

## Epidemiological update on COVID-19 situation in Nepal -- 12 June 2020 07:00 hours

### **Top line summary**

This detailed epidemiological update is based on 4604 cases of COVID-19 confirmed through RT-PCR. Core epidemiological variables for 10 confirmed cases are under process at this time. So far, more than 115,000 samples have been tested for COVID-19 through polymerase chain reaction (PCR).

### **Transmission pattern**

Repeated bolus influxes of migrant workers returning across the open southern border is driving current COVID-19 transmission in Nepal. Most of these workers are males in the economically productive age group and were working in Western India which has emerged as a high transmission zone for COVID-19. The total count of cases is increasing rapidly driven mainly by these large influxes of returnees and is expected to rise even further as more migrant Nepalese workers will be returning across the southern border in coming days to weeks.

However, there are some cases without a clear travel history or contact with persons with a travel history and some evidence of community transmission is emerging although it is still in a few clusters. . In this week's update we have included additional weekly analyses of sex distribution of confirmed COVID-19 cases as a surrogate indicator to explore evidence of community transmission.

New districts in the mountain regions are being affected indicating that some amount of community transmission might have started, which is being investigated.

So far, aggressive testing albeit with significant scope for strategic improvement, has helped identify and confine the transmission among returnees but testing capacity as well as isolation and quarantine facilities and contact tracing mechanisms are being stretched to the limit.

### **Deaths**

Fifteen persons (two female) who tested positive for COVID-19 have died. Of these, nine persons had one or more co-morbid conditions and three persons were above 65 years of age while one was a child of two years.

## COVID-19 update

- The COVID-19 pandemic with more than 7 million cases and more than 400,000 deaths globally (<https://www.worldometers.info/coronavirus/#countries> accessed on 12 June 2020) has become an unprecedented public health challenge for all countries.
- As of date, Nepal has confirmed 4614 cases through PCR and fifteen deaths. This report is based on 4604 cases for which core data is available.
- All seven provinces and 72 out of 77 districts are now affected. All provinces reported at least one confirmed case this week. All districts of province 2, province-5 and Sudurpaschim have reported at least one confirmed case of COVID-19.

Summary of laboratory-confirmed COVID-19 cases, deaths and transmission by province					
Transmission classification based on <a href="#">WHO definitions</a>					
Reporting Province	Total confirmed cumulative cases	Total cumulative deaths	Transmission classification*	District affected (total districts)	Date of most recent case <sup>#</sup>
Province 1	306	0	Cluster of cases	13 (14)	11-Jun-2020
Province 2	1677	1	Cluster of cases	8 (8)	11-Jun-2020
Bagmati	144	4	Sporadic cases	12 (13)	11-Jun-2020
Gandaki	150	1	Sporadic cases	9 (11)	10-Jun-2020
Province 5	1381	4	Cluster of cases	12 (12)	11-Jun-2020
Karnali	756	3	Cluster of cases	9 (10)	11-Jun-2020
Sudurpaschim	190	2	Sporadic cases	9 (9)	11-Jun-2020
<b>National Total</b>	<b>4604</b>	<b>15</b>		<b>72 (77)</b>	<b>11-Jun-2020</b>

# - Date of last case is the date of onset or date of sample collection or date of lab report based on information available.  
 \*Case classification is based on [WHO transmission classification](#)  
**No cases**- provinces with no cases  
**Sporadic cases**- provinces with one or more cases, imported or locally detected  
**Cluster of cases**- provinces experiencing cases, clustered in time, geographic location and/or by common exposures  
**Community transmission**- experiencing larger outbreaks of local transmission defined through an assessment of factors including, but not limited to:  
 - Large numbers of cases not linkable to transmission chains  
 - Large numbers of cases from sentinel lab surveillance  
 - Multiple unrelated clusters in several areas of the country/territory/area

• All data are provisional  
 • Data updated till 12 Jun 2020 Time 07:00:00

Table 1: Nepal COVID-19 cases by province and districts affected with date of last case

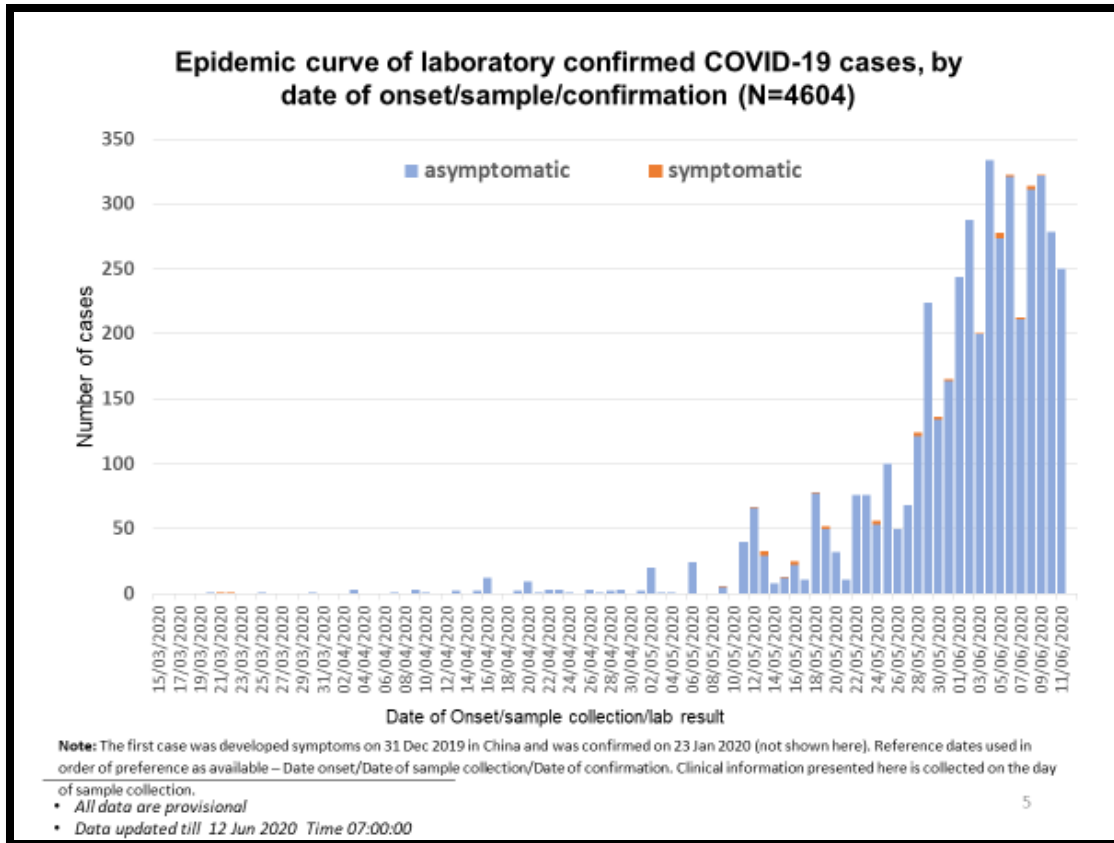


Figure 1: COVID-19 daily incident cases by symptom at presentation

- Nearly two months after the first case, from 20 March 2020 and thereafter, sporadic cases started occurring in Nepal as confirmed at the National Public Health Laboratory (NPHL), Nepal. [Figure 1 ]
- Government of Nepal announced nationwide lockdown from 24 March 2020 and commercial domestic flights were suspended. Commercial International flights were suspended from 23 March 2020. These flights remain suspended at the time of writing.
- Until mid-April confirmed COVID-19 (PCR positive) cases were detected sporadically but they were largely confined to persons returning or visiting from foreign countries.
- Starting third week of April (week 16) and later, clusters of cases were detected. Initially in province-1 (at Udaipur – 28 cases) and in province-2 (Bara, Parsa and Rautahat – 2 each). Other than Rautahat, these clusters were associated with community religious events or congregations in India and Nepal.
- India closed India Nepal borders on 16 March 2020. From around 10 May 2020, as the national lock down in India was gradually being relaxed (lockdown started on 23 March), number of returnees crossing the southern border increased and many cases were confirmed amongst these returnees mainly in province 2 and province 5.
- Of late, Karnali province has also shown a very sharp increase in COVID-19 cases in returnees.
- **The returning migrant workers and their accompanying family members have been confined to quarantine centres and those testing positive were initially isolated in border municipalities and districts thus effectively preventing widespread community transmission to other**

municipalities inside the country. However, later with increasing number of returnees Nepalese citizens returning from India were sent to quarantine and/or isolation centres located in their municipalities of origin.

- If proper infection prevention and control protocols are not followed in these quarantine or isolation centres there is a real risk of spread of infection to health care workers and community through these infective persons who are now spread across the country.
- Aggressive testing irrespective of symptoms in such high-risk groups and locations has played a part in the prevention of apparent seeding of infection. More than 115,000 PCR tests have been conducted. [<https://covid19.mohp.gov.np/#/> accessed on 12 June 2020 0800]
- This staccato step-wise progression of case counts is still largely driven by large number of imported cases detected amongst returning migrant workers through the testing mechanism deployed. Many of them were residing in the western part of India which has turned out to be a high transmission zone of community wide transmission of COVID-19 and were presumably infected there. [Figure 2 and Figure 3]
- The increase in the number of positive cases and their profile reflects mainly the testing approach, i.e. the targeting of recently arrived returnees from India.

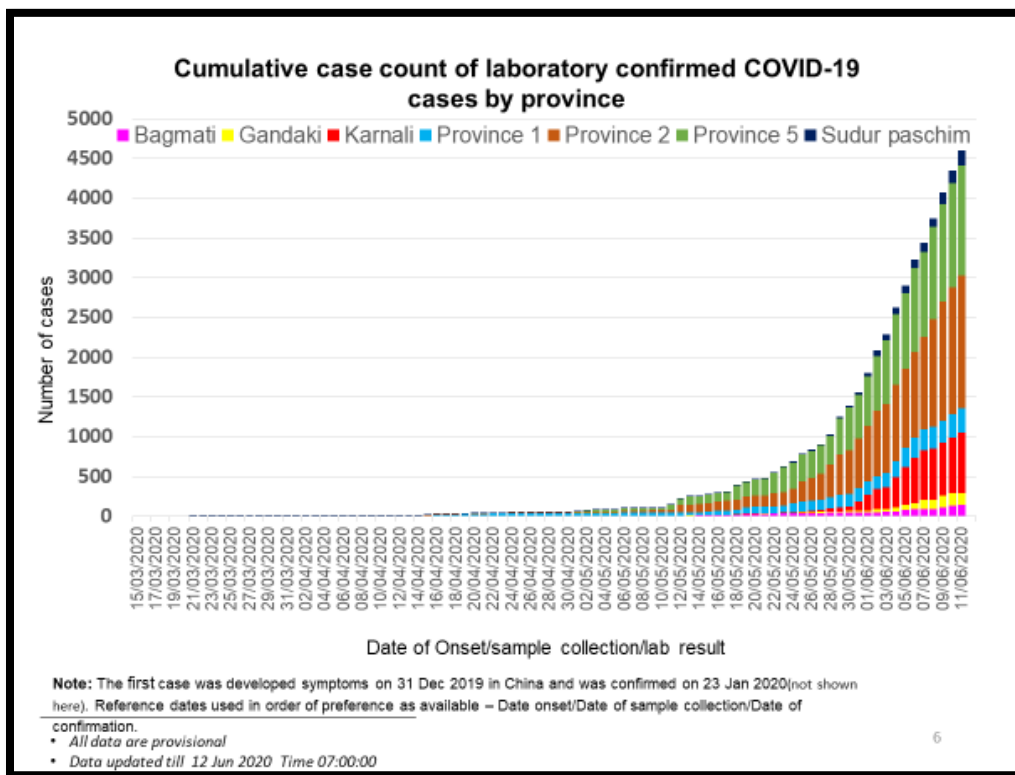


Figure 2: Cumulative incidence of COVID-19 confirmed cases by province

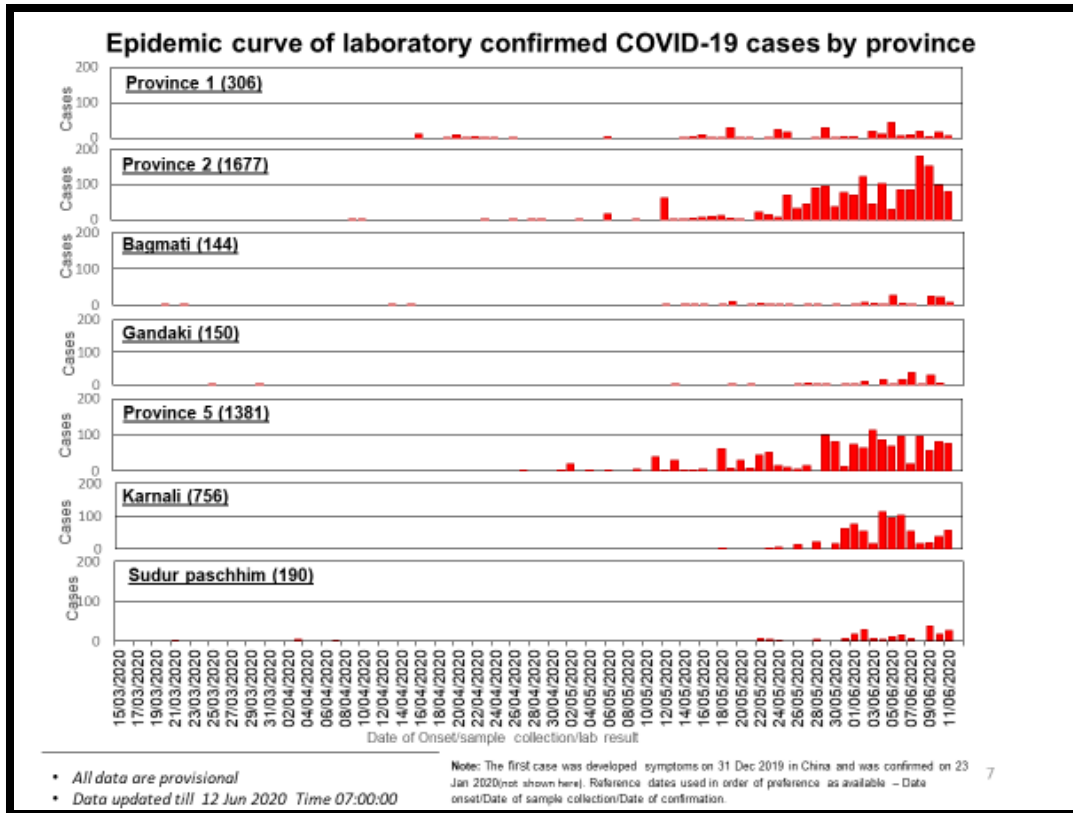


Figure 3: Province wise epi-curve of confirmed COVID-19 cases

- The geographic distribution shown below demonstrates clustering within some municipalities. [Figure 4]
- In the map each dot representing a confirmed case is placed randomly within municipal boundaries where the case was identified.
- A district is shaded whenever at least one confirmed case is reported from any one municipality within the district.
- The spatial distribution of cases is therefore still clustered within a few municipalities, rather than being widespread across the districts.
- The age sex distribution is highly skewed towards males, who constitute 93% of the confirmed cases. Of the males, 94% are in 15-54-year age group, indicating that these large increases in confirmed cases are occurring because of large groups of infected migrant workers (who are predominantly males in economically productive age group) returning to Nepal. [Figure 5]

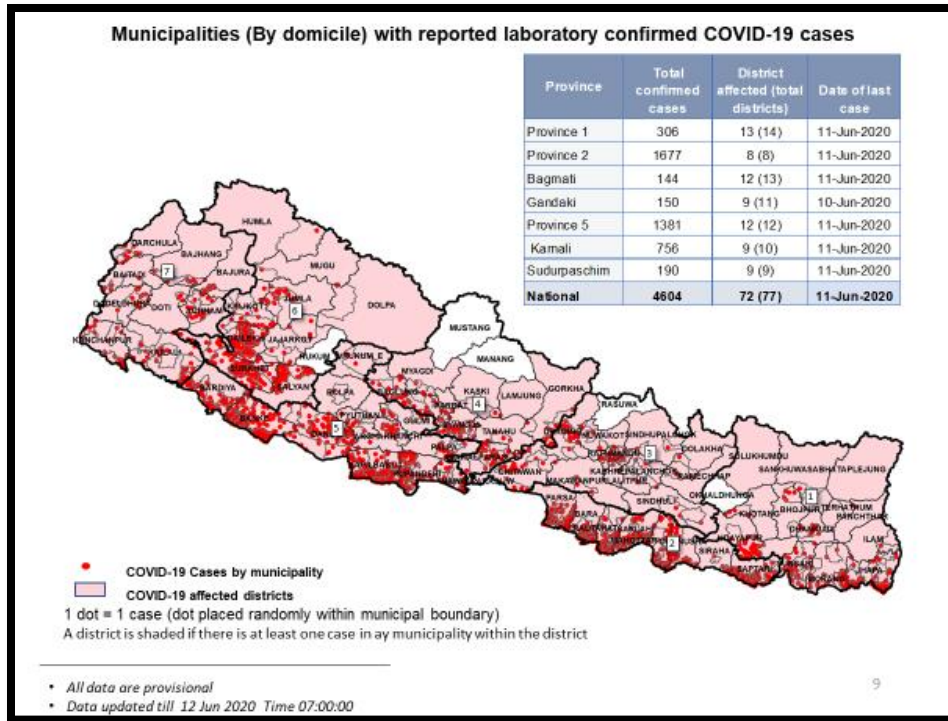


Figure 4: Geographic distribution of cases by place of confirmation or residence

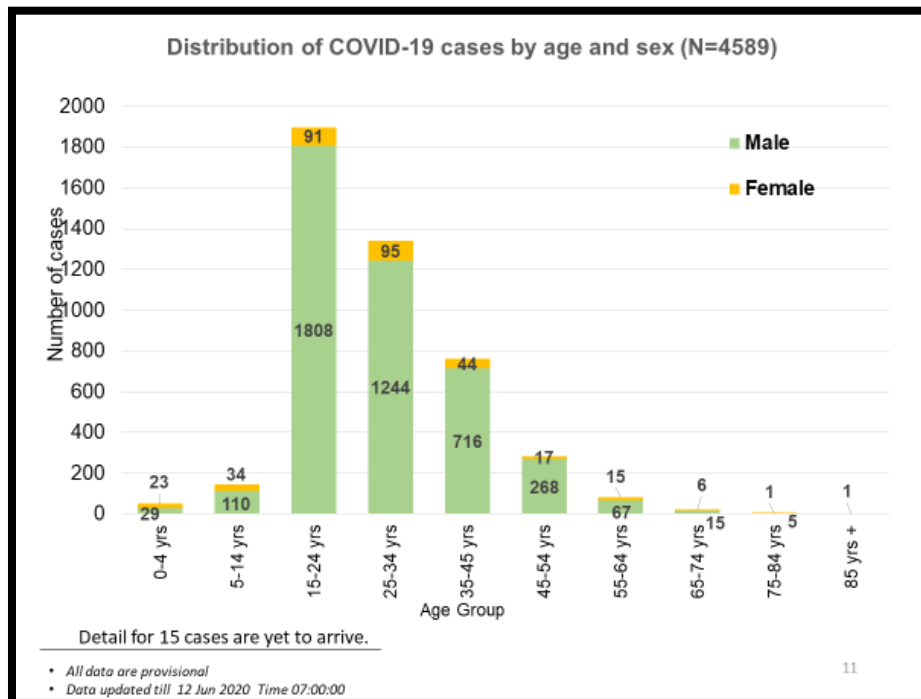


Figure 5: Age-sex distribution of confirmed COVID-19 cases

## Has community transmission of COVID-19 started in Nepal?

- Reports coming in from the field through several case investigations show that the spurt of confirmed cases beginning mid-May is mostly in returning migrant workers.
- This is also supported by the fact that COVID-19 transmission in Nepal is still confined to males (>90%) and in the economically productive age group – typically the age-sex distribution one would expect to find among migrant workers.
- Ideally, case level data with returnee/non-returnee status should be able to answer this question. Surveillance system is trying to collect such case level data.
- Meanwhile, we explored from available data if this male preponderance has changed in recent weeks (week 20-24) which could plausibly indicate a change in transmission dynamics driven by imported cases, to a transmission dynamics that is occurring among resident population within the country.

province	Sex	Week 4-19	Week 20-24 (partial)	Total
<b>Province 1</b>	Female	7	13	20
	Male	28	258	286
<b>Province 1 Total</b>		<b>35</b>	<b>271</b>	<b>306</b>
<b>Per cent male</b>		<b>80%</b>	<b>95%</b>	<b>93%</b>
<b>Province 2</b>	<b>Female</b>	<b>7</b>	<b>75</b>	<b>82</b>
	<b>Male</b>	<b>25</b>	<b>1570</b>	<b>1595</b>
<b>Province 2 Total</b>		<b>32</b>	<b>1645</b>	<b>1677</b>
<b>Per cent male</b>		<b>78%</b>	<b>95%</b>	<b>95%</b>
<b>Bagmati</b>	Female	3	35	38
	Male	4	102	106
<b>Bagmati Total</b>		<b>7</b>	<b>137</b>	<b>144</b>
<b>Per cent male</b>		<b>57%</b>	<b>74%</b>	<b>74%</b>
<b>Gandaki</b>	Female	2	4	6
	Male	0	144	144
<b>Gandaki Total</b>		<b>2</b>	<b>148</b>	<b>150</b>
<b>Per cent male</b>		<b>0%</b>	<b>97%</b>	<b>96%</b>
<b>Province 5</b>	Female	11	90	101
	Male	20	1260	1280
<b>Province 5 Total</b>		<b>31</b>	<b>1350</b>	<b>1381</b>
<b>Per cent male</b>		<b>65%</b>	<b>93%</b>	<b>93%</b>
<b>Karnali</b>	Female	0	51	51
	Male	0	705	705
<b>Karnali Total</b>		<b>0</b>	<b>756</b>	<b>756</b>
<b>Per cent male</b>			<b>93%</b>	<b>93%</b>

province	Sex	Week 4-19	Week 20-24 (partial)	Total
<b>Sudur paschim</b>	Female	2	28	30
	Male	3	157	160
<b>Sudur paschim Total</b>			5	185
<b>Per cent male</b>		60%	85%	<b>84%</b>
<b>National</b>	Female	32	296	328
	Male	80	4196	4276
<b>National Total</b>		112	4492	<b>4604</b>
<b>Per cent male</b>		71%	93%	<b>93%</b>

- Using this surrogate indicator of per cent ales among COVID-19 cases, the proportion of males have increased in week 20-24 compared to week 4-19 from 71% to 93% including Bagmati province (57% to 74%).
- While individual travel status can give the final answer, this high male preponderance indicates that restriction is possibly still restricted among returning migrant workers.



- Currently, all PCR positive cases irrespective of presence or absence of symptoms are isolated in designated hospitals for a period of at least 14 days.
- They are discharged on clinical recovery if symptomatic or after 14 days of isolation.
- 523 persons have “recovered” / discharged, and 15 persons have died. [Figure 6]

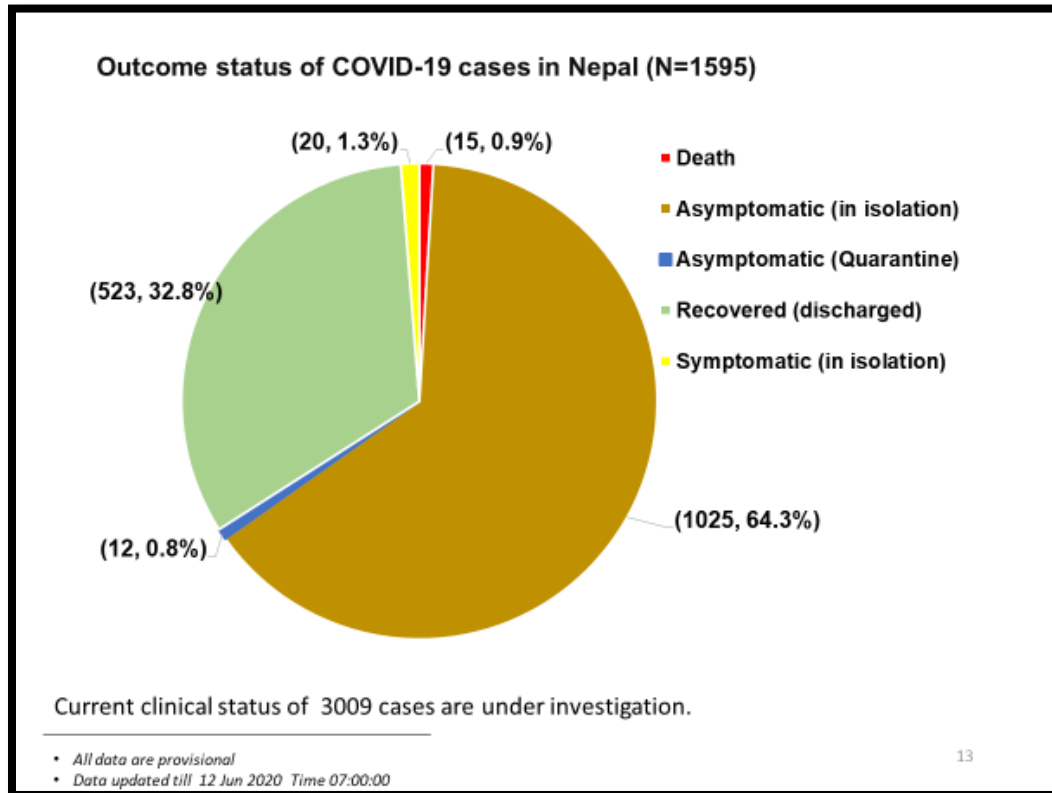


Figure 6: outcome status of confirmed COVID-19 cases

### Deaths associated with COVID-19

Fifteen persons (two female) who tested positive for COVID-19 have died. Of these, nine persons had one or more co-morbid conditions and three persons were above 65 years of age while one was a child of two years.

**Age-specific case fatality ratio and comorbidity of deaths\* in COVID-19 confirmed cases (N=4604)**

Age Group	Total confirmed cases	Death (male)	Death (female)	Deaths with any known comorbid condition	Age specific case fatality ratio (%)
0-4 yrs	52	0	1	0	1.92
5-14 yrs	144	0	0	0	0
15-24 yrs	1899	1	0	1	0.05
25-34 yrs	1339	1	1	1	0.15
35-44 yrs	760	3	0	1	0.39
45-54 yrs	285	1	0	0	0.35
55-64 yrs	82	4	0	3	4.88
65-74 yrs	21	2	0	2	9.52
75-84 yrs	6	1	0	1	16.67
85 yrs and above	1	0	0	0	0
Unknown	15	0	0	0	0
<b>Grand Total</b>	<b>4604</b>	<b>13</b>	<b>2</b>	<b>9</b>	<b>0.33</b>

*COVID-19 positive lab result is temporally associated with death; causal association under investigation.*

\* Source: <https://covid19.mohp.gov.np/#/>

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*Figure 7: Age-specific case fatality ratios in lab confirmed COVID-19 cases*