

# 6th Annual Meeting of the Global Task Force on Cholera Control (GTFCC)

## Cholera Epidemiological Situation & Hotspots, and PNEC-LT Strategic Cholera Elimination Prorities in Haiti

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**MSPP**



**June 3-4, 2019 – Annecy, France**



# HAITI Presentation 2019 GTFCC Annual Meeting

1. Background (HAITI / EMERGENCY / CHOLERA)
2. Epidemiological trends
3. Laboratory Surveillance
4. a.Quantitative and b.Qualitative Study
5. Vaccination / WASH Accompaniment Recommendations
6. Rapid Community Response data 2019
7. Targeted WASH interventions in hotspots
8. HAITI'S 11/2018-12/2022 PNEC-LT AXES WITH LIGHT STRATEGIC REVISIONS

A-Coordination, and Strengthening surveillance strategy for the next three years (PNEC-LT Axe 3)

B-Fight against and preventing cholera transmission (PNEC-LT Axis 2, 3, 4)

C-Consolidations of Gains in Long-Term Strategy (PNEC-LT Axis 4)



# 1. Haiti Background and Cholera Data

- Haiti is located in the Western Hemisphere
- Sharing with the Dominican Republic the island of Haiti
- The country is divided into 10 Departments
- Total population : ~11-12 million (2016)
- GDP : \$719 per capita
- Languages : French, Haitian Creole
- January 12, 2010 : hit by a major earthquake (7.2 magnitude)
- October 20, 2010 : first documented cholera outbreak in the country
- October 4, 2016 : hit by Hurricane Matthew (category 5)

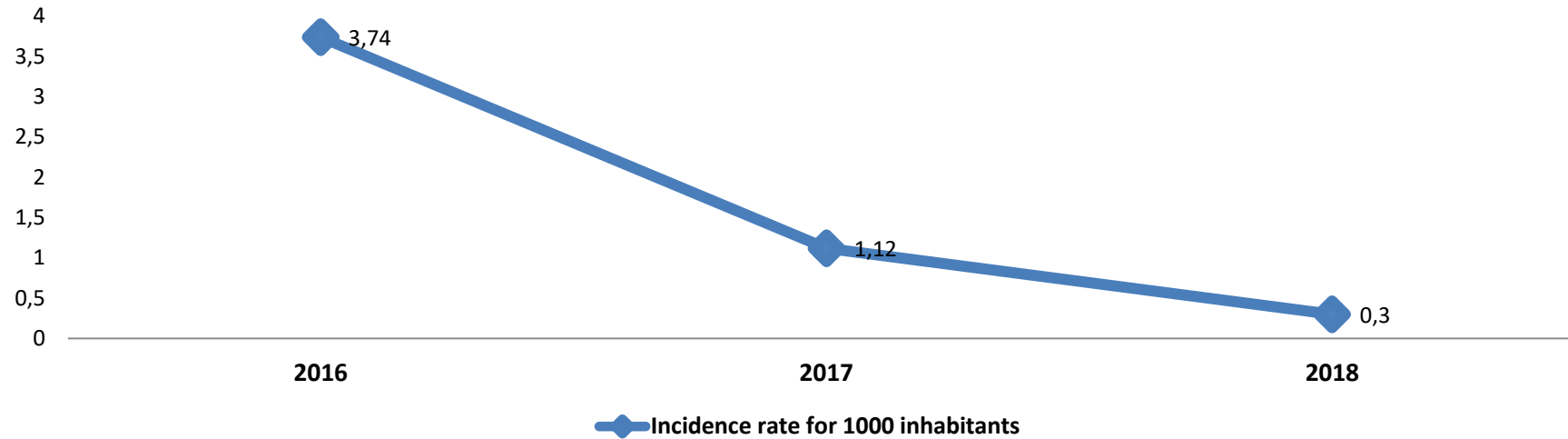


## 2. Epidemiological Trends: Cumulative cases of Cholera by year, October 20, 2010 – May 18, 2019

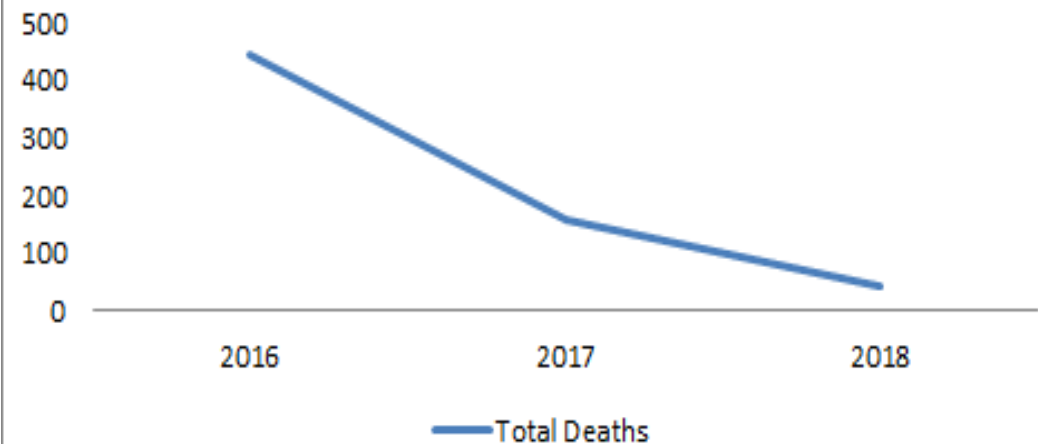
Year	Total suspected cases seen	Institutional deaths	Communal deaths	Total Deaths	Incidence rate for 1000 inhabitants
<b>2010</b> (October 20 to December 20 2010)	185351	2521	1580	4101	18.38
<b>2011</b>	352033	1950	977	2927	34.35
<b>2012</b>	101503	597	311	908	9.75
<b>2013</b>	58574	403	184	587	5.54
<b>2014</b>	27392	209	88	297	2.55
<b>2015</b>	36045	224	98	322	3.3
<b>2016</b>	41421	307	140	447	3.74
<b>2017</b>	13681	110	49	159	1.12
<b>2018</b>	3777	20	21	41	0.3
<b>2019</b> (January 1st to May 18 2019)	375	2	1	3	0.02
<b>Total</b>	<b>820152</b>	<b>6343</b>	<b>3449</b>	<b>9792</b>	



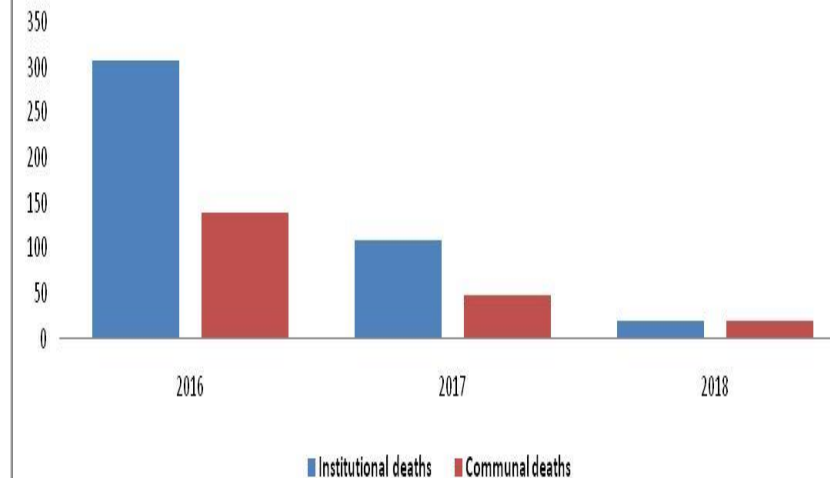
# Incidence rate for 1000 inhabitants, Haiti, 2016-2018



## Total Deaths suspected of cholera, 2016 - 2018

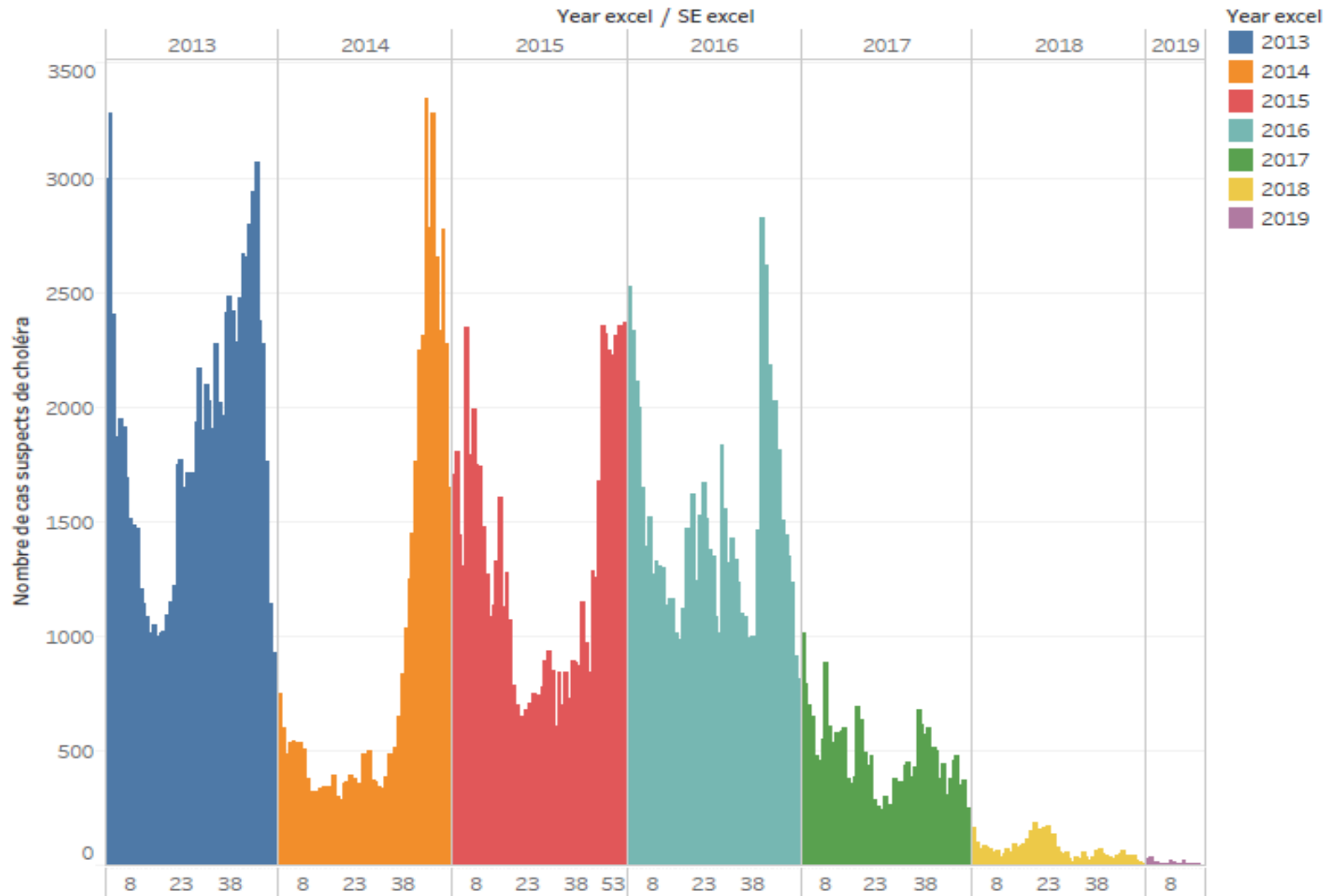


## Institutional and Communal Deaths, Haiti, 2016-2018

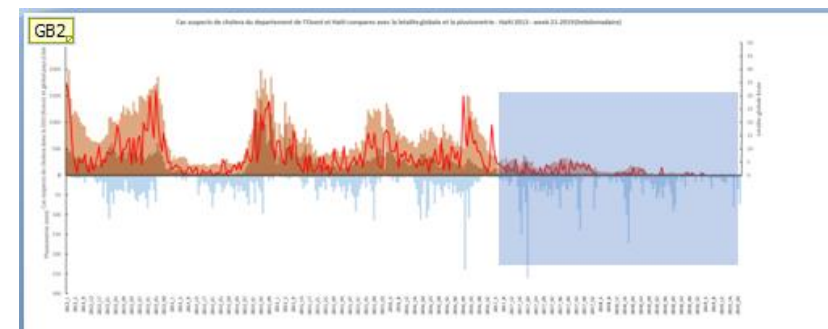


# Epidemiological Situation

Courbe épidémiologique de cas suspects de choléra, 2013-19

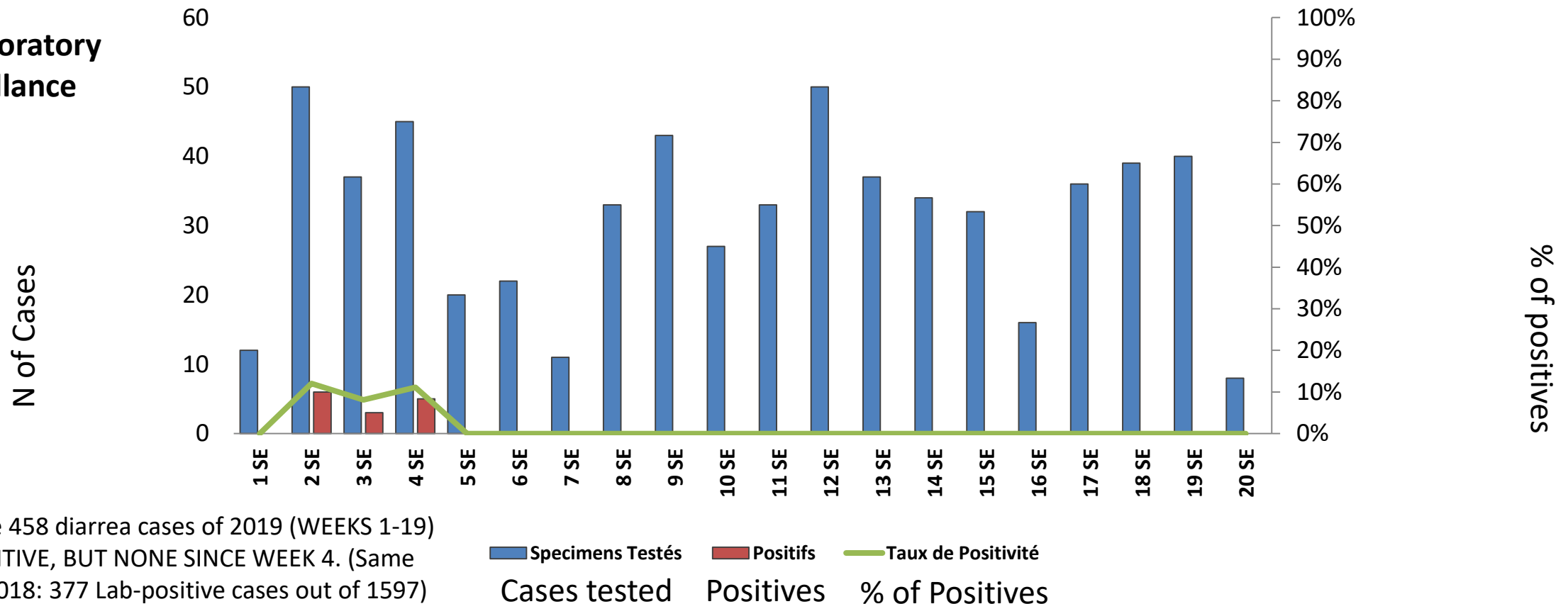


Number of suspected cholera cases: note no major « rainy season peak » post-2016.



# Cholera positive cases by culture in 2019 (up to EW 20, 2019)

## 3. Laboratory Surveillance



32 of the 458 diarrhea cases of 2019 (WEEKS 1-19) LAB POSITIVE, BUT NONE SINCE WEEK 4. (Same period 2018: 377 Lab-positive cases out of 1597)

- Epidemic dynamic: very weak incidence, and no confirmation post-Week 4 of 2019. Sixteen (16) weeks without a confirmed case suggests an « anticipated elimination », even if the strengthening of the surveillance system must still be carried out and maintained during the long term period of Haiti’s Nat. Cholera Elimination Plan (PNED-LT, 2019-2022).
  - Background noise, 8-20 weekly background classified as « suspected cholera cases » (given the current definition based on clinical diagnosis), which could be diarrheas in reality associated with other pathologies.
- The MSPP-defined « elimination threshold » (0,001%) is currently attained;



## 4a. Cholera hotspots in Haiti (2016-18) Quantitative Analysis

- Period: 2016 – 2018 (3 years)
- Geographic level: Commune
- Calculations
  - The **average** annual incidence (per 10 000)
    - Threshold: 15 suspected cases per 10 000
  - The **average** annual number of weeks that reported  $\geq 5$  suspected cases
    - Threshold: 20 weeks
    - (CHOLERA HOTSPOT DEFINITION (WHO): small areas with a heavy endemic, having a high and continued incidence and transmission intensity of cholera)

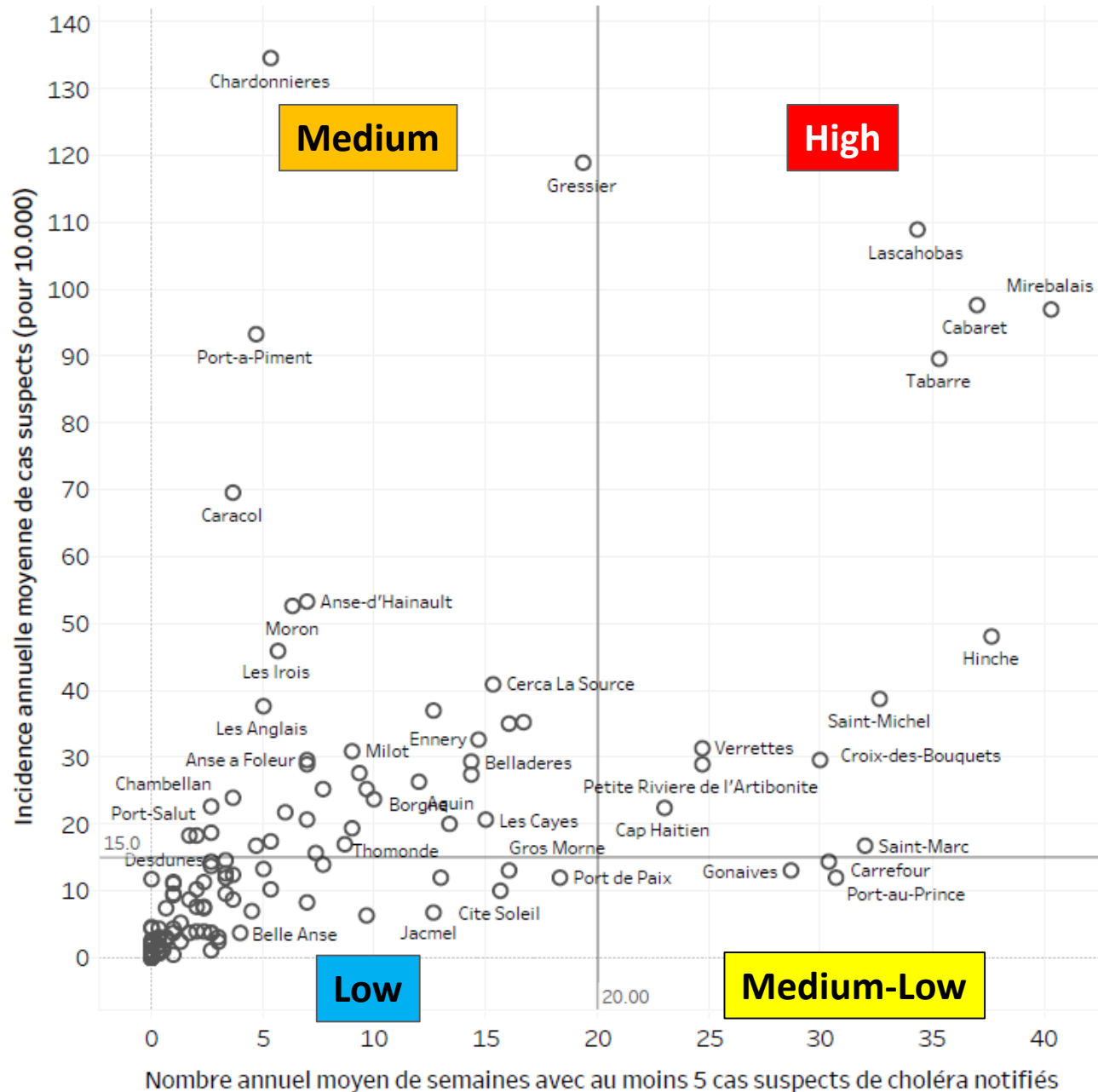


# Results

Communes de prise en charge par l'incidence annuelle moyenne (pour 10.000) et le nombre annuel moyen de semaines avec au moins 5 cas suspects de choléra notifiés, 2016-18

PRIORITY LEVEL	INTERPRETATION
<b>HIGH</b>	Communes located in the upper right area of the graph are districts with high incidence and high persistency of cholera . (Note Las Cahobas, Cabaret, Mirebalais, Tabarre, Hinche, Saint Michel, Croix-des-bouqueets, Verrettes, Petite Riviere de l'Artibonite, Cap Haitien, Saint Marc)
<b>MEDIUM</b>	Communes located in the upper left area of the graph are districts with high incidence but low persistency of cholera
<b>MEDIUM-LOW</b>	Communes located in the lower right area of the graph are districts with low incidence but high persistency of cholera
<b>LOW</b>	Communes located in the lower left area of the graph are districts with low incidence and low persistency of cholera

Question: what are the factors of a hotspot to maintain transmission, both during the ups and downs of incidence oscillation, which is very common in cholera epidemics in a given area of Haiti? Persistence during decreased cholera incidence is particularly crucial.





## 4b. Cholera hotspots in Haiti (2018-19) Qualitative Analysis

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- Period: 2018 – 2019
- Geographic level: Commune
- We considered communes with recent cholera outbreaks as priority
  - Cornillon-Grand Bois (border commune, main 2018 outbreak)
  - L'Estère

Note: Cornillon did not fulfill all of the hotspot criteria of a sustained restating of epidemiological incidence (high risk of active transmission below the radar of that diseases, and a capacity to maintain the continued transmission), given that the major epidemic of 2018 came and left several months later. Less for St. Marc and Croix des Bouquets, even looking at “suspected cases” data.



**MSPP (Ministère de Santé Publique et de la Population)**  
**DELR (Direction d'Épidémiologie, de Laboratoires, de Recherche )**

# Results

- Tabarre was removed because only 18% of cases resided in the commune in 2018 and 2019. 32% of cases reported in Tabarre resided in Croix-des-Bouquets
- Cornillon-Grand Bois and L'Estère were added by MSPP due to different contextual factors.

	Commune de prise en charge	Département	Incidence annuelle moyenne de cas suspects (pour 10.000) (2016-18)	Nombre annuel moyen de semaines avec au moins 5 cas suspects de choléra notifiés (2016-18)	Population (Ihsi-Unfpa 2019)	Population cumulée	% cumulée de la population haïtienne	% de cas suspects qui réside dans la commune (2018-19)	Status
High priority	Lascahobas	Centre	109	34	51,980	51,980	0.4%	76%	Remain
	Cabaret	Ouest	98	37	84,850	136,830	1.1%	91%	Remain
	Mirebalais*	Centre	97	40	110,771	247,601	1.9%	67%	Remain
	Hinche	Centre	48	38	136,959	384,560	3.0%	99%	Remain
	Saint-Michel**	Artibonite	39	33	178,356	562,916	4.4%	98%	Remain
	Verrettes	Artibonite	31	25	171,606	734,522	5.7%	*47%	Remain
	Croix-des-Bouquets	Ouest	30	30	310,367	1,044,889	8.1%	78%	Remain
	Petite Riviere de l'Artibonite	Artibonite	29	25	202,331	1,247,220	9.7%	85%	Remain
	Cap Haitien	Nord	22	23	298,210	1,545,430	12.0%	98%	Remain
	Saint-Marc	Artibonite	17	32	315,976	1,861,406	14.4%	88%	Remain
Added	Cornillon-Grand Bois	Ouest			74,177	1,935,583	15.0%	99%	Remain
	L'Estère	Artibonite			53,514	1,989,097	15.4%	75%	Remain

\*All communal sections had OCV vaccination campaigns in Nov.-Dec. 2017. Vaccination coverage (2 doses) of 71%

\*\* Some communal sections had OCV vaccination campaigns in Apr.-May 2018. Vaccination coverage (2 doses) of 96%

\*Verrettes treated only 32 suspected cases during this period, the lowest among the communes listed, therefore, this percentage is not reliable



# 5. Immediate Vaccination / WASH Accompaniment Cholera HOTSPOTS (12 communes)

## RECOMMENDATIONS:

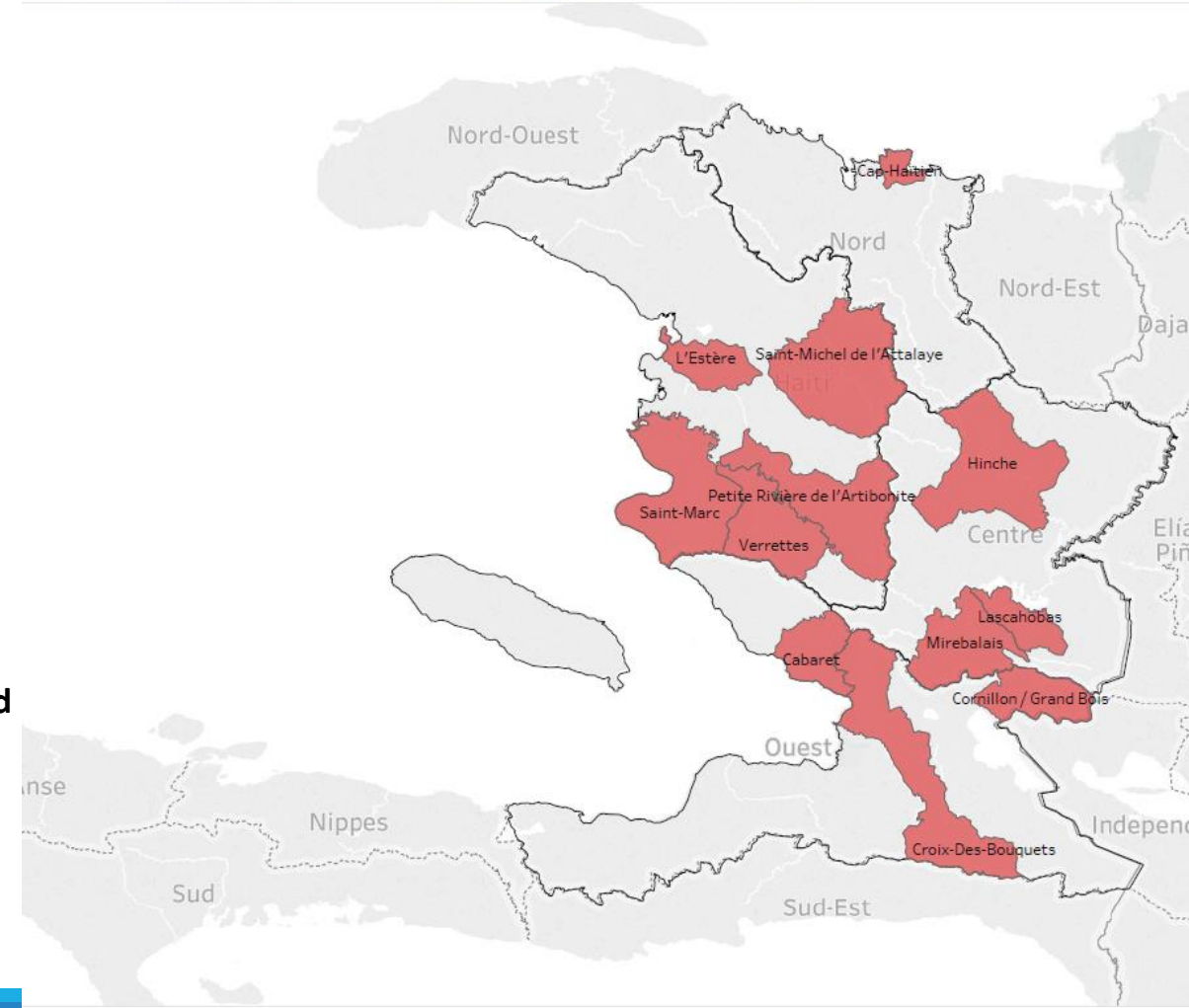
- 12 communes selected as hotspots, with 1,989,097 habitants (15% of the Haiti population). (St. Michel de l'Attalaye – Partial Vaccination)
- In this hotspots, cholera elimination strategies will be strengthened: epidemiological and lab surveillance, rapid response, WASH, health promotion
- For areas to vaccinate (OCV), a deeper analysis will be completed soon by MSPP. (Hotspots vaccinated in 2018: Mirebalais (FULL) and St. Michel (partial).)

To consider: Distribution of cases within communes is heterogenous between different communal sections, however, **logistically it is recommended to use commune as the smallest targeted geographic level. However, this decision will be made on a commune-by-commune basis, given that vaccinating in sections with virtually no incidence is a sub-optimal use of resources.**

**Areas to vaccinate is based on an assumption that future outbreaks, or that undetected outbreaks, bear a relationship to former outbreaks and transmission / incidence levels in the same location.**

**We know that this is not a perfect assumption, as outbreak areas shift over time, and that many areas in Haiti still possess high vulnerability to future outbreaks.**

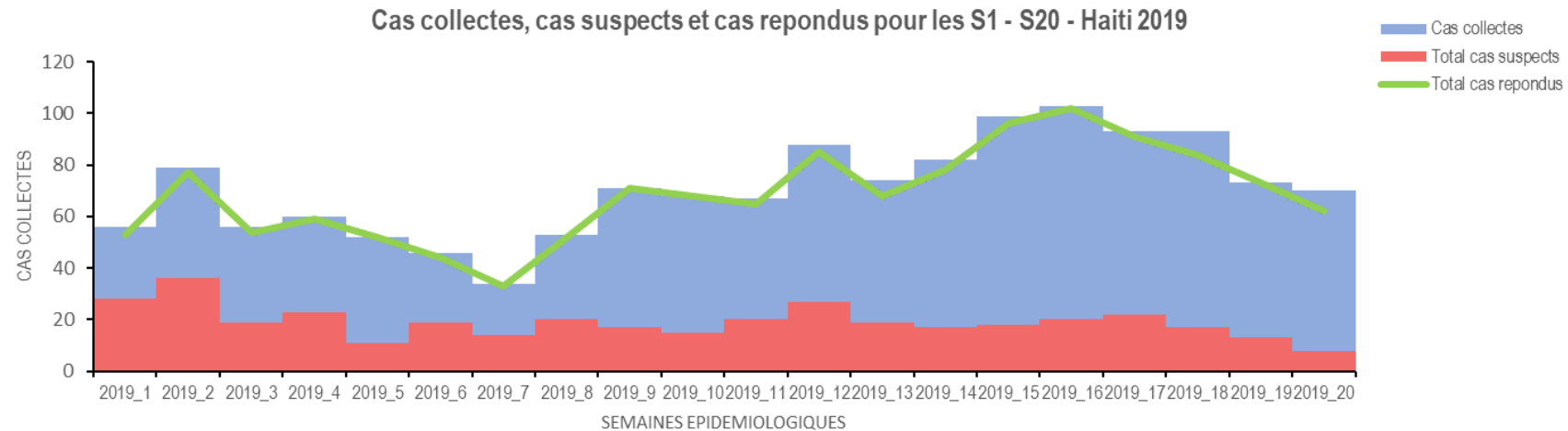
Communes de prise en charge selectionnées comme hotspots de choléra



## 6. RAPID REPONSE RESULTS 2019

Cas collectés et réponses en fonction des diagnostics cliniques de la la Semaine 20 — Haïti

Semaine 1 a



Rapid response: 2019: 96% of suspected cholera cases / 95% of all diarrhea cases WHERE suspected cases were treated, responded to (within 48h: **91%** of all suspected cases, and 87% of all diarrhea cases in acute diarrhea treatment centers receiving suspected cases) Compare with 85% and 90% in 2018 for the same period SE1-SE19 <48 hr). (Using cordon sanitaire methodology, 15-20 households, with adapted response for lab-positive cases).

Rapid Response <48h has contributed to increasing general neighborhood/community awareness, and has contributed to decreasing case-loads, based on a recent Case-Area Targeted Intervention (CATI) Effectiveness Study.

**KEY TAKE-HOME MESSAGE: A MINIMUM RESPONSE CAPACITY MUST BE MAINTAINED, 2019-2020**



# 7-Targeted WASH interventions in hotspots (2018-19)

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- 12 EMO-EPAH interventions in 3 geographic dep'ts: Centre/Ouest/Artibonite
  - Emergency piped potable water system (SAEP) repairs in cholera-vulnerable areas
  - SAEP manual chlorination
  - Sensitization and HHWT/TED product distribution
  - Installation and Potable Water Treatment Unit
  - Chlorination point monitoring
- 7 interventions in open market places in or near hotspots:
  - Gonaives, Hinche (and adjacent Maissade), Mirebalais, Limbe, Plaisance, Martissant (PauP)
  - Sanitary blocks, water points, sensitization
- Rehabilitation of water points, springs, community kiosks
- Temporary HHWT Promotion (via coupons) in Saint Michel (via coupons and subsidy of water committees) in parallel with an vaccination campaign.

## 8. HAITI'S PNEC-LT AXES WITH LIGHT STRATEGIC REVISIONS

In the Long Term of PNEC-LT (Nov. 2018-Dec. 2022), to maintain and sustain zero confirmed cases:

- A-Coordination, and Strengthening surveillance strategy for the next three years (PNEC-LT Axe 3)
- B-Fight against and preventing cholera transmission (PNEC-LT Axis 2, 3, 4)
- C-Consolidations of Gains in Long-Term Strategy (PNEC-LT Axis 4)

### A. Coordination and Strengthening surveillance strategy for the next three years (A.3):

- 1- Investigation, sampling, and sample transport for 100% of cases received in CTDAAs (cholera suspected and non-suspected cases)
  - 2- Strengthen random sampling in acute diarrhea diseases in sentinel surveillance (PRESEPI strategy), weekly sampling.
    - Already started in 2018 in the south of the country, to be expanded nationwide.
  - 3- Strengthen the investigation and sampling of every unusual event nationwide, in the community and all health institution (sentinel and non-sentinel). For example, for acute diarrhea cases:
    - EX: a-Clinically compatible with cholera AND b-Severe disease (including deaths) (c-others)
- SURVEILLANCE TOPICS IN LONG TERM STRATEGY: a-Pathways of evolution for surveillance 2019-2020, b-institutional surveillance, c-environmental surveillance, + d-cross-border surveillance.



## B1. Fighting against and preventing cholera transmission (PNEC-LT Axes 2,3,4) (cont'd)

- RAPID RESPONSE: Cordon sanitaire for each suspected case by EMIRA (Rapid Intervention Mobile Teams) + EMO-EPAH (Mobile WASH Teams) within 48 hr.
- Health promotion and social mobilization
- OCV: Oral Cholera Vaccination (cholera incidence hotspots, A.2)
- **Reactive vaccination (A.2)**
- WASH in active cholera hotspots (A.3)
  - Chlorination of water at distribution points, verification by DINEPA personnel (TEPAC/EMO-EPAH)
  - Household water treatment (HHWT)
- Curative care / Case mgt. of suspected cholera cases (A.2)

HAITI: PLAN NATIONAL ELIMINATION CHOLERA - LONG TERME (PNEC-LT)		
Axes Strategiques	Groupes d'actions	COÛT DES BESOINS
		US\$
1-Gouvernance et aide a la decision	Coordination	1,211,520.00
	Gestion de l'information	149,000.00
	Recherche	480,000.00
	Suivi et evaluation	2,400,230.00
	Controle de qualite communication	3,494,500.00
<b>Sous -total gouvernance et aide a la decision</b>		<b>10,726,250.00</b>
2-Acces aux soins	Soins preventifs	9,559,315.00
	Soins curatifs	11,593,000.00
<b>Sous total Acces aux soins</b>		<b>21,152,315.00</b>
3-Lutte contre la transmission	Alerte	3,966,080.00
	Surveillance Communautaire	894,825.00
	Surveillance en laboratoire	1,571,400.00
	Reponse Rapide	17,500,000.00
	Traitement d'Eau a Domicile	6,664,007.00
<b>Sous -total lutte contre la transmission</b>		<b>30,596,312.00</b>

## C. CONSOLIDATIONS OF CHOLERA ELIMINATION (PNEC-LT AXE 4, SUSTAINABLE)

### 1. Coordinated by the Minister of Public Health and Population (MSPP):

- Strengthening of patient care in treatment centers, prioritizing areas with insufficient coverage

### 2. Coordinated by DINEPA:

- Potable Water Infrastructure and service coverage (100% of WASH targeted areas communes and communal sections, U/R coverage)
  - i-Water treatment, ii-Water quality monitoring and iii-results publishing
- Extend commune-level WASH action plan and Particular Intervention Plan (PAC, PPI) from 5 already-completed Communes to all 25 PNEC-LT WASH priority communes
- Sanitation strategies both at the toilet usage, desludging and treatment / valorization, target solid waste management support. MAIN GOALS for priority areas: i-End open air defecation, and ii-End unregulated human waste dumping \*

**NB: Funding requirements: AXES 1-4 US\$397 MILLION**

**assessed needs for Nov. 2018 – Dec. 2022.**

HAÏTI: PLAN NATIONAL ELIMINATION CHOLERA - LONG TERME (PNEC-LT)		
Axes Strategiques	Groupes d'actions	COÛT DES BESOINS
		US\$
<b>Sous -total lutte contre la transmission</b>		<b>30,596,312.00</b>
4-consolidation des acquis: Eau, Assainissement, sante	Renforcement de la prise en charge	15,250,000.00
	Infrastructures et Services d'Eau Potable	271,120,378.20
	Chloration d'Eau	4,495,156.22
	Service Public d'Assainissement Non	2,154,000.00
	Assainissement familial	15,239,950.00
	Assainissement dans les lieux de vente	5,417,486.72
	Assainissement dans les ecoles	7,592,028.86
	Gestion des boues fecales	6,370,000.00
	Gestion des dechets solides	7,000,000.00
<b>Ss total axe IV</b>		<b>334,639,000.00</b>
<b>COÛT TOTAL : AXES : I+ II+ III+ IV</b>		<b>397,113,877.00</b>





MERCI!

# Thank you

Together we can  
#endcholera



GLOBAL TASK FORCE ON  
CHOLERA CONTROL

MSP

