 years	3/1/2022	0.342
18 years or more and less than 36 years	4/1/2022	0.382
18 years or more and less than 36 years	5/1/2022	0.411
18 years or more and less than 36 years	6/1/2022	0.396
18 years or more and less than 36 years	7/1/2022	0.394
18 years or more and less than 36 years	8/1/2022	0.366
18 years or more and less than 36 years	9/1/2022	0.451
18 years or more and less than 36 years	10/1/2022	0.554
18 years or more and less than 36 years	11/1/2022	0.718
18 years or more and less than 36 years	12/1/2022	0.883
18 years or more and less than 36 years	1/1/2023	0.918
18 years or more and less than 36 years	2/1/2023	1.100
36 years or more	1/1/2017	0.131
36 years or more	2/1/2017	0.159
36 years or more	3/1/2017	0.148
36 years or more	4/1/2017	0.128
36 years or more	5/1/2017	0.109
36 years or more	6/1/2017	0.091
36 years or more	7/1/2017	0.073
36 years or more	8/1/2017	0.069
36 years or more	9/1/2017	0.083
36 years or more	10/1/2017	0.085
36 years or more	11/1/2017	0.103
36 years or more	12/1/2017	0.143

36 years or more	1/1/2018	0.145
36 years or more	2/1/2018	0.146
36 years or more	3/1/2018	0.126
36 years or more	4/1/2018	0.116
36 years or more	5/1/2018	0.095
36 years or more	6/1/2018	0.083
36 years or more	7/1/2018	0.070
36 years or more	8/1/2018	0.063
36 years or more	9/1/2018	0.073
36 years or more	10/1/2018	0.077
36 years or more	11/1/2018	0.099
36 years or more	12/1/2018	0.129
36 years or more	1/1/2019	0.118
36 years or more	2/1/2019	0.129
36 years or more	3/1/2019	0.130
36 years or more	4/1/2019	0.102
36 years or more	5/1/2019	0.092
36 years or more	6/1/2019	0.078
36 years or more	7/1/2019	0.059
36 years or more	8/1/2019	0.056
36 years or more	9/1/2019	0.065
36 years or more	10/1/2019	0.071
36 years or more	11/1/2019	0.097
36 years or more	12/1/2019	0.127
36 years or more	1/1/2020	0.129
36 years or more	2/1/2020	0.157
36 years or more	3/1/2020	0.179
36 years or more	4/1/2020	0.083
36 years or more	5/1/2020	0.044
36 years or more	6/1/2020	0.032
36 years or more	7/1/2020	0.036
36 years or more	8/1/2020	0.033
36 years or more	9/1/2020	0.033
36 years or more	10/1/2020	0.037
36 years or more	11/1/2020	0.043
36 years or more	12/1/2020	0.042
36 years or more	1/1/2021	0.039
36 years or more	2/1/2021	0.035
36 years or more	3/1/2021	0.033
36 years or more	4/1/2021	0.033
36 years or more	5/1/2021	0.038
36 years or more	6/1/2021	0.039
36 years or more	7/1/2021	0.045
36 years or more	8/1/2021	0.049
36 years or more	9/1/2021	0.047

36 years or more	10/1/2021	0.047
36 years or more	11/1/2021	0.056
36 years or more	12/1/2021	0.072
36 years or more	1/1/2022	0.064
36 years or more	2/1/2022	0.044
36 years or more	3/1/2022	0.048
36 years or more	4/1/2022	0.057
36 years or more	5/1/2022	0.067
36 years or more	6/1/2022	0.070
36 years or more	7/1/2022	0.067
36 years or more	8/1/2022	0.059
36 years or more	9/1/2022	0.071
36 years or more	10/1/2022	0.095
36 years or more	11/1/2022	0.134
36 years or more	12/1/2022	0.190
36 years or more	1/1/2023	0.183
36 years or more	2/1/2023	0.221
4 years or more and less than 9 years	1/1/2017	4.600
4 years or more and less than 9 years	2/1/2017	5.200
4 years or more and less than 9 years	3/1/2017	5.100
4 years or more and less than 9 years	4/1/2017	4.400
4 years or more and less than 9 years	5/1/2017	4.000
4 years or more and less than 9 years	6/1/2017	2.700
4 years or more and less than 9 years	7/1/2017	1.900
4 years or more and less than 9 years	8/1/2017	1.800
4 years or more and less than 9 years	9/1/2017	2.700
4 years or more and less than 9 years	10/1/2017	3.000
4 years or more and less than 9 years	11/1/2017	3.400
4 years or more and less than 9 years	12/1/2017	4.100
4 years or more and less than 9 years	1/1/2018	4.200
4 years or more and less than 9 years	2/1/2018	4.600
4 years or more and less than 9 years	3/1/2018	4.200
4 years or more and less than 9 years	4/1/2018	3.900
4 years or more and less than 9 years	5/1/2018	3.500
4 years or more and less than 9 years	6/1/2018	2.600
4 years or more and less than 9 years	7/1/2018	1.900
4 years or more and less than 9 years	8/1/2018	1.800
4 years or more and less than 9 years	9/1/2018	2.700
4 years or more and less than 9 years	10/1/2018	3.000
4 years or more and less than 9 years	11/1/2018	3.400
4 years or more and less than 9 years	12/1/2018	4.300
4 years or more and less than 9 years	1/1/2019	4.000
4 years or more and less than 9 years	2/1/2019	4.700
4 years or more and less than 9 years	3/1/2019	4.700
4 years or more and less than 9 years	4/1/2019	3.800

4 years or more and less than 9 years	5/1/2019	3.600
4 years or more and less than 9 years	6/1/2019	2.500
4 years or more and less than 9 years	7/1/2019	1.700
4 years or more and less than 9 years	8/1/2019	1.700
4 years or more and less than 9 years	9/1/2019	2.500
4 years or more and less than 9 years	10/1/2019	3.000
4 years or more and less than 9 years	11/1/2019	3.800
4 years or more and less than 9 years	12/1/2019	4.200
4 years or more and less than 9 years	1/1/2020	4.100
4 years or more and less than 9 years	2/1/2020	4.800
4 years or more and less than 9 years	3/1/2020	4.600
4 years or more and less than 9 years	4/1/2020	1.800
4 years or more and less than 9 years	5/1/2020	1.000
4 years or more and less than 9 years	6/1/2020	0.754
4 years or more and less than 9 years	7/1/2020	0.747
4 years or more and less than 9 years	8/1/2020	0.744
4 years or more and less than 9 years	9/1/2020	0.953
4 years or more and less than 9 years	10/1/2020	0.879
4 years or more and less than 9 years	11/1/2020	0.976
4 years or more and less than 9 years	12/1/2020	0.967
4 years or more and less than 9 years	1/1/2021	0.991
4 years or more and less than 9 years	2/1/2021	0.992
4 years or more and less than 9 years	3/1/2021	0.990
4 years or more and less than 9 years	4/1/2021	1.000
4 years or more and less than 9 years	5/1/2021	1.100
4 years or more and less than 9 years	6/1/2021	0.857
4 years or more and less than 9 years	7/1/2021	0.834
4 years or more and less than 9 years	8/1/2021	1.000
4 years or more and less than 9 years	9/1/2021	1.200
4 years or more and less than 9 years	10/1/2021	1.200
4 years or more and less than 9 years	11/1/2021	1.300
4 years or more and less than 9 years	12/1/2021	1.300
4 years or more and less than 9 years	1/1/2022	1.200
4 years or more and less than 9 years	2/1/2022	1.400
4 years or more and less than 9 years	3/1/2022	1.500
4 years or more and less than 9 years	4/1/2022	1.600
4 years or more and less than 9 years	5/1/2022	1.800
4 years or more and less than 9 years	6/1/2022	1.300
4 years or more and less than 9 years	7/1/2022	1.200
4 years or more and less than 9 years	8/1/2022	1.400
4 years or more and less than 9 years	9/1/2022	2.300
4 years or more and less than 9 years	10/1/2022	3.100
4 years or more and less than 9 years	11/1/2022	3.700
4 years or more and less than 9 years	12/1/2022	5.100
4 years or more and less than 9 years	1/1/2023	6.400

4 years or more and less than 9 years	2/1/2023	8.200
9 years or more and less than 13 years	1/1/2017	3.300
9 years or more and less than 13 years	2/1/2017	3.900
9 years or more and less than 13 years	3/1/2017	3.700
9 years or more and less than 13 years	4/1/2017	3.000
9 years or more and less than 13 years	5/1/2017	2.600
9 years or more and less than 13 years	6/1/2017	1.600
9 years or more and less than 13 years	7/1/2017	1.100
9 years or more and less than 13 years	8/1/2017	1.000
9 years or more and less than 13 years	9/1/2017	1.700
9 years or more and less than 13 years	10/1/2017	1.800
9 years or more and less than 13 years	11/1/2017	2.200
9 years or more and less than 13 years	12/1/2017	3.000
9 years or more and less than 13 years	1/1/2018	2.900
9 years or more and less than 13 years	2/1/2018	3.300
9 years or more and less than 13 years	3/1/2018	2.900
9 years or more and less than 13 years	4/1/2018	2.500
9 years or more and less than 13 years	5/1/2018	2.100
9 years or more and less than 13 years	6/1/2018	1.500
9 years or more and less than 13 years	7/1/2018	1.100
9 years or more and less than 13 years	8/1/2018	1.000
9 years or more and less than 13 years	9/1/2018	1.600
9 years or more and less than 13 years	10/1/2018	1.800
9 years or more and less than 13 years	11/1/2018	2.200
9 years or more and less than 13 years	12/1/2018	2.800
9 years or more and less than 13 years	1/1/2019	2.600
9 years or more and less than 13 years	2/1/2019	3.200
9 years or more and less than 13 years	3/1/2019	3.100
9 years or more and less than 13 years	4/1/2019	2.400
9 years or more and less than 13 years	5/1/2019	2.200
9 years or more and less than 13 years	6/1/2019	1.500
9 years or more and less than 13 years	7/1/2019	0.959
9 years or more and less than 13 years	8/1/2019	1.000
9 years or more and less than 13 years	9/1/2019	1.500
9 years or more and less than 13 years	10/1/2019	1.700
9 years or more and less than 13 years	11/1/2019	2.400
9 years or more and less than 13 years	12/1/2019	2.900
9 years or more and less than 13 years	1/1/2020	2.900
9 years or more and less than 13 years	2/1/2020	3.400
9 years or more and less than 13 years	3/1/2020	3.200
9 years or more and less than 13 years	4/1/2020	1.100
9 years or more and less than 13 years	5/1/2020	0.632
9 years or more and less than 13 years	6/1/2020	0.471
9 years or more and less than 13 years	7/1/2020	0.491
9 years or more and less than 13 years	8/1/2020	0.488

9 years or more and less than 13 years	9/1/2020	0.716
9 years or more and less than 13 years	10/1/2020	0.681
9 years or more and less than 13 years	11/1/2020	0.710
9 years or more and less than 13 years	12/1/2020	0.652
9 years or more and less than 13 years	1/1/2021	0.739
9 years or more and less than 13 years	2/1/2021	0.764
9 years or more and less than 13 years	3/1/2021	0.759
9 years or more and less than 13 years	4/1/2021	0.827
9 years or more and less than 13 years	5/1/2021	0.813
9 years or more and less than 13 years	6/1/2021	0.519
9 years or more and less than 13 years	7/1/2021	0.512
9 years or more and less than 13 years	8/1/2021	0.727
9 years or more and less than 13 years	9/1/2021	0.999
9 years or more and less than 13 years	10/1/2021	0.882
9 years or more and less than 13 years	11/1/2021	1.000
9 years or more and less than 13 years	12/1/2021	1.100
9 years or more and less than 13 years	1/1/2022	0.983
9 years or more and less than 13 years	2/1/2022	1.000
9 years or more and less than 13 years	3/1/2022	1.100
9 years or more and less than 13 years	4/1/2022	1.200
9 years or more and less than 13 years	5/1/2022	1.200
9 years or more and less than 13 years	6/1/2022	0.793
9 years or more and less than 13 years	7/1/2022	0.715
9 years or more and less than 13 years	8/1/2022	0.899
9 years or more and less than 13 years	9/1/2022	1.400
9 years or more and less than 13 years	10/1/2022	2.000
9 years or more and less than 13 years	11/1/2022	2.800
9 years or more and less than 13 years	12/1/2022	3.700
9 years or more and less than 13 years	1/1/2023	4.300
9 years or more and less than 13 years	2/1/2023	5.700
Less than 1 years	1/1/2017	0.100
Less than 1 years	2/1/2017	0.116
Less than 1 years	3/1/2017	0.106
Less than 1 years	4/1/2017	0.101
Less than 1 years	5/1/2017	0.100
Less than 1 years	6/1/2017	0.097
Less than 1 years	7/1/2017	0.071
Less than 1 years	8/1/2017	0.083
Less than 1 years	9/1/2017	0.084
Less than 1 years	10/1/2017	0.070
Less than 1 years	11/1/2017	0.077
Less than 1 years	12/1/2017	0.091
Less than 1 years	1/1/2018	0.081
Less than 1 years	2/1/2018	0.073
Less than 1 years	3/1/2018	0.065

Less than 1 years	4/1/2018	0.080
Less than 1 years	5/1/2018	0.081
Less than 1 years	6/1/2018	0.080
Less than 1 years	7/1/2018	0.087
Less than 1 years	8/1/2018	0.076
Less than 1 years	9/1/2018	0.075
Less than 1 years	10/1/2018	0.078
Less than 1 years	11/1/2018	0.074
Less than 1 years	12/1/2018	0.079
Less than 1 years	1/1/2019	0.092
Less than 1 years	2/1/2019	0.090
Less than 1 years	3/1/2019	0.095
Less than 1 years	4/1/2019	0.075
Less than 1 years	5/1/2019	0.079
Less than 1 years	6/1/2019	0.061
Less than 1 years	7/1/2019	0.058
Less than 1 years	8/1/2019	0.053
Less than 1 years	9/1/2019	0.051
Less than 1 years	10/1/2019	0.052
Less than 1 years	11/1/2019	0.066
Less than 1 years	12/1/2019	0.069
Less than 1 years	1/1/2020	0.071
Less than 1 years	2/1/2020	0.098
Less than 1 years	3/1/2020	0.106
Less than 1 years	4/1/2020	0.038
Less than 1 years	5/1/2020	0.040
Less than 1 years	6/1/2020	0.038
Less than 1 years	7/1/2020	0.030
Less than 1 years	8/1/2020	0.038
Less than 1 years	9/1/2020	0.036
Less than 1 years	10/1/2020	0.041
Less than 1 years	11/1/2020	0.034
Less than 1 years	12/1/2020	0.044
Less than 1 years	1/1/2021	0.032
Less than 1 years	2/1/2021	0.032
Less than 1 years	3/1/2021	0.028
Less than 1 years	4/1/2021	0.039
Less than 1 years	5/1/2021	0.046
Less than 1 years	6/1/2021	0.046
Less than 1 years	7/1/2021	0.034
Less than 1 years	8/1/2021	0.032
Less than 1 years	9/1/2021	0.036
Less than 1 years	10/1/2021	0.036
Less than 1 years	11/1/2021	0.031
Less than 1 years	12/1/2021	0.032

Less than 1 years	1/1/2022	0.026
Less than 1 years	2/1/2022	0.024
Less than 1 years	3/1/2022	0.029
Less than 1 years	4/1/2022	0.032
Less than 1 years	5/1/2022	0.045
Less than 1 years	6/1/2022	0.038
Less than 1 years	7/1/2022	0.043
Less than 1 years	8/1/2022	0.039
Less than 1 years	9/1/2022	0.049
Less than 1 years	10/1/2022	0.047
Less than 1 years	11/1/2022	0.061
Less than 1 years	12/1/2022	0.077
Less than 1 years	1/1/2023	0.091
Less than 1 years	2/1/2023	0.129