

CHOLERA OVERVIEW

Seventh pandemic cholera was first reported in Angola in the early 1970s. Since 1990, large-scale outbreaks were reported in 1990-1991, 2006-2008 and 2013. The overall yearly trend shows a significant decrease in case numbers since 2006 (Fig. 1).¹

Between 2006 and 2018, epidemiological surveillance reported 112,545 cases with 4,279 fatalities (case fatality rate (CFR) ≈ 3.8%).

From 2006 to 2018, the province reporting the majority of suspected cases was **Luanda** (29%). After Luanda, **Benguela** Province reported 15.4% of all cholera cases.²

Angola has been affected by cross-border outbreaks, especially among communities located in northern provinces bordering Democratic Republic of the Congo (DRC) (Figs. 2 and 4).³

CHOLERA DISTRIBUTION

Luanda Province reported 29% of all cases over the course of nine outbreaks, although most outbreaks in Luanda occurred between 2006 and 2013 (Fig. 2, Table I).²

In the southwest, the provinces of **Benguela**, **Huíla** and **Cunene** accounted for a combined 31.1% of all suspected cholera cases. The large majority of cases (99.4%) in these three provinces were reported between 2006 and 2013 (Fig. 2, Table I).²

In the north along the DRC border, the provinces of **Uíge**, **Zaire**, **Cabinda**, **Malanje** and **Lunda Norte** reported a combined 20.9% of all cholera suspected cases. All five provinces were repeatedly affected, especially Uíge Province, which reported nine outbreak events. Uíge, Zaire and Cabinda reported 99% of all cases from 2015 to 2018 (Fig. 2, Table I).²

Cholera case numbers in Angola tended to increase between October and December, which coincides with the onset of the rainy season (Fig. 3).^{2,4} Extended drought followed by onset of the rainy season likely played a role in the 2013 outbreak in the southern provinces; case numbers peaked in Huíla and Cunene with the onset of the rainy season in late-2013.^{2,3}

Table I. Epidemiological parameters of cholera outbreaks in primarily affected provinces in Angola, 2006-2018²

PROVINCE	Cases / deaths [1]	% of total cases	Case Fatality Rate (%)	Recurrence (No. of outbreaks)	Outbreak duration [2] (average in weeks)
Luanda	32,651 / 464	29	1.4	9	8
Benguela	17,335 / 708	15.4	4.1	7	14
Huíla	9,551 / 302	8.5	3.2	7	22.3
Cunene	8,114 / 341	7.2	4.2	5	51
Uíge	7,310 / 122	6.5	1.7	9	16.3
Malanje	6,978 / 469	6.2	6.7	7	4
Kwanza Norte	5,726 / 232	5.1	4.1	6	N/A
Namibe	5,164 / 170	4.6	3.3	7	4
Kwanza Sul	4,227 / 473	3.8	11.2	5	8.5
Lunda Norte	4,016 / 490	3.6	12.2	5	6
Bengo	3,283 / 154	2.9	4.7	3	N/A
Cabinda	3,132 / 83	2.8	2.7	5	13.3
Zaire	2,056 / 105	1.8	5.1	5	17

Note: [1] Total cases = 112,545 and total deaths = 4,279, from 2006 to 2018 (up to week 20). [2] Average in weeks based on 2010, 2013-2018 data.

Figure 1. Annual number of suspected cholera cases and case fatality rate in Angola, 1990 – 2017¹

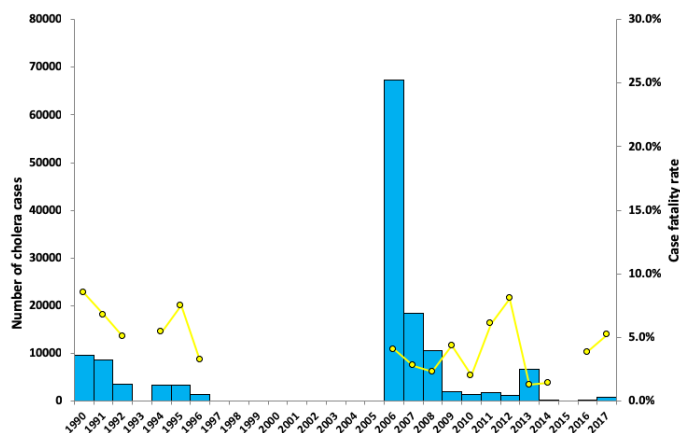


Figure 2. Cumulative cholera incidence by province in Angola, 2006-2018²

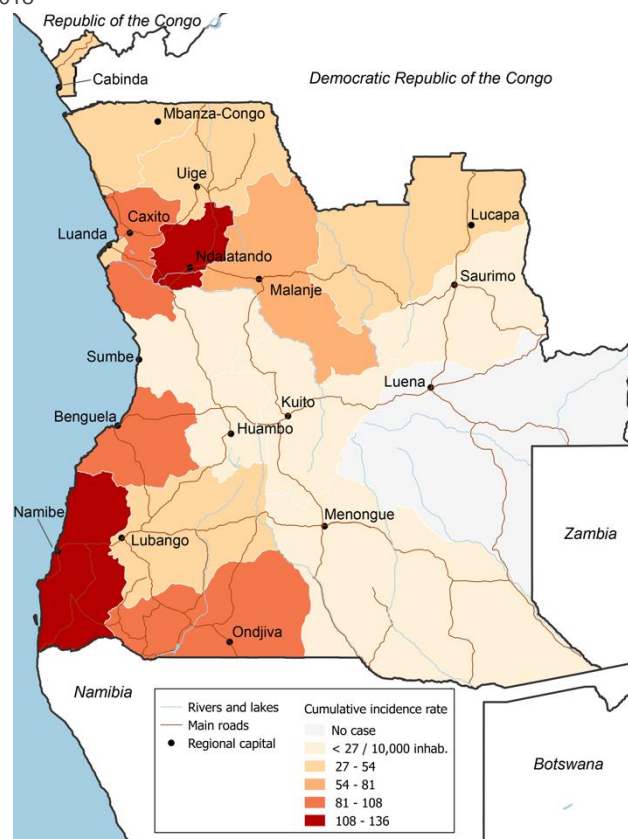
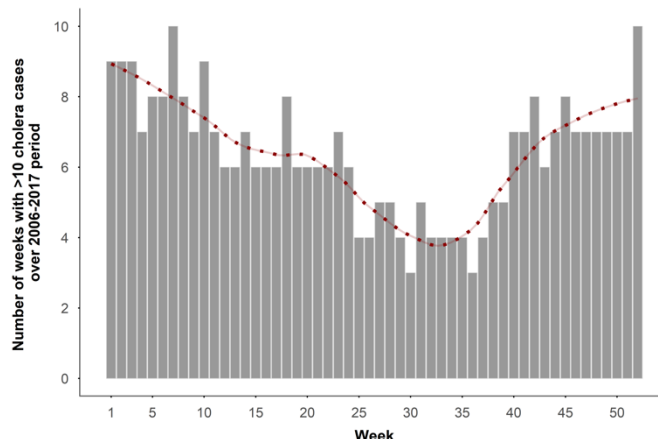


Figure 3. Weekly cholera trend in Angola from 2006 to 2017.²



CHOLERA HOTSPOTS

Location of cholera foci (Fig. 4, Table II):

- In the north along the DRC border – the provinces of **Uíge**, **Zaire**, **Cabinda**, **Lunda Norte** and **Malanje**, and nearby **Kwanza Norte**
- In the southwest – the provinces of **Benguela**, **Huíla**, **Cunene** and **Namibe**
- The capital **Luanda** Province

STRATEGIC RECOMMENDATIONS

Cross-border cholera transmission from DRC likely plays a major role in cholera dynamics in Angola (Table II, Fig. 4). Since 2011, the majority of outbreaks in Angola have coincided with the spread of cholera into the southwestern provinces of DRC.^{3,5,6} This highlights the importance of cross-border surveillance and coordinated response between countries in the region. Cross-border collaboration with DRC should be strengthened, with regular data and information sharing, especially when cholera outbreaks spread into the western provinces of DRC.

In cholera hotspots (Type 1-4), preparedness and response plans should be developed and implemented including: (1) strengthening early detection and rapid response including community-based surveillance and cross-border alerts; (2) establishing multisectoral and cross-border coordination mechanisms; (3) building outbreak management capacity; (4) targeted pre-positioning of supplies and (5) developing risk communication, social mobilization and community engagement plans with harmonized approaches and messaging (Table II).

Sustainable water, sanitation, hygiene (WASH) and social mobilization activities should be implemented in five priority provinces regularly affected by outbreaks of extended duration, especially at-risk provinces along the border with DRC (Table II – Type 1-2 hotspots). Sustainable WASH and social mobilization activities should include hard-to-reach and remote populations. Pre-positioning of supplies is critical for hotspots located far from Luanda. To reduce the CFR in rural areas where access to health facility is restricted, community surveillance including active case search, and early referral to healthcare should be strengthened through community cadres. Furthermore, oral rehydration points should be established, and oral rehydration solutions should be distributed. Identification of transmission foci at a finer scale (i.e., municipality) within the priority provinces is necessary to best target at-risk communities.

Figure 4. Cholera hotspots in Angola by province, 2006-2018²



Risk factors^{3,7}

- Obtaining drinking water from unsafe *chimpakas* (e.g., Cunene)
- Obtaining water for domestic use from *cacimbas*, especially those located downhill from and in close proximity to latrines (e.g., Soyo, Zaire; Cabinda; and Uíge)
- Practicing open defecation (56% of rural populations)
- Living on the islands in Zaire (limited access to safe drinking water sources, sanitation facilities and healthcare)
- Frequent travel to DRC during cholera outbreaks in western provinces of DRC
- Poor sanitation and limited access to safe water in *musseques* of peri-urban Luanda

Table II. Summary of cholera hotspot classification in Angola, 2006-2018²

Hotspot type	Province	% of total cases	Recurrence (No. of outbreaks)	Outbreak duration (median, in weeks)	Attack rate (median per 10,000 inhabitants)	Case fatality rate (%)	Cross-border area
Type 1	UÍGE	6.5	9	13.5	2.17	1.7	Yes
	BENGUELA	15.4	7	14	2.04	4.1	No
Type 2	HUILA	8.5	7	21	3.75	3.2	No
	CUNENE	7.2	5	51	18.21	4.2	Yes
	ZAIRE	1.8	5	17	3.44	5.1	Yes
Type 3	LUANDA	29	9	7	0.14	1.4	No
	MALANJE	6.2	7	4	4.63	6.7	Yes
	KWANZA NORTE	5.1	6	N/A	5.2	4.1	No
Type 4	NAMIBE	4.6	7	4	7.01	3.3	Yes
	LUNDA NORTE	3.6	5	6	6.98	12.2	Yes
	CABINDA	2.8	5	7	3.02	2.7	Yes

Note: Type 1: Highest-priority area with outbreaks of high frequency (≥8 outbreaks) and extended duration (≥12 weeks); Type 2: High-priority area with outbreaks of moderate frequency (5-7 outbreaks) and extended duration; Type 3: Medium-priority area with outbreaks of high frequency and short duration (<12 weeks); Type 4: Low-priority area with outbreaks of moderate frequency and short duration.

References

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