



GUAM COVID-19

Surveillance Report 12/10/2020 DPHSS - Office of Epidemiology and Research

Data on the daily and total number of COVID-19 cases are provided Monday through Friday except on holidays and are available on the DPHSS website:
<http://dphss.guam.gov/covid-19/>

Detailed data on cases, recent trends, case breakdown by age, sex, ethnicity, village, symptom onset and epi-links (household, workplace, community or healthcare), testing and data definitions are also available on the DPHSS COVID-19 dashboard. These reports are updated on Fridays.

This report covers data on COVID-19 cases from March 12, 2020 to December 4, 2020. There were 6,959 cases (6,827 probable and 132 confirmed) and 112 deaths during this time period. Data provided in this report include a summary of trends in GMHA hospitalizations and deaths.

The additional mortality analysis covers deaths with complete information from March 12-November 10, 2020. This report and the accompanying mortality analysis will be updated as time permits and death certificate information becomes available.

Table 1. Cases, GMHA hospitalized cases and deaths by age							
Age group	Number of cases	% of total cases	Cases per 100,000	GMHA hospitalized cases	% hospitalized	Deaths	Case fatality ratio (%)
0-9	402	5.8	1505.3	9	2.2	1	0.2
10-19	684	9.8	2515.8	13	1.9	0	0.0
20-29	1425	20.5	5280.5	54	3.8	1	0.1
30-39	1306	18.8	5990.6	77	5.9	7	0.5
40-49	1320	19.0	6626.8	96	7.3	10	0.8
50-59	1033	14.8	5145.2	152	14.7	28	2.7
60-69	540	7.8	3797.7	166	30.7	33	6.1
70-79	184	2.6	2361.1	68	37.0	21	11.4
80+	65	0.9	1788.7	41	63.1	11	16.9
Total	6,959	100%	4134.3	676	9.7	112	1.6

The majority of cases among those aged 20-59 (73.1%), with 15.6% among those under 20 years and 11.3% among those over the age of 60 years.

In contrast, the proportions of the cases that were hospitalized increase with age, particularly after age 60 years. Almost two-thirds of the cases aged over 80 years were hospitalized (63.1%), and 37% of those cases aged 70-79 years and 30.7 % of those cases between 60-69 years were hospitalized.

The case fatality ratio (i.e. the ratio of deaths to total cases) also increases among those in older age groups.

Therefore, while the majority of the confirmed COVID-19 cases were among younger people, older people are more likely to get hospitalized and/or die from COVID-19.

Table 2. Cases, GMHA hospitalization and deaths by sex							
Sex	Number of cases	% of total cases	Cases per 100,000	GMHA hospitalized cases	% hospitalized	Deaths	Case fatality ratio (%)
Female	2864	41.2	3440.0	315	11.0	46	1.6
Male	4095	58.8	4813.3	361	8.8	66	1.6
Total	6959	100%	4134.3	676	9.7	112	1.6

The rate of cases is highest among males while the rate of hospitalization is higher among females, however the case fatality ratio is the same for both sexes (1.6%).

Table 3. Cases, GMHA hospitalizations and deaths by ethnicity							
Ethnicity	Number of cases	% of total cases	Cases per 100,000	GMHA hospitalized cases	% cases hospitalized	Deaths	Case fatality ratio (%)
Chamorro	1765	25.4	2814.0	250	14.2	25	1.4
Filipino	1941	27.9	4381.2	154	7.9	26	1.3
Chuukese	980	14.1	8261.7	173	17.7	25	2.6
Other Pacific Islander	768	11.0	9122.2	46	6.0	12	1.6
Other Asian	235	3.4	2357.5	19	8.1	2	0.9
“White”	335	4.8	2801.5	20	6.0	3	0.9
Other	378	5.4	1980.0	14	3.7	4	1.1
Unknown	557	8.0	NA	NA	NA	15	NA
Total	6959	100%	4134.3	676	9.7	112	1.6

Chamorros and Chuukese have the highest proportions of cases who were hospitalized and Chuukese on Guam have the highest case fatality ratio among all ethnic groups.

Figure 1. Guam COVID-19 cases by symptom onset date

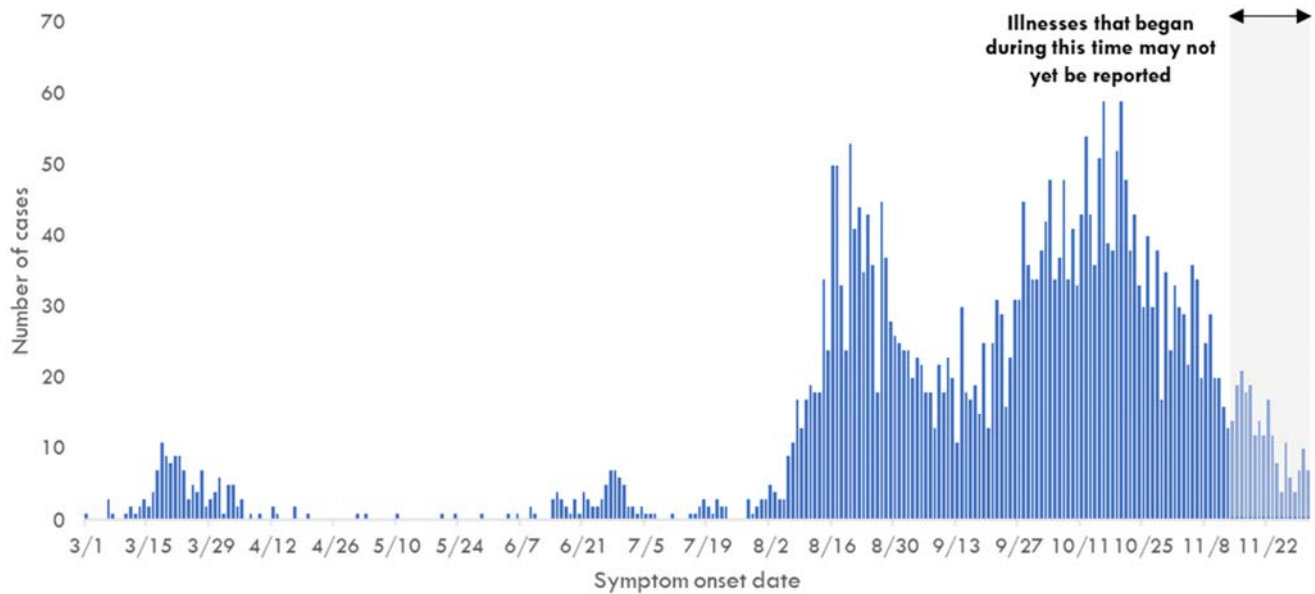
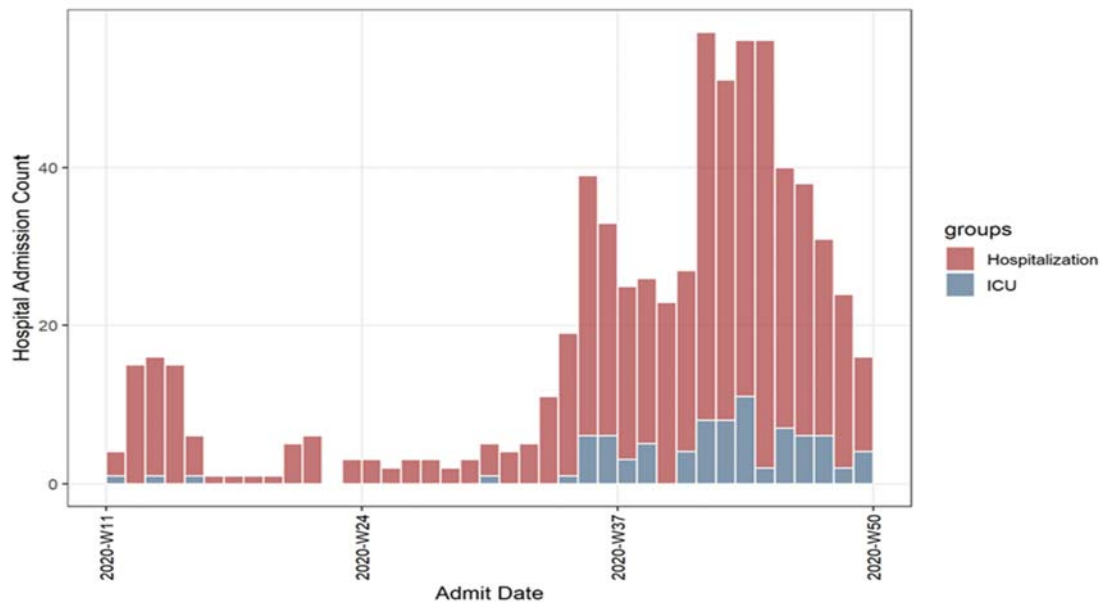


Figure 2. COVID-19 GMHA hospitalizations and ICU



The epidemic curve (Figure 1) and the GMHA COVID-19 hospitalizations and ICU (Figure 2) have a similar shape because hospitalizations and ICU for COVID-19 follow the surge(s) in COVID-19 cases.

Guam COVID-19 Related Mortality Analysis and Results From March 12-November 10, 2020

The Office of Epidemiology and research (OER) has been examining the patterns in COVID-19 deaths, particularly since the surge of cases and deaths since August 2020. There were only 5 deaths on Guam due to COVID-19 from March-July 2020, therefore, the vast majority of the deaths (95%) occurred in the past 3 + months.

U.S. data from the CDC show that people with underlying health conditions such as cancer, chronic kidney disease, chronic lung diseases, cardiovascular disease, immunocompromised conditions, obesity and severe obesity, smoking and diabetes, tend to be at higher risk for severe COVID-19-associated disease¹ (and/or mortality)² than people without such conditions.

Point in time mortality assessment/methodology:

All deaths with complete information from March 12 – November 10, 2020 were examined in this analysis. Deaths on Guam due to COVID-19 were examined based on information taken from the DPHSS case listing of positive cases, any notes from the hospital where the person died and the death certificate. Note there is a lag time from notification of the death to receipt of death certificate of approximately 2 weeks. Having the MD notes and DPHSS case listing, along with the death certificates results in additional relevant information.

Deaths [from March 12-November 10, 2020]	91
Information from death certificates	73
Information from MD notes from the hospital	46
Information DPHSS line list	59

Demographic characteristics of deaths:

A key risk factor for COVID-19 mortality is older age, with proportions of people over 40 years (33% of deaths) and elderly people over 60 years (59.3%) dying at higher proportions than younger people (7.7%). In contrast, more than one-half of confirmed cases (56.3%) are people under 40 years, and just under one-half (43.7%) among those over 40 years.

Age	Deaths	%	All cases	%
0-19 years	1	1.1	910	16.1%
20-39 years	6	6.6	2,273	40.2%
40-59 years	30	33.0	1,817	32.1%
60 + years	54	59.3	654	11.6%
TOTAL	91	100.0	5,654	100.0%

¹ <https://www.cdc.gov/mmwr/volumes/69/wr/mm6913e2.htm>

² <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html>

A risk marker for COVID-19 mortality is ethnicity. Chuukese comprise only 7.1% of Guam's population, but 16.4% of cases and 31.3% of COVID-19 deaths. Filipino's comprise 26.3% of Guam population, but are slightly more presented in cases (29.1%) and deaths (31.3%).

COVID-19 positive cases and deaths by known ethnicity as of November 10, 2020	# Cases (not deceased)	% (not deceased)	# deceased	% deceased	% of Guam population*
Native Hawaiian/ Pacific Islander - Chamorro	1,369	26.9	22	26.5	37.3
Native Hawaiian/ Pacific Islander - Chuukese	838	16.4	26	31.3	7.1
Native Hawaiian/ Pacific Islander - Other**	620	12.2	4	4.8	5.0
Asian-Filipino	1,483	29.1	26	31.3	26.3
Asian-Other***	164	3.2	1	1.2	5.9
European/White	306	6.0	2	2.4	7.1
Black/African American	11	0.2	1	1.2	1.0
All Others	306	6.0	2	2.4	10.3
Unknown (or blank)	465	NA	8	NA	NA
TOTAL	5,563	100.0%	91	100.0%	100.0
denominator used (less unknown ethnicity)	5,098		83		
* Tables 23-04 and 23-09, Guam Statistical Yearbook, 2018, pages 450 and 454. ** Includes Palauan, Pohnpeian, Carolinian and others. *** Includes Japanese, Korean, Asian Indian and others.					

A key risk factor for mortality on Guam is diabetes:

Among the 5,654 confirmed cases of COVID-19 on Guam up to 11/10/2020, 357 out of 5,088 with complete information (8.3%) had diabetes.

Among the deaths with complete information as of 11/10/2020, 41 out of 88 cases which had full information (53.4%) had diabetes. Many people who died have also had hypertension, CVD and/or ESRD.

CAUSES OF DEATH	All Causes of Death [can be numerous]	Chronic conditions from MD notes or line list
Respiratory [e.g. ARDS, respiratory failure, and pneumonia]	75	---
Cardiovascular [e.g. cardiac arrest, cardiopulmonary arrest]	22	26
Hypertension	17	49
Complications of COVID-19 infection	28	---
Diabetes mellitus (or complications)	20	43
Critical bleeding conditions	7	
Renal (kidney conditions), including ESRD	15	16
Multi-organ failure	5	---
Sepsis	4	---
Infections [e.g. bacteremia]	5	---
Morbid obesity	5	2
Tobacco	4	3
Cancer	1	6
Dementia	3	2
Chronic lung disease [e.g. COPD, asthma]	1	7
Other	6	7
DOA	1	---

Summary of findings from COVID-19 related death certificates, MD notes and DPHSS confirmed cases:

The vast majority of entries in the death certificates are for respiratory conditions for all cause(s) of death summarized [e.g. ARDS due to COVID-19, respiratory failure or pneumonia].

The second most common entries in the death certificates are for complications of COVID-19 infections, followed by cardiovascular diseases or events and hypertension.

The biggest risk factors observed for COVID-19 related deaths are diabetes and hypertension and/or cardiovascular disease, as well as renal diseases/EDRD, along with other chronic conditions.

There is not as much information on **tobacco** as contributory cause of death or on MD notes and DPHSS forms. People are either not admitting to current or former smoking or this is not being written on any notes/forms.

For more information on the mortality analysis, contact: Ann Pobutsky, PhD
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