



GLOBAL TASK FORCE ON
CHOLERA CONTROL

GTFCC HOTSPOT IDENTIFICATION TOOL

Background to development and deployment

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GTFCC Surveillance Working Group Webinar series

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GTFCC End Cholera Roadmap

- Formally presented October 2017
- Based on the principle that cholera control can be achieved by implementing needed interventions in priority hotspots.
- Country-led situational analysis is first step in developing a National Cholera Plan
- Observed need for facilitating situational analysis by assisting in identification of hotspots

GTFFCC Hotspot definition

Geographically **limited area** (e.g. city, administrative level 2 or health district catchment area) where **environmental, cultural and/or socioeconomic conditions** facilitate the transmission of the disease and where **cholera persists or re-appears regularly**. Hotspots play a central role in the **spread of the disease** to other areas.

GTFCC Cholera Hotspot Tool

- Cholera hotspot identification is not new
- GTFCC aimed for a tool that was:
 - Simple and replicable
 - Performed by country ministries
 - Used standardized indicators
 - Aimed at defining areas with a geographic and population size that facilitated implementation and allocation of often limited resources.
- Published in current draft September 2019

Cholera hotspot tool

- The tool defines and prioritizes hotspots using epidemiologic indicators alone:
 - Mean annual incidence and “persistence” over the past 5 years.
- Areas with low transmission may be prioritized if contextual factors/WaSH indicators are added, especially if the goal is elimination.
- Dynamic process by the country:
 - initial baseline assessment
 - annual monitoring for reporting and updating NCP as needed.

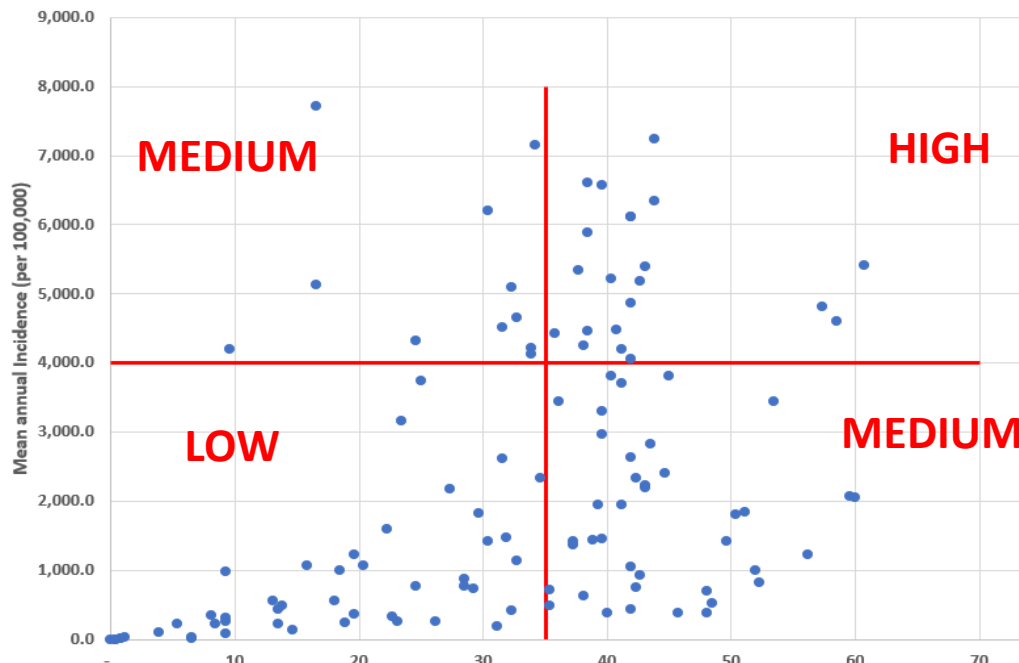
Hotspot Tool Assumptions

- Recent history of cholera is an adequate predictor of future risk
- Last 5 years of disease data will accurately describe cholera epidemiology
- All suspect cases are considered cholera cases; confirmation is not required
- For now, district (A2)-level population is considered to be equally at-risk across district
- Tool would evolve with subsequent iterations

DISTRICT	GENERAL INFORMATION					INCIDENCE					PERSISTENCE OF CHOLERA					PRIORITY LEVEL								
	Population					Number of reported cholera cases					Annual incidence						Mean annual incidence (5 years)	Number of weeks with reported cases per year					Proportion (%) of weeks with reported cases (5 year period=260 weeks)	
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019		2015 - 2019	2015	2016	2017	2018	2019	2015 - 2019	
District 1	29,974	31,552	32,528	33,534	34,540	22	562	1,124	20	4	73.4	1,781.2	3,455.5	59.6	11.6	1,076.3	4	8	24	2	3	15.8	LOW	
District 2	32,356	34,059	35,113	36,199	37,285	99	567	1,134	4	47	306.0	1,664.7	3,223.6	11.1	126.1	1,067.5	4	8	29	3	9	20.4	LOW	
District 3	41,663	43,856	45,212	46,611	48,009	726	1,579	3,157	645	1,011	1,742.5	3,539.3	6,982.6	1,383.8	2,105.9	3,162.8	6	12	33	4	6	23.5	LOW	
District 4	65,461	68,906	71,038	73,235	75,432	40	619	1,238	2	48	61.1	898.3	1,742.7	2.7	63.6	553.7	4	8	25	2	8	18.1	LOW	
District 5	18,525	19,500	20,010	20,368	20,968	36	126	252	0	8	194.3	646.2	1,253.4	0.0	38.2	427.6	4	8	19	0	4	13.5	LOW	
District 6	31,789	33,462	34,497	35,564	36,631	1,256	1,041	2,082	3,321	47	3,951.1	3,111.0	6,035.3	9,338.1	128.3	4,512.8	9	18	30	13	12	31.5	MEDIUM	
District 7	145,610	153,274	158,014	162,901	167,789	69	787	1,574	197	357	47.4	513.5	996.1	120.9	212.8	378.1	13	26	37	32	17	48.1	MEDIUM	
District 8	110,310	116,116	119,707	123,409	127,111	64	813	1,626	33	77	58.0	700.2	1,358.3	26.7	60.6	440.8	12	24	41	18	14	41.9	MEDIUM	
District 9	122,689	129,146	133,140	137,258	141,375	620	3,113	6,225	1,177	1,061	505.3	2,410.1	4,675.5	857.5	750.5	1,839.8	12	24	39	40	18	51.2	MEDIUM	
District 10	64,852	68,265	70,376	72,553	74,729	50	664	1,328	36	89	77.1	972.7	1,887.0	49.6	119.1	621.1	9	18	38	19	15	38.1	MEDIUM	
District 11	40,765	42,915	44,242	45,610	46,979	1,590	2,450	2,376	1,509	2,354	3,900.0	5,709.0	5,370.5	3,308.5	5,010.8	4,653.8	17	15	19	16	18	32.7	MEDIUM	
District 12	35,339	37,199	38,349	39,535	40,721	0	1,269	2,537	1,618	981	0.0	3,410.1	6,615.5	2,409.1		3,305.4	0	0	34	51	18	39.6	MEDIUM	
District 13	29,002	30,528	31,472	32,446	33,419	0	43	85	60	222	0.0	139.2	270.1	184.9	664.3	251.7	0	0	20	33	15	26.2	LOW	
District 14	30,991	32,622	33,631	34,671	35,712	0	371	741	416	977	0.0	1,135.7	2,203.3	1,199.8	2,735.8	1,454.9	0	0	34	51	18	33.6	MEDIUM	
District 15	41,373	43,550	44,897	46,286	47,674	367	2,333	4,665	2,255	1,209	887.1	5,355.9	10,390.4	4,871.9	2,536.0	4,808.2	11	22	46	52	18	57.3	HIGH	
District 16	33,468	35,229	36,319	37,442	38,565	1,459	3,654	1,456	1,347	1,203	4,359.4	10,372.1	4,009.0	3,597.6	3,119.4	5,091.5	15	12	18	21	18	32.3	MEDIUM	
District 17	41,709	43,905	45,262	46,662	48,062	1,033	3,673	7,346	2,985	1,102	2,476.7	8,365.9	16,229.8	6,397.0	2,292.9	7,152.4	11	22	21	21	14	34.2	MEDIUM	
District 18	24,084	25,351	26,135	26,944	27,752	0	1,250	2,500	3,500	1,498	0.0	4,930.7	9,585.6	12,990.0	5,397.8	6,576.8	0	0	33	52	18	39.6	HIGH	
District 19	34,098	35,892	37,002	38,147	39,291	0	25	50	9	187	0.0	69.7	135.1	23.6	475.9	140.9	0	0	16	9	13	14.6	LOW	
District 20	113,279	119,241	122,928	126,730	130,532	218	4,123	8,246	179	575	192.4	3,457.7	6,708.0	141.2	440.5	2,188.0	10	20	41	26	15	43.1	MEDIUM	
District 21	88,569	93,231	96,114	99,087	102,060	464	3,293	6,585	172	979	523.9	3,531.6	6,851.2	173.6	953.2	2,407.9	10	20	39	30	17	44.6	MEDIUM	
District 22	123,300	129,790	133,804	137,942	142,080	71	2,311	4,622	38	514	57.6	1,780.6	3,454.3	27.5	361.8	1,136.4	5	10	33	19	18	32.7	LOW	
District 23	13,472	14,181	14,620	15,072	15,524	0	94	188	15	60	0.0	662.9	1,285.9	99.5	386.5	487.0	0	0	23	8	5	13.8	LOW	
District 24	223,331	235,085	242,355	249,851	257,347	2,147	15,258	30,515	13,086	4,535	961.4	6,430.2	12,591.0	5,237.5	1,762.2	5,408.5	14	28	46	52	18	60.8	HIGH	
District 25	203,618	214,335	220,964	227,798	234,632	665	5,619	11,237	2,178	3,223	326.6	2,621.4	5,085.4	956.1	1,373.6	2,072.6	13	26	46	52	18	59.6	MEDIUM	
District 26	41,248	43,419	44,762	46,146	47,531	3,200	2,432	4,863	3,500	3,200	7,757.9													
District 27	55,581	58,506	60,315	62,181	64,046	0	348	695	3,569	1,450	0.0													
District 28	7,063	7,435	7,665	7,902	8,139	7	222	443	923	127	99.1													
District 29	62,214	65,488	67,514	69,602	71,690	8	784	1,567	1,577	912	12.9													
District 30	61,815	65,068	67,081	69,155	71,230	6	544	1,087	87	873	9.7													
District 31	3,617	3,808	3,925	4,047	4,168	0	131	262	286	161	0.0													
District 32	24,458	25,745	26,541	27,362	28,183	0	614	1,228	33	228	0.0													
District 33	17,270	18,179	18,741	19,321	19,901	0	441	882	293	444	0.0													
District 34	4,655	4,900	4,980	5,017	5,168	0	0	0	0	0	0.0													



Districts by Incidence and Persistence



INSTRUCTIONS

- Once the graph is generated, fill the cut-offs for incidence and persistence.
- NOTE: These cut-offs should be determined by the country based on its cholera burden.
- Adjust the scale of axis if necessary.
- The districts will be categorised based on their risk (see table below).
- From the DATA Sheet, filter and sort the districts using the PRIORITY LEVEL.

Cut-off incidence (100,000 hab)	Cut-off persistence (%)
4,000	35

Hotspot tool weaknesses

- Countries with epidemiology that does not fit recent significant annual transmission pattern of tool
- Cholera risk is not uniform across an entire district: e.g., metropolitan areas or large districts
- 3 levels of priority likely too broad; need within-group priority guidance.
- Suspect cholera = cholera

Hotspot tool weaknesses (2)

- Not possible to enter blank or “No Data”; tool input zero in case-count for that place/year.
- Graph visual:
 - No automatic adjustment of axes to data or cutoffs
 - No place names
- Number of weeks-per-year of cholera (persistence) requires separate count from incidence data
- No mapping tool

Objectives of hotspot web meeting series

- Answer concrete questions that will help achieve:
 - A simple, adaptable tool for developing a National Cholera Plan
 - Ascertains the top priority intervention for each hotspot by relative ranking (OCV, WaSH, surveillance, case management)
 - A replicable tool for baseline assessment and (semi-) annual M&E to note progress or need for control plan adjustment

Session 1 Questions

- Does the tool serve its purpose: to help select and prioritize administrative areas for a feasible and effective national cholera control plan?
- How should the tool distinguish between “no data” and zero reporting in calculating mean annual incidence?
- How should priority areas be ranked within-category? For Medium category? (higher incidence/low persistence, low incidence/high persistence)? Use an additional indicator to further rank?
- Is the default data-source administrative area (district or equivalent) fit for purpose, in context of significant intra-area cholera heterogeneity and/or large populations?
- Lower limit incidence/persistence boundaries for ranking



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Thank you

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