

Silver Lining: Pandemic Precautions Reduced the Spread of Other Contagions

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Abstract: Common infections declined up to 66% in the 2020-2021 season compared to predictions based on previous years.

To investigate potential impacts of the COVID-19 pandemic on nine common communicable infections, we compared the number of confirmed cases from March 2020 to February 2021 to the same period of the past three years, starting with March 2017. We found that all nine diseases declined during the pandemic, and the general pattern of reduced communicable infections during the COVID-19 pandemic appears to be shared across multiple communicable infections.

For the nine illnesses shown in Figure 1, the decline was generally largest for infections spread through airborne transmission, such as acute bronchitis. The decline was smallest for infections spread through touch, such as chicken pox.

Communicable Infections from 2017-2021

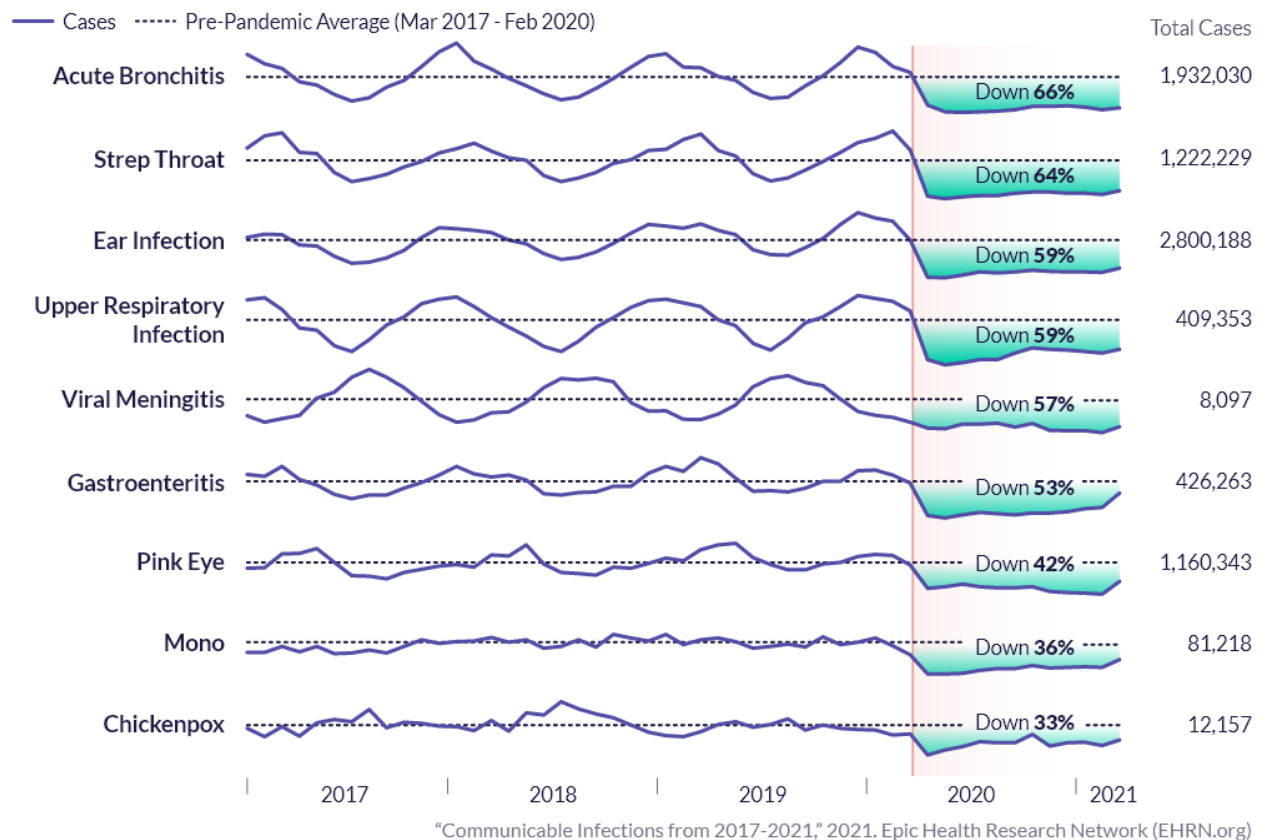


Figure 1. Percent decline in communicable infections from March 2020 through February 2021.

The significant drop in communicable infection cases of multiple types is consistent with other research^{1,2}. The typical seasonality associated with most of these illnesses also was not seen during the pandemic. These factors suggest that the enhanced infection prevention measures in place to combat COVID-19, such as face masks, social distancing, and limits on gatherings, might have played a role in the decline. However, it's also possible that some of the decline represents a drop in the number of patients seeking treatment rather than solely a reduction in the number of infections.

These data are from Cosmos, a HIPAA Limited Data Set of EHR data of more than 110 million patients from Epic customers. This study was completed by two teams, each comprised of a clinician and a data scientist, which independently acquired and analyzed data. Data are pooled from 60 healthcare organizations representing 241 hospitals that span 45 states and cover 42 million patients.

References

1. Yum S, Hong K, Sohn S, Kim J, Chun B. Trends in Viral Respiratory Infections During COVID-19 Pandemic, South Korea. *Emerg Infect Dis.* 2021;27(6):1685-1688. <https://doi.org/10.3201/eid2706.210135>
2. Partridge E, McCleery E, Cheema R, et al. Evaluation of Seasonal Respiratory Virus Activity Before and After the Statewide COVID-19 Shelter-in-Place Order in Northern California. *JAMA Netw Open.* 2021;4(1):e2035281. doi:10.1001/jamanetworkopen.2020.35281

Data Definitions

Term	Definition
Acute bronchitis	A diagnosis with one of the following ICD-10-CM codes: J20*, J21* Diagnosis Date: The start date of the encounter in which the diagnosis was documented. Diagnosis Context: Encounter Diagnosis or Billing Diagnosis
Conjunctivitis	A diagnosis with one of the following ICD-10-CM codes: H10.0*, H10.1*, H10.2*, H10.3* Diagnosis Date: The start date of the encounter in which the diagnosis was documented. Diagnosis Context: Encounter Diagnosis or Billing Diagnosis
Gastroenteritis	A diagnosis with one of the following ICD-10-CM codes: A08*, A09 Diagnosis Date: The start date of the encounter in which the diagnosis was documented. Diagnosis Context: Encounter Diagnosis or Billing Diagnosis
Infectious mononucleosis	A diagnosis with one of the following ICD-10-CM codes: B27* Diagnosis Date: The start date of the encounter in which the diagnosis was documented. Diagnosis Context: Encounter Diagnosis or Billing Diagnosis

Otitis media	<p>A diagnosis with one of the following ICD-10-CM codes: H66.0*, H66.4*, H66.9*, H67*</p> <p>Diagnosis Date: The start date of the encounter in which the diagnosis was documented.</p> <p>Diagnosis Context: Encounter Diagnosis or Billing Diagnosis</p>
Strep throat	<p>A diagnosis with one of the following ICD-10-CM codes: J02.0</p> <p>Diagnosis Date: The start date of the encounter in which the diagnosis was documented.</p> <p>Diagnosis Context: Encounter Diagnosis or Billing Diagnosis</p>
Upper respiratory infection	<p>A diagnosis with one of the following ICD-10-CM codes: J00</p> <p>Diagnosis Date: The start date of the encounter in which the diagnosis was documented.</p> <p>Diagnosis Context: Encounter Diagnosis or Billing Diagnosis</p>
Varicella	<p>A diagnosis with one of the following ICD-10-CM codes: B01.9</p> <p>Diagnosis Date: The start date of the encounter in which the diagnosis was documented.</p> <p>Diagnosis Context: Encounter Diagnosis or Billing Diagnosis</p>
Viral meningitis	<p>A diagnosis with one of the following ICD-10-CM codes: A87*</p> <p>Diagnosis Date: The start date of the encounter in which the diagnosis was documented.</p> <p>Diagnosis Context: Encounter Diagnosis or Billing Diagnosis</p>