COVID-19-Like Illness in Texas Syndromic Surveillance Systems

Background
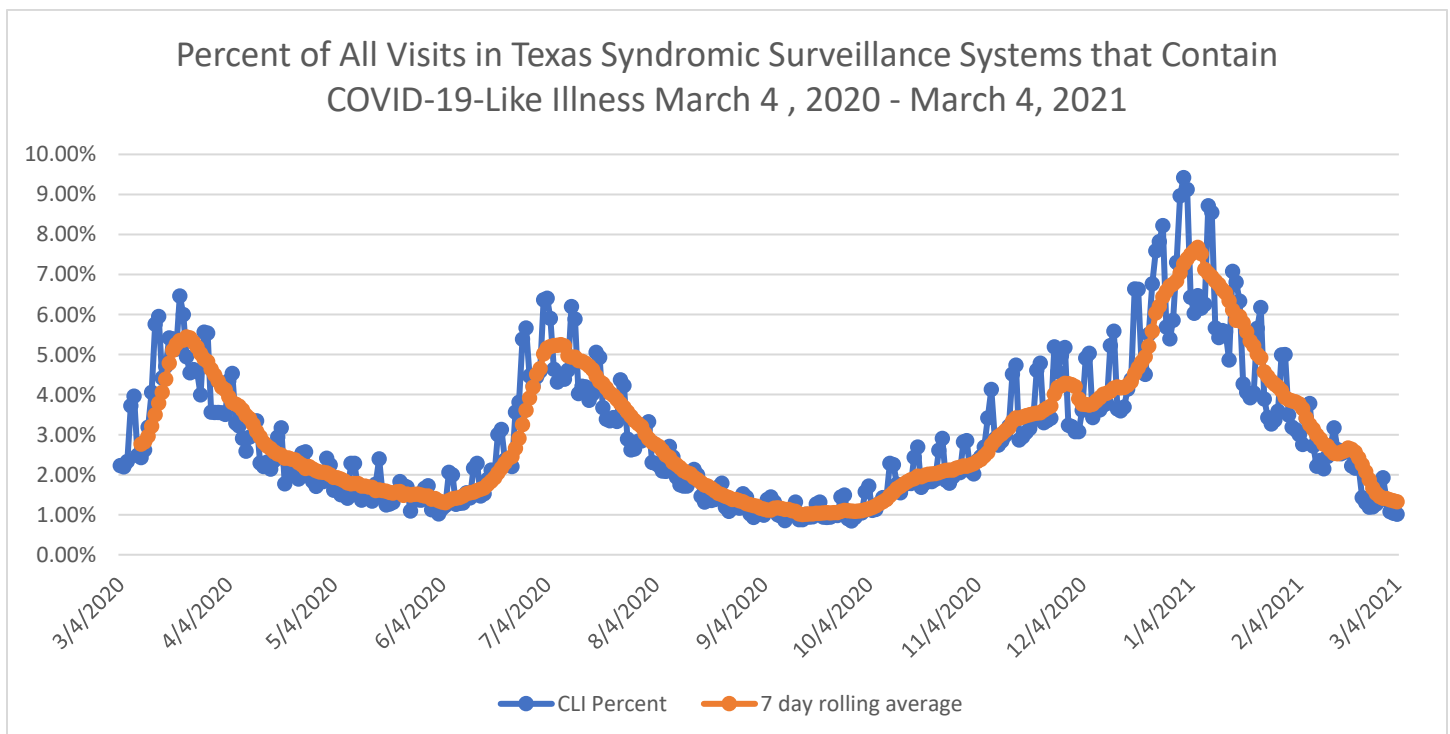
Three syndromic surveillance systems operate in Texas:

System	Entity
North Texas Syndromic Surveillance System (NTXSS)	Tarrant County Public Health
Syndromic Surveillance Consortium of Southeast Texas (SSCSeT)	City of Houston Health Department
Texas Syndromic Surveillance System (TxS2)	Texas Department of State Health Services (DSHS)

Both NTXSS and SSCSeT report data to TxS2. Over 80% of hospital Emergency Departments connect to one of these three syndromic system in Texas. Free-standing Emergency Rooms and Urgent Care Clinics can also connect. Over 50% of all eligible facilities connect to a syndromic system.

COVID-19-Like Illness

If a patient visits a medical facility with COVID-19-like symptoms but does not receive a diagnosis for a similar disease such as the flu, they count in the COVID-19-Like Illness query, or "CLI". From March 4, 2020 to March 4, 2021 there were 326,928 visits that matched this query. On Jan 2, 2021 Texas reached the highest percentage of all ER visits that had CLI at 9.42%. After a summer surge, the percent of visits that had CLI grew markedly over the winter and holiday season before shrinking again. Below is a graph with the percent of all visits that were CLI, as well as a 7-day rolling average of the percent.

Conclusions

There are many groups researching if syndromic surveillance can predict outbreaks of COVID-19. CLI trends have followed the trends in COVID-19 cases in Texas, and CLI has a correlation coefficient with COVID-19 cases of 0.83. These visits represent only about 15% of cases. Only a small percentage of people with a COVID-19 will need to go to the hospital, so this is expected.

Local and regional epidemiologists can use this data to watch for outbreaks in their area. By looking for trends they can react faster to new or worsening outbreaks. The table below shows the percent of all visits that were CLI from each county's patients.

CLI April 12, 2020 – March 4, 2021 By Patient County

County	Region	Average Percent of All Visits that were CLI	County	Region	Average Percent of All Visits that were CLI
Anderson	4/5N	2.533%	Briscoe	1	0.000%
Andrews	9/10	0.000%	Brooks	11	0.643%
Angelina	4/5N	2.911%	Brown	2/3	2.242%
Aransas	11	1.177%	Burleson	7	2.530%
Archer	2/3	0.000%	Burnet	7	1.770%
Armstrong	1	0.000%	Caldwell	7	3.923%
Atascosa	8	4.102%	Calhoun	8	0.842%
Austin	6/5S	2.302%	Callahan	2/3	0.000%
Bailey	1	0.000%	Cameron	11	4.072%
Bandera	8	1.473%	Camp	4/5N	1.867%
Bastrop	7	2.417%	Carson	1	0.000%
Baylor	2/3	0.000%	Cass	4/5N	1.030%
Bee	11	1.160%	Castro	1	0.000%
Bell	7	1.777%	Chambers	6/5S	1.612%
Bexar	8	2.638%	Cherokee	4/5N	3.160%
Blanco	7	2.584%	Childress	1	0.000%
Borden	9/10	0.000%	Clay	2/3	0.000%
Bosque	7	2.021%	Cochran	1	0.000%
Bowie	4/5N	1.339%	Coke	9/10	0.000%
Brazoria	6/5S	2.550%	Coleman	2/3	0.000%
Brazos	7	2.770%	Collin	2/3	2.395%
Brewster	9/10	0.000%	Collingsworth	1	0.000%
Colorado	6/5S	0.000%	Eastland	2/3	3.026%

County	Region	Average Percent of All Visits that were CLI	County	Region	Average Percent of All Visits that were CLI
Comal	8	1.612%	Ector	9/10	2.280%
Comanche	2/3	1.378%	Edwards	8	0.000%
Concho	9/10	0.000%	El Paso	9/10	3.023%
Cooke	2/3	2.104%	Ellis	2/3	3.007%
Coryell	7	1.580%	Erath	2/3	3.567%
Cottle	2/3	0.000%	Falls	7	2.528%
Crane	9/10	0.000%	Fannin	2/3	2.069%
Crockett	9/10	0.000%	Fayette	7	2.413%
Crosby	1	0.000%	Fisher	2/3	0.000%
Culberson	9/10	0.000%	Floyd	1	3.396%
Dallam	1	0.000%	Foard	2/3	0.000%
Dallas	2/3	2.694%	Fort Bend	6/5S	2.566%
Dawson	9/10	4.048%	Franklin	4/5N	0.000%
Deaf Smith	1	6.737%	Freestone	7	2.610%
Delta	4/5N	0.000%	Frio	8	3.986%
Denton	2/3	2.638%	Gaines	9/10	0.000%
DeWitt	8	2.082%	Galveston	6/5S	3.738%
Dickens	1	0.000%	Garza	1	0.000%
Dimmit	8	3.985%	Gillespie	8	2.790%
Donley	1	0.000%	Glasscock	9/10	0.000%
Duval	11	0.714%	Goliad	8	1.976%

County	Region	Average Percent of All Visits that were CLI in 2020	County	Region	Average Percent of All Visits that were CLI in 2020
Gonzales	8	2.675%	Hood	2/3	2.158%
Gray	1	2.551%	Hopkins	4/5N	4.588%
Grayson	2/3	2.508%	Houston	4/5N	0.000%
Gregg	4/5N	3.636%	Howard	9/10	2.832%
Grimes	7	2.758%	Hudspeth	9/10	0.000%
Guadalupe	8	1.674%	Hunt	2/3	2.683%
Hale	1	4.082%	Hutchinson	1	4.361%
Hall	1	0.000%	Irion	9/10	0.000%
Hamilton	7	0.000%	Jack	2/3	0.000%
Hansford	1	0.000%	Jackson	8	2.312%
Hardeman	2/3	0.000%	Jasper	4/5N	0.817%
Hardin	6/5S	2.529%	Jeff Davis	9/10	0.000%
Harris	6/5S	2.365%	Jefferson	6/5S	2.867%
Harrison	4/5N	3.201%	Jim Hogg	11	0.000%
Hartley	1	0.000%	Jim Wells	11	0.777%
Haskell	2/3	0.000%	Johnson	2/3	3.256%
Hays	7	3.044%	Jones	2/3	2.974%
Hemphill	1	0.000%	Karnes	8	2.357%
Henderson	4/5N	1.744%	Kaufman	2/3	2.355%
Hidalgo	11	3.607%	Kendall	8	2.212%
Hill	7	2.420%	Kenedy	11	0.000%
Hockley	1	3.234%	Kent	2/3	3.815%

County	Region	Average Percent of All Visits that were CLI in 2020	County	Region	Average Percent of All Visits that were CLI in 2020
Kerr	8	0.000%	Marion	4/5N	2.027%
Kimble	9/10	0.000%	Martin	9/10	0.000%
King	1	0.000%	Mason	9/10	0.000%
Kinney	8	0.000%	Matagorda	6/5S	4.396%
Kleberg	11	0.763%	Maverick	8	5.315%
Knox	2/3	0.000%	McCulloch	9/10	2.872%
La Salle	8	0.000%	McLennan	7	1.901%
Lamar	4/5N	2.987%	McMullen	11	0.000%
Lamb	1	3.223%	Medina	8	2.351%
Lampasas	7	1.835%	Menard	9/10	0.000%
Lavaca	8	3.676%	Midland	9/10	0.942%
Lee	7	2.445%	Milam	7	2.050%
Leon	7	2.066%	Mills	7	0.000%
Liberty	6/5S	1.974%	Mitchell	2/3	2.044%
Limestone	7	2.756%	Montague	2/3	1.305%
Lipscomb	1	0.000%	Montgomery	6/5S	2.126%
Live Oak	11	2.054%	Moore	1	0.000%
Llano	7	1.235%	Morris	4/5N	2.128%
Loving	9/10	0.000%	Motley	1	0.000%
Lubbock	1	1.919%	Nacogdoches	4/5N	4.375%
Lynn	1	0.000%	Navarro	2/3	2.108%
Madison	7	2.230%	Newton	4/5N	0.898%

County	Region	Average Percent of All Visits that were CLI in 2020	County	Region	Average Percent of All Visits that were CLI in 2020
Nolan	2/3	0.561%	Robertson	7	2.970%
Nueces	11	1.885%	Rockwall	2/3	2.837%
Ochiltree	1	0.000%	Runnels	2/3	3.657%
Oldham	1	0.000%	Rusk	4/5N	2.165%
Orange	6/5S	2.757%	Sabine	4/5N	1.579%
Other	NA	2.382%	San Augustine	4/5N	2.895%
Palo Pinto	2/3	2.564%	San Jacinto	4/5N	1.877%
Panola	4/5N	1.815%	San Patricio	11	2.198%
Parker	2/3	2.898%	San Saba	7	0.000%
Parmer	1	5.507%	Schleicher	9/10	0.000%
Pecos	9/10	2.439%	Scurry	2/3	0.000%
Polk	4/5N	1.848%	Shackelford	2/3	0.000%
Potter	1	4.240%	Shelby	4/5N	3.875%
Presidio	9/10	0.000%	Sherman	1	0.000%
Rains	4/5N	3.830%	Smith	4/5N	3.018%
Randall	1	4.483%	Somervell	2/3	1.711%
Reagan	9/10	0.000%	Starr	11	3.131%
Real	8	0.000%	Stephens	2/3	0.599%
Red River	4/5N	2.299%	Sterling	9/10	0.000%
Reeves	9/10	0.000%	Stonewall	2/3	0.000%
Refugio	11	0.000%	Sutton	9/10	0.000%
Roberts	1	0.000%	Swisher	1	0.000%

County	Region	Average Percent of All Visits that were CLI in 2020	County	Region	Average Percent of All Visits that were CLI in 2020
Tarrant	2/3	3.142%	Ward	9/10	1.616%
Taylor	2/3	3.311%	Washington	7	2.203%
Terrell	9/10	0.000%	Webb	11	4.513%
Terry	1	0.000%	Wharton	6/5S	4.115%
Throckmorton	2/3	0.000%	Wheeler	1	0.000%
Titus	4/5N	3.083%	Wichita	2/3	2.728%
Tom Green	9/10	3.547%	Wilbarger	2/3	2.146%
Travis	7	2.809%	Willacy	11	3.009%
Trinity	4/5N	0.000%	Williamson	7	2.737%
Tyler	4/5N	0.758%	Wilson	8	3.176%
Upshur	4/5N	3.023%	Winkler	9/10	0.000%
Upton	9/10	0.000%	Wise	2/3	2.895%
Uvalde	8	4.110%	Wood	4/5N	3.120%
Val Verde	8	5.180%	Yoakum	1	0.000%
Van Zandt	4/5N	2.857%	Young	2/3	0.000%
Victoria	8	2.726%	Zapata	11	0.000%
Walker	6/5S	3.821%	Zavala	8	4.512%
Waller	6/5S	2.159%			