

Covid-19 in Iowa: County Weekly Rates

Covid-19¹ cases have increased in Iowa in recent weeks. Iowa surpassed 114,000 cases and more than 1,600 deaths through the week of October 23rd² (Table 1). Most counties are experiencing rising levels of cases as well (Table 2). This report reviews state and county levels of Covid-19 cases and rates in several of these recent weeks. The source of the information reviewed here is the Iowa Department of Public Health (IDPH).^{3,4}

As Covid-19 has spread throughout the state, Iowa's counties have experienced varying levels of cases. In general, counties with larger populations have a higher cumulative number of cases. Polk County is the state's largest with the city of Des Moines. Through October 23rd, Polk County had recorded

18,737 Covid-19 cases, the highest of any county and 16.4% of all cases in the state. In contrast, Adams County, the state's smallest, had a cumulative total of 79 cases, the smallest number for any county (Table 2).

Cumulative counts focus on the entire time frame since Covid-19 was first reported in Iowa in March. Cumulative numbers, however, can mask shorter-term increases. Recently, there has been increased concern as levels of cases have increased. Iowa's weekly cases rose from 6,297 during the week of September 19th to 8,316 for the week of October 23rd, the highest ever weekly count for Iowa (Tables 1, 2). Likewise, most counties were recording higher weekly totals late in October than at the end of September. County case counts for each of the four weeks from September 26th through October 23rd along with a four-week total are given in Table 2.

The increased cases noted during the month of October are concerning, but case numbers do not tell the whole story of Covid-19 spread. It is also important to analyze the cases with respect to population size. Using rates per population gives a picture of the magnitude of the cases with population taken into consideration and allows comparison of the rates across geographic areas that may differ significantly in population size.

The most frequently used rate for Covid-19 cases is that for cases per 100,000 population. For any given geographic area, the number of Covid-19 cases for that area is divided by the population and then multiplied by 100,000 to give a rate per 100,000 population. Based on a population estimate for Iowa of 3,155,070,⁵ the cumulative case rate/100,000 statewide for Iowa was 3,628 for the week ending October 23rd (Tables 1, 2). County cumulative rates/100,000 ranged from 1,268 (Jefferson County) to 11,442 (Buena Vista County) (Table 2). As of this writing, Iowa's cumulative case rate was the 4th highest among the states and Buena Vista's rate remains among the highest of any county in the nation.⁶

To better understand the trend of increases in recent weeks, county rates/100,000 for each of the individual weeks along with the summed four weeks from September 26th through October 23rd are shown in Figures 1 and 2 and reported in Tables 1 and 2. Iowa's

Figure 1. Weekly Rate of Covid-19 Cases / 100,000 Population, Iowa, 2020

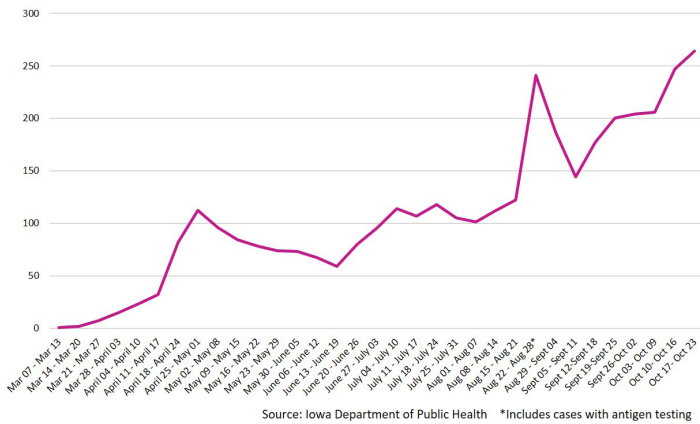
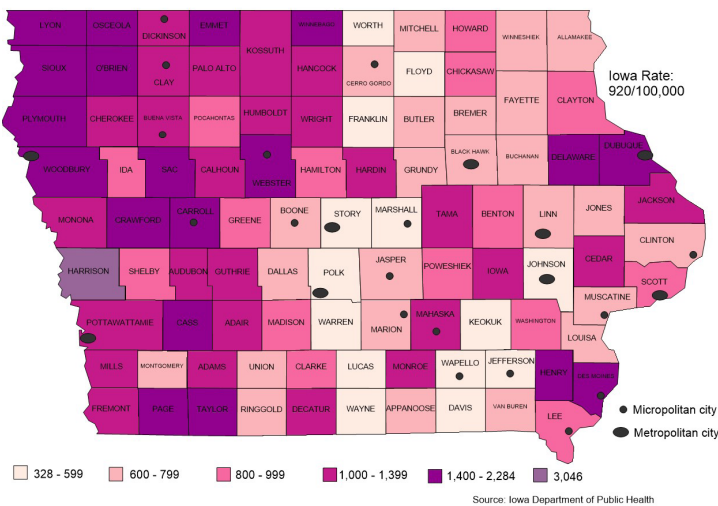


Figure 2. Four Week Rate of Covid-19 Cases/100,000 population, September 25 - October 23, 2020, Iowa



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rate/100,000 for each individual week since mid-September has gone from 177 to 264 (Figure 1, Table 1). The rates for the most recent two weeks reported here have been the highest statewide of any week.⁴

Using the rates for the summed four weeks taken together shows county rates varying significantly during that time. Although the state rate/100,000 for those combined four weeks was 920, the counties ranged from 328 (Franklin) to 3,046 (Harrison). From the map, it is apparent that many of the counties in the western half of Iowa are among those with the highest rates for those four weeks (Figure 2, Table 2).

Harrison County illustrates the need to use rates to fully understand the scope and spread of Covid-19. For the four weeks of September 26th through October 23rd, Polk County reported 2,920 cases and a rate of 596/100,000. Harrison County's cases (428) in that same time period were about 1/7th those of Polk County but yet had a rate about five times higher (3,046/100,000). It is the much smaller population of Harrison County (14,049) compared with that for Polk County (490,161)⁵ that gives the much higher rate of spread among the Harrison County residents. Small case counts in relatively rural counties can be deceiving in thinking that there is not much impact, but, in fact, rates based on population can be quite high in those counties even though the actual case numbers are relatively small (Table 2).

Additional information in Table 1 shows that as Covid-19 rates/100,000 have gone up, so also have the state's reported cumulative and weekly percentage positive rates based on testing (Table 1). The weekly percentage positive was 22% for the last week reported here, one of the highest positivity percentages for any week. Reported deaths have

Table 1. Cumulative and Weekly Covid-19 Cases, Rates/100,000 Population, Percent Positive, and Deaths, Iowa, 2020.¹

Week	Cumulative				Weekly			
	Cases	Rate/100,000 population ²	Percent Positive ³	Deaths	Cases	Rate/100,000 population ²	Percent Positive ³	Deaths
Mar 07 - Mar 13	15	0.5	36.7	0	15	0.5	36.7	0
Mar 14 - Mar 20	68	2	5.8	0	50	1.6	4.5	0
Mar 21 - Mar 27	298	9	6.4	3	230	7	6.6	3
Mar 28 - April 03	786	25	7.7	14	488	15	8.8	11
April 04 - April 10	1510	48	8.8	34	724	23	10.5	20
April 11 - April 17	2513	80	11.0	74	1003	32	17.2	40
April 18 - April 24	5092	161	14.8	112	2579	82	22.6	38
April 25 - May 01	8641	274	17.4	175	3549	112	23.1	63
May 02 - May 08	11671	370	16.3	252	3030	96	13.9	77
May 09 - May 15	14328	454	14.9	346	2657	84	10.7	94
May 16 - May 22	16795	532	13.6	444	2467	78	9.1	98
May 23 - May 29	19142	607	12.8	528	2347	74	8.9	84
May 30 - June 05	21438	679	11.6	598	2296	73	6.6	70
June 06 - June 12	23555	747	10.8	650	2117	67	6.2	52
June 13 - June 19	25424	806	10.2	681	1869	59	6.2	31
June 20 - June 26	27933	885	9.7	704	2509	80	6.4	23
June 27 - July 03	30923	980	9.4	721	2990	95	7.5	17
July 04 - July 10	34528	1094	9.4	748	3605	114	9.0	27
July 11 - July 17	37904	1201	9.4	787	3376	107	9.5	39
July 18 - July 24	41628	1319	9.3	826	3724	118	8.6	39
July 25 - July 31	44936	1424	9.4	872	3308	105	10.0	46
Aug 01 - Aug 07	48112	1525	9.3	925	3176	101	9.3	53
Aug 08 - Aug 14	51640	1637	9.3	973	3528	112	9.3	48
Aug 15 - Aug 21	55496	1759	9.4	1030	3856	122	10.0	57
Aug 22 - Aug 28*	63112	2000	10.1	1108	7616	241	22.5	78
Aug 29 - Sept 04	69006	2187	10.4	1160	5894	187	15.9	52
Sept 05 - Sept 11	73547	2331	10.6	1216	4541	144	13.8	56
Sept 12 - Sept 18	79128	2508	10.8	1264	5581	177	14.9	48
Sept 19 - Sept 25	85425	2708	11.1	1311	6297	200	15.9	47
Sept 26 - Oct 02	91861	2912	11.2	1377	6436	204	14.3	66
Oct 03 - Oct 09	98356	3117	11.5	1454	6495	206	16.7	77
Oct 10 - Oct 16	106147	3364	11.9	1526	7791	247	20.2	72
Oct 17 - Oct 23	114463	3628	12.3	1629	8316	264	22.0	103

¹Source: Iowa Department of Public Health; ²The rate/100,000 population is calculated by dividing the number of cases (cumulative or weekly) by the population estimate for 2019 and multiplying by 100,000; ³Percent positive is calculated by dividing the cases (cumulative total or weekly) by the number of tests (cumulative total or weekly) and multiplying the result by 100; ⁴On August 27th, the Iowa Department of Public Health added the cumulative positive Covid-19 cases identified by antigen testing (1,377) to the state cumulative Covid-19 total cases identified by PCR (polymerase chain reaction) testing. Before August 27th, the reported state positive totals were based only on PCR testing. The data reported here for the week of August 22-August 28 reflect the totals *with* the added antigen cases even though those cases were from many previous weeks and months, not from just that week.

also been higher in recent weeks. The week of October 23rd recorded the highest weekly deaths (103) of any week up to that time (Table 1).

As of this writing, Iowa's case numbers and rates continue to increase. There is not yet a sign that weekly cases and

rates are leveling off or reaching a plateau, let alone decreasing. Iowans may not yet be adhering adequately to Covid-19 safety guidelines³ that are needed in order to get the spread of the virus under better control in the state.

Table 2. Cumulative, Four Weeks (September 26 - October 23), and Weekly Covid-19 Cases and Rates/100,000 Population, Iowa, 2020.¹

County	Cumulative		Four Weeks Sept 26 - Oct 23		Weekly Number of Cases				Weekly Rate/100,000 Population ²			
	Cases	Rate/ 100,000 ²	Cases	Rate/ 100,000 ²	Sept 26 -	Oct 03 -	Oct 10 -	Oct 17 -	Sept 26 -	Oct 03 -	Oct 10 -	Oct 17 -
					Oct 02	Oct 09	Oct 16	Oct 23	Oct 02	Oct 09	Oct 16	Oct 23
Adair	155	2167	84	1174	5	18	26	35	70	252	364	489
Adams	79	2193	46	1277	6	13	11	16	167	361	305	444
Allamakee	358	2616	99	723	10	25	24	40	73	183	175	292
Appanoose	221	1779	85	684	13	24	22	26	105	193	177	209
Audubon	141	2566	59	1074	21	12	12	14	382	218	218	255
Benton	565	2203	256	998	50	41	86	79	195	160	335	308
Black Hawk	5498	4190	1016	774	142	234	273	367	108	178	208	280
Boone	709	2703	202	770	43	51	61	47	164	194	233	179
Bremer	660	2633	169	674	29	35	53	52	116	140	211	207
Buchanan	436	2059	161	760	38	29	43	51	179	137	203	241
Buena Vista	2245	11442	255	1300	52	82	66	55	265	418	336	280
Butler	362	2507	92	637	21	27	20	24	145	187	139	166
Calhoun	299	3093	116	1200	23	35	16	42	238	362	165	434
Carroll	1114	5524	454	2251	79	139	128	108	392	689	635	536
Cass	379	2953	216	1683	29	36	54	97	226	280	421	756
Cedar	444	2384	201	1079	31	25	40	105	166	134	215	564
Cerro Gordo	1351	3183	297	700	51	67	47	132	120	158	111	311
Cherokee	390	3471	141	1255	42	37	28	34	374	329	249	303
Chickasaw	345	2891	97	813	39	19	12	27	327	159	101	226
Clarke	342	3640	77	820	8	14	15	40	85	149	160	426
Clay	523	3265	200	1249	46	49	61	44	287	306	381	275
Clayton	405	2308	153	872	29	28	37	59	165	160	211	336
Clinton	1451	3125	335	722	65	68	83	119	140	146	179	256
Crawford	1350	8026	265	1576	62	74	78	51	369	440	464	303
Dallas	3413	3652	633	677	138	144	207	144	148	154	222	154
Davis	166	1844	42	467	7	12	10	13	78	133	111	144
Decatur	148	1881	81	1029	9	24	21	27	114	305	267	343
Delaware	759	4462	361	2122	96	62	109	94	564	364	641	553
Des Moines	1351	3467	573	1470	93	121	183	176	239	311	470	452
Dickinson	724	4195	200	1159	45	56	52	47	261	324	301	272
Dubuque	5075	5215	1872	1924	440	418	508	506	452	430	522	520
Emmet	423	4594	159	1727	28	46	50	35	304	500	543	380
Fayette	367	1868	148	753	28	35	47	38	142	178	239	193
Floyd	428	2736	81	518	27	14	23	17	173	90	147	109
Franklin	380	3774	33	328	8	6	6	13	79	60	60	129
Fremont	197	2830	82	1178	23	24	15	20	330	345	216	287
Greene	184	2070	83	934	24	23	21	15	270	259	236	169
Grundy	298	2436	79	646	19	16	21	23	155	131	172	188
Guthrie	383	3583	138	1291	42	37	34	25	393	346	318	234
Hamilton	464	3141	142	961	19	42	45	36	129	284	305	244
Hancock	309	2907	125	1176	28	31	25	41	263	292	235	386
Hardin	468	2778	169	1003	24	19	75	51	142	113	445	303
Harrison	643	4577	428	3046	95	125	112	96	676	890	797	683
Henry	1045	5237	303	1518	91	61	69	82	456	306	346	411
Howard	266	2905	79	863	9	13	31	26	98	142	339	284
Humboldt	319	3338	131	1371	13	42	34	42	136	439	356	439
Ida	187	2726	65	948	23	10	21	11	335	146	306	160
Iowa	394	2435	186	1149	39	60	61	26	241	371	377	161
Jackson	593	3051	248	1276	46	48	73	81	237	247	376	417
Jasper	1072	2883	236	635	68	52	53	63	183	140	143	169
Jefferson	232	1268	94	514	11	19	18	46	60	104	98	251
Johnson	5795	3834	681	451	137	182	161	201	91	120	107	133

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Table 2. Cumulative, Four Weeks (September 26 - October 23), and Weekly Covid-19 Cases and Rates/100,000 Population, Iowa, 2020. (cont)¹

County	Cumulative		Four Weeks Sept 26 - Oct 23		Weekly Number of Cases				Weekly Rate/100,000 Population ²			
	Cases	Rate/ 100,000 ²	Cases	Rate/ 100,000 ²	Sept 26 -	Oct 03 -	Oct 10 -	Oct 17 -	Sept 26 -	Oct 03 -	Oct 10 -	Oct 17 -
					Oct 02	Oct 09	Oct 16	Oct 23	Oct 02	Oct 09	Oct 16	Oct 23
Jones	431	2084	162	783	40	38	40	44	193	184	193	213
Keokuk	158	1542	49	478	16	5	6	22	156	49	59	215
Kossuth	455	3072	188	1269	45	57	42	44	304	385	284	297
Lee	939	2790	309	918	60	66	96	87	178	196	285	258
Linn	5401	2382	1412	623	346	282	319	465	153	124	141	205
Louisa	516	4676	87	788	13	15	27	32	118	136	245	290
Lucas	199	2314	43	500	4	4	15	20	47	47	174	233
Lyon	540	4594	218	1855	97	50	33	38	825	425	281	323
Madison	355	2173	138	845	44	34	40	20	269	208	245	122
Mahaska	677	3064	268	1213	38	55	93	82	172	249	421	371
Marion	981	2950	222	668	38	55	59	70	114	165	177	211
Marshall	1992	5060	212	538	46	35	53	78	117	89	135	198
Mills	381	2522	203	1344	41	53	51	58	271	351	338	384
Mitchell	261	2466	72	680	11	5	15	41	104	47	142	387
Monona	240	2786	88	1021	21	21	29	17	244	244	337	197
Monroe	258	3348	100	1298	6	27	42	25	78	350	545	324
Montgomery	165	1664	71	716	14	24	18	15	141	242	182	151
Muscatine	1417	3321	317	743	56	51	104	106	131	120	244	248
O'Brien	632	4595	259	1883	78	51	55	75	567	371	400	545
Osceola	269	4515	111	1863	24	24	37	26	403	403	621	436
Page	388	2568	233	1542	82	34	67	50	543	225	444	331
Palo Alto	310	3489	112	1260	31	27	24	30	349	304	270	338
Plymouth	1629	6470	497	1974	119	103	156	119	473	409	620	473
Pocahontas	219	3309	61	922	19	12	13	17	287	181	196	257
Polk	18737	3823	2920	596	604	554	816	946	123	113	166	193
Pottawattamie	3193	3426	1099	1179	220	288	298	293	236	309	320	314
Poweshiek	453	2448	159	859	50	37	33	39	270	200	178	211
Ringgold	88	1798	38	776	5	10	15	8	102	204	306	163
Sac	389	4002	139	1430	36	42	29	32	370	432	298	329
Scott	4411	2551	1427	825	288	235	419	485	167	136	242	280
Shelby	366	3195	101	882	17	24	29	31	148	210	253	271
Sioux	2390	6857	796	2284	254	187	230	125	729	537	660	359
Story	3965	4083	528	544	109	132	142	145	112	136	146	149
Tama	934	5542	221	1311	77	54	44	46	457	320	261	273
Taylor	231	3774	104	1699	32	36	23	13	523	588	376	212
Union	228	1863	97	792	21	26	27	23	172	212	221	188
Van Buren	170	2413	56	795	12	14	10	20	170	199	142	284
Wapello	1505	4304	177	506	44	43	47	43	126	123	134	123
Warren	1211	2353	257	499	40	41	93	83	78	80	181	161
Washington	645	2936	186	847	54	38	47	47	246	173	214	214
Wayne	117	1816	31	481	5	10	9	7	78	155	140	109
Webster	1823	5077	569	1585	134	158	115	162	373	440	320	451
Winnebago	473	4568	171	1652	35	24	50	62	338	232	483	599
Winneshiek	464	2321	129	645	15	28	44	42	75	140	220	210
Woodbury	7085	6872	1705	1654	498	419	404	384	483	406	392	372
Worth	141	1910	33	447	6	3	9	15	81	41	122	203
Wright	712	5668	130	1035	27	41	28	34	215	326	223	271
Range Lowest	79	1268	31	328	4	3	6	7	47	41	59	109
Range Highest	18737	11442	2920	3046	604	554	816	946	825	890	797	756
State of Iowa	114463	3628	29038	920	6436	6495	7791	8316	204	206	247	264

¹Source: Iowa Department of Public Health; ²The rate/100,000 population is calculated by dividing the number of cases (cumulative or weekly) by the population estimate for 2019 and multiplying by 100,000

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This report, others in the series, along with other information related to Covid-19 in Iowa and nationwide is available at:
<https://indicators.extension.iastate.edu/Indicators/COVID19/>

Notes

¹Coronavirus disease 2019 (COVID-19) is defined as illness caused by a novel coronavirus now called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV) <https://www.medscape.com/answers/2500114-197401/what-is-covid-19>

²Although cases, deaths, and hospitalized patients are reported on a daily basis, there are day-by-day variations in reporting that include weekends and holidays that make it useful to aggregate cases and reporting on a weekly basis to look at trends. The weeks reported here start with cases and tests reported for a Saturday and end with the reporting for the following Friday.

³Through the months that Covid-19 cases have been reported in Iowa, the Iowa Department of Public Health has utilized several methods of reporting the cases and testing in Iowa. These include press reports, web sites, data tables and files, mapping, and graphing. The data in this report have been gathered from a number of these methods. Several web sites directly from or affiliated with the Iowa Department of Public Health have been used. These include: <https://www.idph.iowa.gov/>; <https://idph.iowa.gov/Emerging-Health-Issues/Novel-Coronavirus>; <https://coronavirus.iowa.gov/>; <https://coronavirus.iowa.gov/pages/access>; <https://open-iowa.opendata.arcgis.com/datasets/ia-covid19-cases>

⁴On August 27, 2020, IDPH revised the reported statewide Covid-19 cases by adding an estimated cumulative 1,377 previous cases that had not been reported as positive cases. These cases were from many previous weeks and months, *not* from that current week. These cases came from an additional method of diagnosis using rapid antigen technology instead of the usual PCR (polymerase chain reaction) technology. The data reported here and in Table 1 for the week of August 22-August 28 reflect the totals *with* the added antigen cases even though those cases were from many previous weeks and months, not from just that week. These additional cases artificially inflate the case numbers and thus the rate/100,000 for that week. See <https://idph.iowa.gov/News/ArtMID/646/ArticleID/158374/IDPH-updates-COVID-19-antigen-test-results-following-increased-testing-volume-and-new-CDC-guidance>.

⁵U.S. Census Bureau, Population Estimates, <https://www.census.gov/programs-surveys/popest/data/tables.html>

⁶cited October 30 2020 at <https://www.cnn.com/interactive/2020/health/coronavirus-us-maps-and-cases/>

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