

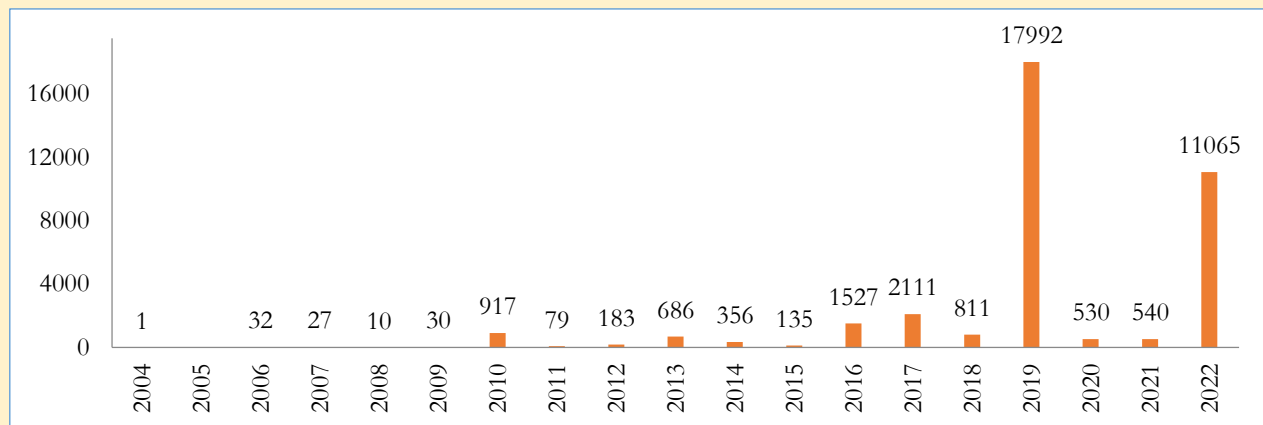


## Situation update of Dengue 2022 (As of 13<sup>th</sup> Sept,2022)

Dengue is a viral infection transmitted to humans through the bite of infected *Aedes* mosquitoes. Dengue is widespread throughout the tropics, with local variations in risk influenced by climate parameters as well as social and environmental factors. Dengue is caused by a virus of the Flaviviridae family and there are four distinct, but closely related, serotypes of the virus that cause dengue (DENV-1, DENV-2, DENV-3 and DENV-4). Recovery from infection is believed to provide lifelong immunity against that serotype. However, cross-immunity to the other serotypes after recovery is only partial, and temporary. Subsequent infections (secondary infection) by other serotypes increase the risk of developing severe dengue (WHO, 2022).

In Nepal, dengue is a rapidly emerging disease. Endemic across most provinces, dengue incidence has increased in recent years largely due to expansion of the vector *Aedes aegypti* and *Aedes albopictus*, as well as the movement of people and the introduction of imported cases. All 4 dengue serotypes exist in Nepal, with DENV-1 and 2 historically contributing the highest burden (EDCD, 2019).

Figure 1: Trend of dengue cases in Nepal (2004-2022) (Source: EDCD)



The first case of dengue in Nepal was reported in 2004. Since, then dengue cases have been gradually reported in Nepal (**Figure 1**). In 2019, there was an outbreak in Nepal with a total of 17,992 reported dengue cases from 68 districts: comprising all seven Provinces. The major outbreaks were in Sunsari District comprised (3431) followed by Chitwan (3402), Kaski (2824), Kathmandu (1589), Lalitpur (596) and Jhapa (525). There were six death case reported from five districts of Nepal (2 deaths in Chitwan, and one each death in Sunsari, Sindhupalanchok, Kathmandu and Doti) in the 2019.



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As of 13<sup>th</sup> September 2022, a total of 11065 dengue cases have been identified, with Bagmati province reporting highest number followed by Lumbini province. As seen in the **Table 1**, the increment in cases aligns with the rainy season with cases peaking in each province. The majority of cases (**10900, 98.5 %**) have been reported during the same time period (**June to Sept**). In case of Nepal, there is a dengue outbreak, usually in an interval of 2-3 years, and the same data trend is being observed in this year as of now.

*Table 1: Number of Dengue cases by Provinces (2022, EWARS and district line list)*

Dengue Cases As Of 13 Sept 2022										
	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Total
Province 1	2	0	1	2	3	18	47	136	138	<b>347</b>
Madhsesh Province	1	0	1	0	5	5	4	51	131	<b>198</b>
Bagmati Province	0	1	1	1	1	38	427	2899	5022	<b>8390</b>
Gandaki Province	0	0	0	3	1	3	28	56	133	<b>224</b>
Lumbini Province	2	2	11	8	9	19	192	496	682	<b>1421</b>
Karnali Province	1	0	0	3	2	2	9	13	132	<b>162</b>
Sudhur Paschim	5	0	1	1	4	8	13	57	234	<b>323</b>
Total	<b>11</b>	<b>3</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>93</b>	<b>720</b>	<b>3708</b>	<b>6472</b>	<b>11065</b>

The top 10 districts have reported the highest number of cases (**9226, 83%**), with sporadic cases reported from other districts, as highlighted in Table 3. Out of the top 10 districts reporting dengue cases, the highest numbers of cases are being reported from **Lalitpur (3793)**, **Kathmandu (2569)**, and **Makwanpur (1112)**, **Rupandehi (594)** as shown in Table 2. **Till date, 9 deaths due to dengue are verified.**

*Table 2: Top 10 districts reporting dengue cases by months (2022, EWARS and District line list)*

Districts	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Grand Total
<b>308 LALITPUR</b>	0	0	0	0	0	1	99	1558	2135	3793
<b>306 KATHMANDU</b>	0	0	0	0	1	1	35	727	1805	2569
<b>312 MAKWANPUR</b>	0	0	0	0	0	0	221	337	554	1112
<b>508 RUPANDEHI</b>	1	0	2	1	0	7	109	315	159	594
<b>510 DANG</b>	0	0	0	0	1	1	5	19	352	378
<b>307 BHAKTAPUR</b>	0	0	0	0	0	0	6	86	128	220
<b>313 CHITAWAN</b>	0	0	0	0	0	3	4	24	148	179
<b>304 DHADING</b>	0	0	0	0	0	32	24	54	30	140
<b>309 KAVREPALANCHOK</b>	0	0	0	0	0	0	5	29	95	129
<b>108 TERHATHUM</b>	0	0	0	0	0	0	0	88	24	112
	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>45</b>	<b>508</b>	<b>3237</b>	<b>5430</b>	<b>9226</b>



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### Intervention conducted in response to dengue

- ✓ EDCD conducted a virtual interaction meeting with provinces, districts and local levels to discuss on the current situation, responses from districts and local level and possible coordinated efforts to curve the increasing cases of dengue.
- ✓ For the response of dengue, EDCD has allocated budget for 139 palikas, 60 districts and all 7 provinces for 'search and destroy' to control the dengue. Moreover, EDCD has allocated budget to conduct stakeholders meeting for advocacy on dengue prevention during the peak month on same palika, districts and provinces.
- ✓ EDCD conducted a stakeholder meeting with hotel association of Nepal as well as school association as a preparation of outbreak especially in schools and hotels.
- ✓ EDCD has developed the dengue prevention and control flyer in coordination with NHEICC.
- ✓ Some provinces and districts are conducting the advocacy/public message through social media for dengue control and prevention among general public.
- ✓ EDCD is coordinating with districts as well as provinces who are reporting higher number of cases for the control of dengue. However, the penetration at local level needs improvement for control of dengue in Nepal
- ✓ EDCD is providing dengue test diagnostic kits to provinces and districts as per their request and availability in EDCD store.
- ✓ In last week of August, District health office, Lalitpur and Kathmandu started mass dengue search and destroy campaign as well as awareness activities in close collaboration with the metropolitan city/wards.
- ✓ In last week of August, the Kathmandu Metropolitan city conducted the ward levels meeting (1-32 wards) with health worker and stakeholders at district coordination office, Babarmahal, Kathmandu.
- ✓ Regular update and sharing of the information regarding current cases and deaths due to dengue with all officials (MoHP, DoHS, province, districts and palikas)
- ✓ EDCD is in regular consultation with technical experts for dengue response (prevention efforts, vector surveillance, and advocacy) to curtail the surge of disease.
- ✓ A joint meeting among MoHP, EDCD and hub hospitals was conducted to share the situation update, ongoing intervention and outbreak preparedness.
- ✓ EDCD conducted an interaction meeting with elected officials of Kathmandu districts, health coordinators, with focus on sensitizing on dengue prevention and control efforts in Kathmandu districts.
- ✓ EDCD conducted technical orientation program with physicians/Medical officers all over the country to sensitize physicians on proper case management of dengue, referral and support in surveillance system. Over 105 doctors joined virtually from all over the country and 40 doctors joined physically in the program.
- ✓ **Today**, EDCD conducted technical orientation program with physicians/Medical officers all over the country to sensitize physicians on proper case management of dengue, referral and support in surveillance system. Over 120 doctors joined virtually from all over the country and 25 doctors joined physically in the program.



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Summary Of Dengue Reported Cases Based On EWARS Reporting											
01 Jan - 13 Sept 2022											
Province	Districts	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Grand Total
1	101 Taplejung	0	0	0	0	0	0	0	0	3	3
1	102 SANKHUWASABHA	0	0	0	1	0	11	30	15	14	71
1	103 SOLUKHUMBU	0	0	0	0	0	0	0	2	1	3
1	104 OKHALDHUNGA	0	0	0	0	0	1	3	4	9	17
1	105 KHOTANG	0	0	0	0	1	0	0	2	16	19
1	106 BHOJPUR	0	0	0	0	0	2	7	3	12	24
1	107 DHANKUTA	0	0	0	0	0	0	0	4	3	7
1	108 TERHATHUM	0	0	0	0	0	0	0	88	24	112
1	109 PANCHTHAR	0	0	0	0	0	0	0	1	6	7
1	110 ILAM	0	0	0	0	1	0	1	2	3	7
1	111 JHAPA	1	0	1	0	1	1	2	5	16	27
1	112 MORANG	1	0	0	1	0	3	2	3	12	22
1	113 SUNSARI	0	0	0	0	0	0	2	4	11	17
1	114 UDAYAPUR	0	0	0	0	0	0	0	3	8	11
2	201 SAPTARI	0	0	0	0	0	0	0	3	7	10
2	202 SIRAHA	0	0	0	0	0	1	0	5	8	14
2	203 DHANUSA	0	0	1	0	0	0	0	2	8	11
2	204 MAHOTTARI	0	0	0	0	0	0	0	5	17	22
2	205 SARLAHI	0	0	0	0	2	1	1	19	37	60
2	206 RAUTAHAT	0	0	0	0	1	0	2	5	21	29
2	207 BARA	1	0	0	0	2	0	0	9	18	30
2	208 PARSA	0	0	0	0	0	3	1	3	15	22
3	301 DOLAKHA	0	0	0	0	0	0	0	10	30	40
3	302 SINDHUPALCHOK	0	0	0	0	0	0	0	7	29	36
3	303 RASUWA	0	0	0	0	0	0	0	0	2	2
3	304 DHADING	0	0	0	0	0	32	24	54	30	140
3	305 NUWAKOT	0	0	0	0	0	0	2	12	28	42
3	306 KATHMANDU	0	0	0	0	1	1	35	727	1805	2569
3	307 BHAKTAPUR	0	0	0	0	0	0	6	86	128	220
3	308 LALITPUR	0	0	0	0	0	1	99	1558	2135	3793
3	309 KAVREPALANCHOK	0	0	0	0	0	0	5	29	95	129
3	310 RAMECHHAP	0	1	1	1	0	0	4	17	21	45
3	311 SINDHULI	0	0	0	0	0	1	27	38	17	83
3	312 MAKWANPUR	0	0	0	0	0	0	221	337	554	1112
3	313 CHITAWAN	0	0	0	0	0	3	4	24	148	179
4	401 GORKHA	0	0	0	0	0	1	2	9	33	45
4	402 MANANG	0	0	0	0	0	0	0	1	2	3
4	404 MYAGDI	0	0	0	1	0	0	1	1	4	7
4	405 KASKI	0	0	0	1	0	0	3	6	26	36
4	406 LAMJUNG	0	0	0	1	0	2	8	6	3	20
4	407 TANAHU	0	0	0	0	0	0	2	1	4	7
4	408 NAWALPARASI EAST	0	0	0	0	0	0	2	12	12	26
4	409 SYANGJA	0	0	0	0	0	0	1	5	13	19



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4	410 PARBAT	0	0	0	0	1	0	3	3	20	27
4	411 BAGLUNG	0	0	0	0	0	0	6	12	16	34
5	501 RUKUM EAST	0	0	0	0	0	0	2	3	8	13
5	502 ROLPA	0	0	0	0	0	0	0	2	2	4
5	503 PYUTHAN	1	0	0	0	0	1	6	6	8	22
5	504 GULMI	0	0	0	0	2	3	17	33	30	85
5	505 ARGHAKHANCHI	0	0	0	1	0	1	13	36	29	80
5	506 PALPA	0	1	1	2	0	3	12	26	32	77
5	507 NAWALPARASI WEST	0	0	0	0	0	1	16	23	14	54
5	508 RUPANDEHI	1	0	2	1	0	7	109	315	159	594
5	509 KAPILBASTU	0	0	1	0	0	2	6	21	13	43
5	510 DANG	0	0	0	0	1	1	5	19	352	378
5	511 BANKE	0	1	0	0	0	0	2	6	10	19
5	512 BARDIYA	0	0	7	4	6	0	4	6	25	52
6	601 DOLPA	0	0	0	0	0	0	0	1	0	1
6	602MUGU	0	0	0	0	0	0	0	1	2	3
6	604 JUMLA	1	0	0	0	0	0	6	6	4	17
6	605 KALIKOT	0	0	0	0	0	1	0	0	2	3
6	606 DAILEKH	0	0	0	0	0	0	1	1	3	5
6	607 JAJARKOT	0	0	0	0	0	1	0	0	0	1
6	608 RUKUM WEST	0	0	0	0	0	0	1	3	5	9
6	609 SALYAN	0	0	0	0	0	0	1	0	14	15
6	610 SURKHET	0	0	0	3	2	0	0	1	102	108
7	701 BAJURA	0	0	0	0	1	0	1	5	2	9
7	702 BAJHANG	1	0	0	0	0	0	0	4	6	11
7	703 DARCHULA	0	0	0	0	0	2	0	10	72	84
7	704 BAITADI	0	0	0	0	0	0	3	4	10	17
7	705 DADEL DHURA	0	0	0	0	0	1	1	5	2	9
7	706 DOTI	0	0	0	0	0	0	1	1	31	33
7	707 ACHHAM	0	0	0	0	1	1	1	1	11	15
7	708 KAILALI	2	0	1	1	0	0	3	13	51	71
7	709 KANCHANPUR	2	0	0	0	2	4	3	14	49	74
	<b>Grand Total</b>	<b>11</b>	<b>3</b>	<b>15</b>	<b>18</b>	<b>25</b>	<b>93</b>	<b>720</b>	<b>3708</b>	<b>6472</b>	<b>11065</b>