

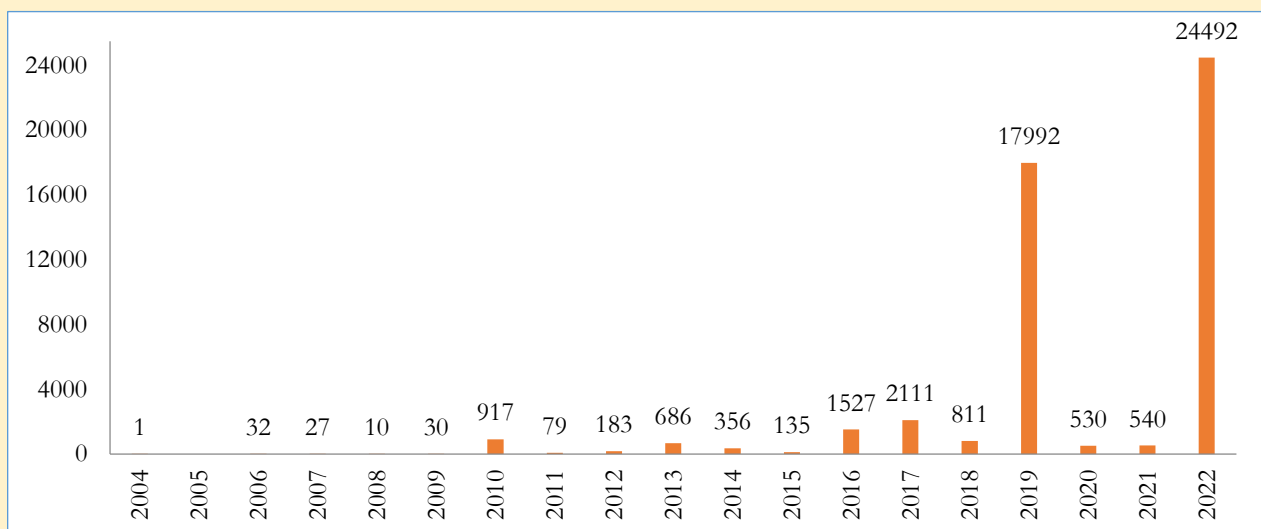


## Situation update of Dengue 2022 (As of 24<sup>th</sup> Sept,2022)

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 24<sup>th</sup> September 2022, a total of 24492 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 (**24327, 99 %**) 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 24 Sept 2022										
Province	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Total
<b>Province 1</b>	2	0	1	2	3	18	47	136	544	<b>753</b>
<b>Madhesh Province</b>	1	0	1	0	5	5	4	51	256	<b>323</b>
<b>Bagmati Province</b>	0	1	1	1	1	38	427	2899	15632	<b>19000</b>
<b>Gandaki Province</b>	0	0	0	3	1	3	28	56	446	<b>537</b>
<b>Lumbini Province</b>	2	2	11	8	9	19	192	496	2133	<b>2872</b>
<b>Karnali Province</b>	1	0	0	3	2	2	9	13	200	<b>230</b>
<b>Sudhur Paschim</b>	5	0	1	1	4	8	13	57	688	<b>777</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>19899</b>	<b>24492</b>

The top 10 districts have reported the highest number of cases (**21013, 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 (8136), Lalitpur (5935), Makwanpur (2275), Dang (1278), Bhaktapur (1050), Rupandehi (718) as shown in Table 2. **Till date, 29 deaths due to dengue are verified.**

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

01 Jan - 24 Sept 2022											
Province	Districts	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Grand Total
<b>3</b>	306 Kathmandu	0	0	0	0	1	1	35	727	7372	8136
<b>3</b>	308 Lalitpur	0	0	0	0	0	1	99	1558	4277	5935
<b>3</b>	312 Makwanpur	0	0	0	0	0	0	221	337	1717	2275
<b>5</b>	510 Dang	0	0	0	0	1	1	5	19	1252	1278
<b>3</b>	307 Bhaktapur	0	0	0	0	0	0	6	86	958	1050
<b>5</b>	508 Rupandehi	1	0	2	1	0	7	109	315	283	718
<b>3</b>	313 Chitawan	0	0	0	0	0	3	4	24	544	575
<b>3</b>	304 Dhading	0	0	0	0	0	32	24	54	339	449
<b>5</b>	504 Gulmi	0	0	0	0	2	3	17	33	244	299
<b>7</b>	708 Kailali	2	0	1	1	0	0	3	13	278	298
		<b>3</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>4</b>	<b>48</b>	<b>523</b>	<b>3166</b>	<b>17264</b>	<b>21013</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.

Summary of Dengue Reported Cases Based On EWARS/Districts Reporting											
01 Jan - 24 Sept 2022											
Province	Districts	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Grand Total
3	306 KATHMANDU	0	0	0	0	1	1	35	727	7372	8136
3	308 LALITPUR	0	0	0	0	0	1	99	1558	4277	5935
3	312 MAKWANPUR	0	0	0	0	0	0	221	337	1717	2275
5	510 DANG	0	0	0	0	1	1	5	19	1252	1278
3	307 BHAKTAPUR	0	0	0	0	0	0	6	86	958	1050
5	508 RUPANDEHI	1	0	2	1	0	7	109	315	283	718
3	313 CHITAWAN	0	0	0	0	0	3	4	24	544	575
3	304 DHADING	0	0	0	0	0	32	24	54	339	449
5	504 GULMI	0	0	0	0	2	3	17	33	244	299
7	708 KAILALI	2	0	1	1	0	0	3	13	278	298
7	703 DARCHULA	0	0	0	0	0	2	0	10	196	208
3	309 KAVREPALANCHOK	0	0	0	0	0	0	5	29	137	171
5	505 ARGHAKHANCHI	0	0	0	1	0	1	13	36	87	138
1	108 TERHATHUM	0	0	0	0	0	0	0	88	48	136
1	102 SANKHUWASABHA	0	0	0	1	0	11	30	15	63	120
1	113 SUNSARI	0	0	0	0	0	0	2	4	114	120
6	610 SURKHET	0	0	0	3	2	0	0	1	106	112
5	506 PALPA	0	1	1	2	0	3	12	26	58	103
7	709 KANCHANPUR	2	0	0	0	2	4	3	14	75	100
3	305 NUWAKOT	0	0	0	0	0	0	2	12	84	98
3	311 SINDHULI	0	0	0	0	0	1	27	38	30	96
3	310 RAMECHHAP	0	1	1	1	0	0	4	17	63	87
5	512 BARDIYA	0	0	7	4	6	0	4	6	59	86
5	509 KAPILBASTU	0	0	1	0	0	2	6	21	52	82
1	111 JHAPA	1	0	1	0	1	1	2	5	68	79
4	409 SYANGJA	0	0	0	0	0	0	1	5	73	79
4	401 GORKHA	0	0	0	0	0	1	2	9	66	78
2	205 SARLAHI	0	0	0	0	2	1	1	19	51	74
3	302 SINDHUPALCHOK	0	0	0	0	0	0	0	7	63	70
1	112 MORANG	1	0	0	1	0	3	2	3	58	68
5	507 NAWALPARASI WEST	0	0	0	0	0	1	16	23	25	65
4	411 BAGLUNG	0	0	0	0	0	0	6	12	46	64
2	206 RAUTAHAT	0	0	0	0	1	0	2	5	54	62
4	407 TANAHU	0	0	0	0	0	0	2	1	54	57
4	410 PARBAT	0	0	0	0	1	0	3	3	49	56
4	405 KASKI	0	0	0	1	0	0	3	6	45	55
4	406 LAMJUNG	0	0	0	1	0	2	8	6	37	54
2	207 BARA	1	0	0	0	2	0	0	9	41	53
3	301 DOLAKHA	0	0	0	0	0	0	0	10	43	53



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1	114 UDAYAPUR	0	0	0	0	0	0	0	3	46	49
4	404 MYAGDI	0	0	0	1	0	0	1	1	43	46
4	408 NAWALPARASI EAST	0	0	0	0	0	0	2	12	31	45
5	511 BANKE	0	1	0	0	0	0	2	6	35	44
7	706 DOTI	0	0	0	0	0	0	1	1	42	44
1	105 KHOTANG	0	0	0	0	1	0	0	2	40	43
2	204 MAHOTTARI	0	0	0	0	0	0	0	5	36	41
7	704 BAITADI	0	0	0	0	0	0	3	4	30	37
5	503 PYUTHAN	1	0	0	0	0	1	6	6	22	36
1	104 OKHALDHUNGA	0	0	0	0	0	1	3	4	27	35
2	208 PARSA	0	0	0	0	0	3	1	3	27	34
1	106 BHOJPUR	0	0	0	0	0	2	7	3	21	33
1	107 DHANKUTA	0	0	0	0	0	0	0	4	27	31
7	705 DADELHURA	0	0	0	0	0	1	1	5	23	30
7	707 ACHHAM	0	0	0	0	1	1	1	1	20	24
2	202 SIRAHA	0	0	0	0	0	1	0	5	17	23
6	604 JUMLA	1	0	0	0	0	0	6	6	9	22
6	609 SALYAN	0	0	0	0	0	0	1	0	21	22
7	702 BAJHANG	1	0	0	0	0	0	0	4	17	22
2	201 SAPTARI	0	0	0	0	0	0	0	3	18	21
6	605 KALIKOT	0	0	0	0	0	1	0	0	20	21
6	608 RUKUM WEST	0	0	0	0	0	0	1	3	13	17
5	501 RUKUM EAST	0	0	0	0	0	0	2	3	11	16
2	203 DHANUSA	0	0	1	0	0	0	0	2	12	15
1	110 ILAM	0	0	0	0	1	0	1	2	10	14
6	606 DAILEKH	0	0	0	0	0	0	1	1	12	14
7	701 BAJURA	0	0	0	0	1	0	1	5	7	14
6	607 JAJARKOT	0	0	0	0	0	1	0	0	11	12
1	103 SOLUKHUMBU	0	0	0	0	0	0	0	2	8	10
1	109 PANCHTHAR	0	0	0	0	0	0	0	1	9	10
6	602MUGU	0	0	0	0	0	0	0	1	7	8
5	502 ROLPA	0	0	0	0	0	0	0	2	5	7
1	101 TAPLEJUNG	0	0	0	0	0	0	0	0	5	5
3	303 RASUWA	0	0	0	0	0	0	0	0	5	5
4	402 MANANG	0	0	0	0	0	0	0	1	2	3
6	601 DOLPA	0	0	0	0	0	0	0	1	0	1
6	603 HUMLA	0	0	0	0	0	0	0	0	1	1
	<b>Grand Total</b>	<b>11</b>	<b>3</b>	<b>15</b>	<b>18</b>	<b>24</b>	<b>92</b>	<b>685</b>	<b>2981</b>	<b>19899</b>	<b>24492</b>