

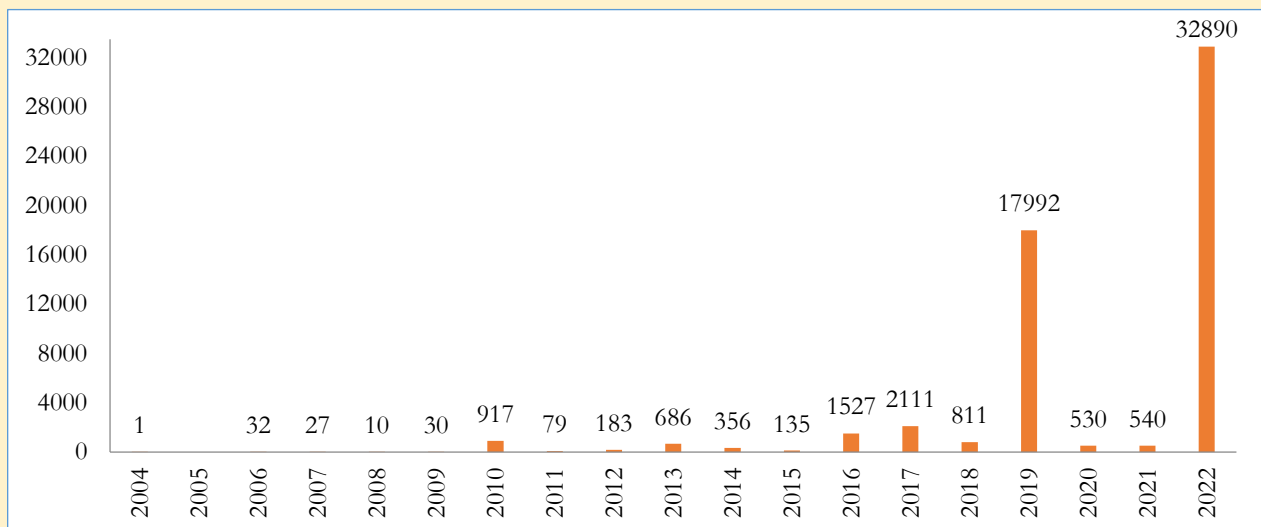


## Situation update of Dengue 2022 (As of 7 Oct,2022)

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 7 Oct, 2022, a total of **32890 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 (**32725, 99 %**) have been reported during the same time period (**July to Oct**). 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 7 Oct 2022											
Province	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Total
<b>Province 1</b>	2	0	1	2	3	18	47	136	671	52	<b>932</b>
<b>Madhesh Province</b>	1	0	1	0	5	5	4	51	380	16	<b>463</b>
<b>Bagmati Province</b>	0	1	1	1	1	38	427	2899	21568	620	<b>25556</b>
<b>Gandaki Province</b>	0	0	0	3	1	3	28	56	636	10	<b>737</b>
<b>Lumbini Province</b>	2	2	11	8	9	19	192	496	2743	41	<b>3523</b>
<b>Karnali Province</b>	1	0	0	3	2	2	9	13	566	15	<b>611</b>
<b>Sudhur Paschim</b>	5	0	1	1	4	8	13	57	964	15	<b>1068</b>
<b>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>27528</b>	<b>769</b>	<b>32890</b>

The top 10 districts have reported the highest number of cases (**28241, 86%**), 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 Kathmandu (10862), Lalitpur (7951), Makwanpur (3024), Dang (1741), Bhaktapur (1247), Chitwan (1131) and Rupandehi (815) as shown in Table 2. **Till date, 42 deaths due to dengue are verified.**

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

01 Jan - 7 Oct 2022												
Province	Districts	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Grand Total
<b>3</b>	306 Kathmandu	0	0	0	0	1	1	35	727	9891	207	10862
<b>3</b>	308 Lalitpur	0	0	0	0	0	1	99	1558	6016	277	7951
<b>3</b>	312 Makwanpur	0	0	0	0	0	0	221	337	2452	14	3024
<b>5</b>	510 Dang	0	0	0	0	1	1	5	19	1702	13	1741
<b>3</b>	307 Bhaktapur	0	0	0	0	0	0	6	86	1151	4	1247
<b>3</b>	313 Chitawan	0	0	0	0	0	3	4	24	995	105	1131
<b>5</b>	508 Rupandehi	1	0	2	1	0	7	109	315	374	6	815
<b>3</b>	304 Dhading	0	0	0	0	0	32	24	54	483	2	595
<b>6</b>	610 Surkhet	0	0	0	3	2	0	0	1	451	2	459
<b>7</b>	708 Kailali	2	0	1	1	0	0	3	13	395	1	416
<b>Total</b>		<b>3</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>45</b>	<b>506</b>	<b>3134</b>	<b>23910</b>	<b>631</b>	<b>28241</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.
- ✓ 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.
- ✓ Vector surveillance activity has started at Lalitpur, Kathmandu from 13 Sept, 2022 with several wards.



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- ✓ EDCD conducted an interaction meeting with elected members, government officials and health coordinators of Bhaktapur and Lalitpur districts, with focus on sensitizing on dengue prevention and control efforts in both districts.
- ✓ EDCD held an interaction meeting with Dang district elected members, government officials, and health coordinators, with the goal of raising awareness about dengue prevention and control efforts.
- ✓ At Dang, several wards have participated in dengue vector surveillance activities and search and destroy activity.
- ✓ The EDCD has distributed LLINs (Long-lasting insecticidal nets) to high-reporting hospitals (both public and private) in Kathmandu valley for dengue control.

Summary Of Dengue Reported Cases Based On EWARS Reporting												
01 Jan - 7 Oct 2022												
Province	Districts	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Grand Total
3	306 KATHMANDU	0	0	0	0	1	1	35	727	9891	207	10862
3	308 LALITPUR	0	0	0	0	0	1	99	1558	6016	277	7951
3	312 MAKWANPUR	0	0	0	0	0	0	221	337	2452	14	3024
5	510 DANG	0	0	0	0	1	1	5	19	1702	13	1741
3	307 BHAKTAPUR	0	0	0	0	0	0	6	86	1151	4	1247
3	313 CHITAWAN	0	0	0	0	0	3	4	24	995	105	1131
5	508 RUPANDEHI	1	0	2	1	0	7	109	315	374	6	815
3	304 DHADING	0	0	0	0	0	32	24	54	483	2	595
6	610 SURKHET	0	0	0	3	2	0	0	1	451	2	459
7	708 KAILALI	2	0	1	1	0	0	3	13	395	1	416
5	504 GULMI	0	0	0	0	2	3	17	33	244	1	300
7	703 DARCHULA	0	0	0	0	0	2	0	10	270	7	289
3	309 KAVREPALANCHOK	0	0	0	0	0	0	5	29	177	3	214
7	709 KANCHANPUR	2	0	0	0	2	4	3	14	121	3	149
5	505 ARGHAKHANCHI	0	0	0	1	0	1	13	36	87	1	139
1	108 TERHATHUM	0	0	0	0	0	0	0	88	50	0	138
3	305 NUWAKOT	0	0	0	0	0	0	2	12	113	3	130
5	506 PALPA	0	1	1	2	0	3	12	26	82	1	128
1	102 SANKHUWASABHA	0	0	0	1	0	11	30	15	64	0	121
1	113 SUNSARI	0	0	0	0	0	0	2	4	114	0	120
3	310 RAMECHHAP	0	1	1	1	0	0	4	17	93	2	119
3	311 SINDHULI	0	0	0	0	0	1	27	38	46	0	112
2	207 BARA	1	0	0	0	2	0	0	9	87	3	102
3	302 SINDHUPALCHOK	0	0	0	0	0	0	0	7	89	3	99
5	512 BARDIYA	0	0	7	4	6	0	4	6	68	1	96
4	401 GORKHA	0	0	0	0	0	1	2	9	81	1	94
4	405 KASKI	0	0	0	1	0	0	3	6	84	0	94
5	509 KAPILBASTU	0	0	1	0	0	2	6	21	53	11	94
4	411 BAGLUNG	0	0	0	0	0	0	6	12	70	3	91
4	407 TANAHU	0	0	0	0	0	0	2	1	86	0	89
2	208 PARSA	0	0	0	0	0	3	1	3	68	12	87
4	409 SYANGJA	0	0	0	0	0	0	1	5	80	1	87



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2	205 SARLAHI	0	0	0	0	2	1	1	19	63	0	86
1	114 UDAYAPUR	0	0	0	0	0	0	0	3	53	29	85
4	410 PARBAT	0	0	0	0	1	0	3	3	77	0	84
1	111 JHAPA	1	0	1	0	1	1	2	5	68	4	83
1	105 KHOTANG	0	0	0	0	1	0	0	2	75	1	79
2	206 RAUTAHAT	0	0	0	0	1	0	2	5	70	1	79
4	408 NAWALPARASI EAST	0	0	0	0	0	0	2	12	64	1	79
7	706 DOTI	0	0	0	0	0	0	1	1	72	2	76
1	112 MORANG	1	0	0	1	0	3	2	3	65	0	75
5	507 NAWALPARASI WEST	0	0	0	0	0	1	16	23	33	0	73
3	301 DOLAKHA	0	0	0	0	0	0	0	10	56	0	66
5	511 BANKE	0	1	0	0	0	0	2	6	49	5	63
4	406 LAMJUNG	0	0	0	1	0	2	8	6	44	0	61
1	107 DHANKUTA	0	0	0	0	0	0	0	4	54	0	58
4	404 MYAGDI	0	0	0	1	0	0	1	1	43	2	48
1	110 ILAM	0	0	0	0	1	0	1	2	29	10	43
1	106 BHOJPUR	0	0	0	0	0	2	7	3	29	1	42
2	204 MAHOTTARI	0	0	0	0	0	0	0	5	36	0	41
7	704 BAITADI	0	0	0	0	0	0	3	4	34	0	41
5	503 PYUTHAN	1	0	0	0	0	1	6	6	25	0	39
6	608 RUKUM WEST	0	0	0	0	0	0	1	3	25	10	39
1	104 OKHALDHUNGA	0	0	0	0	0	1	3	4	27	3	38
7	705 DADEL DHURA	0	0	0	0	0	1	1	5	23	1	31
6	609 SALYAN	0	0	0	0	0	0	1	0	26	1	28
2	201 SAPTARI	0	0	0	0	0	0	0	3	24	0	27
1	109 PANCHTHAR	0	0	0	0	0	0	0	1	23	1	25
7	707 ACHHAM	0	0	0	0	1	1	1	1	21	0	25
2	202 SIRAHA	0	0	0	0	0	1	0	5	17	0	23
6	604 JUMLA	1	0	0	0	0	0	6	6	10	0	23
7	702 BAJHANG	1	0	0	0	0	0	0	4	17	0	22
6	605 KALIKOT	0	0	0	0	0	1	0	0	20	0	21
1	103 SOLUKHUMBU	0	0	0	0	0	0	0	2	14	3	19
5	501 RUKUM EAST	0	0	0	0	0	0	2	3	14	0	19
7	701 BAJURA	0	0	0	0	1	0	1	5	11	1	19
2	203 DHANUSA	0	0	1	0	0	0	0	2	15	0	18
5	502 ROLPA	0	0	0	0	0	0	0	2	12	2	16
6	606 DAILEKH	0	0	0	0	0	0	1	1	13	1	16
6	607 JAJARKOT	0	0	0	0	0	1	0	0	11	1	13
4	402 MANANG	0	0	0	0	0	0	0	1	5	2	8
6	602 MUGU	0	0	0	0	0	0	0	1	7	0	8
1	101 TAPLEJUNG	0	0	0	0	0	0	0	0	6	0	6
3	303 RASUWA	0	0	0	0	0	0	0	0	6	0	6
4	403 MUSTANG	0	0	0	0	0	0	0	0	2	0	2
6	601 DOLPA	0	0	0	0	0	0	0	1	1	0	2
6	603 HUMLA	0	0	0	0	0	0	0	0	2	0	2
	<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>27528</b>	<b>769</b>	<b>32890</b>



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