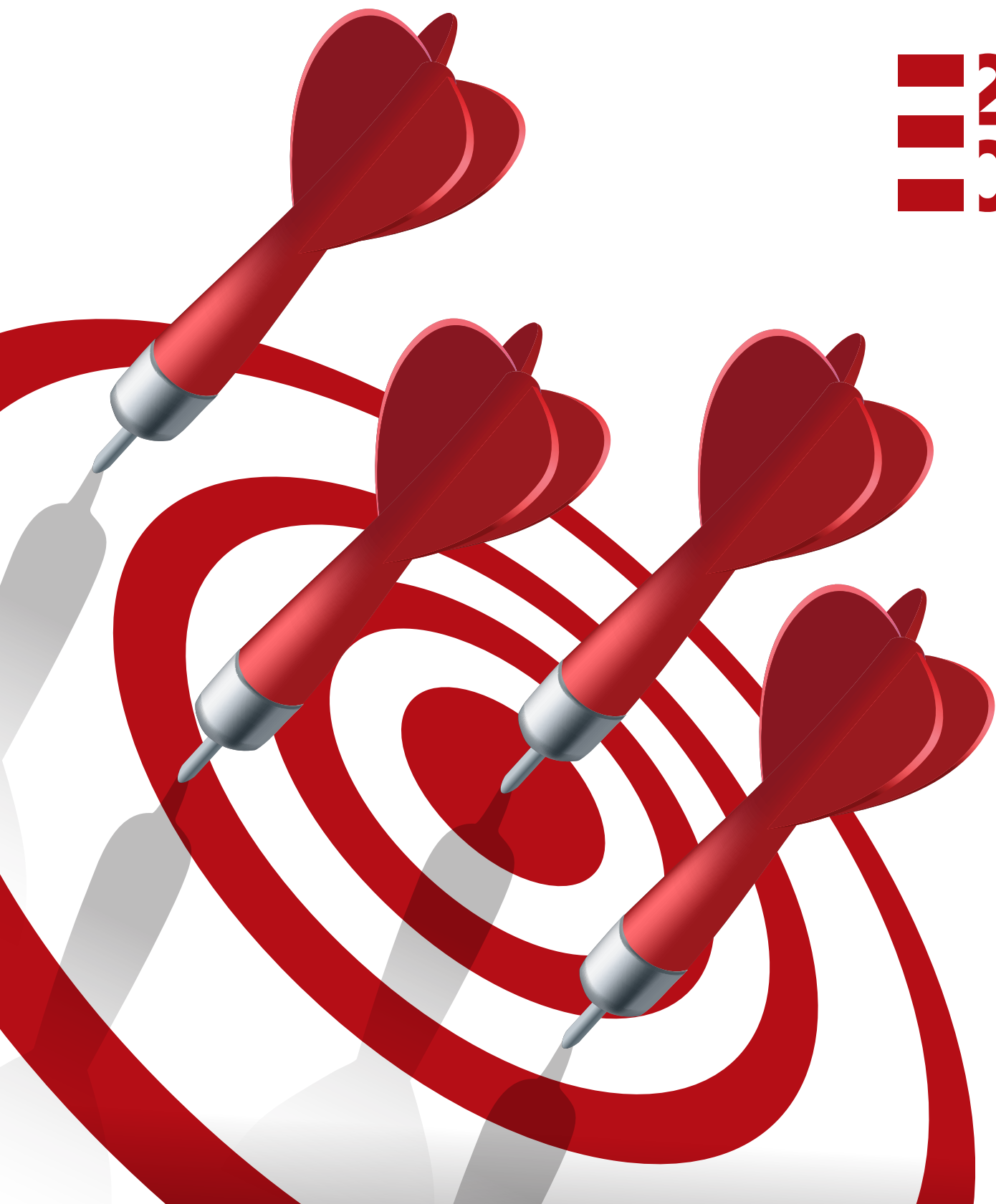


ZEROING IN ON MALARIA ELIMINATION:

Final report of the
E-2020 initiative

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Foreword

In recent years, WHO has sounded the alarm over worrying trends in the global response to malaria: progress has levelled off, and many countries hardest hit by the disease have been losing ground.

At the same time, a growing number of countries with a low burden of malaria have been moving with steady determination towards the target of zero malaria, providing a source of inspiration for all malaria-endemic nations that are working to stamp out the disease.

Since 2017, WHO has supported a group of 21 malaria-eliminating countries through a special initiative called the “E-2020”. This report charts their progress towards a common goal: eliminating malaria within the 2020 timeline.

As described in these pages, many countries that reached zero malaria cases carried, at one time, a very high burden of malaria. Their elimination successes have shown the world that getting to zero is a viable goal for all countries, no matter how near or far they may be from that target today.

In 1965, El Salvador reported the highest number of malaria cases in Central America. Following a more than 50-year commitment, the country became the first in the region to eliminate the disease. El Salvador was certified malaria-free by WHO earlier this year – an impressive feat for a country that shares open borders with two malaria-endemic nations.

In 2019, Algeria became the third country in Africa to be certified malaria-free. Underpinning this achievement was a well-trained health workforce, a rapid response to disease outbreaks and a resolve to

leave no one behind: everyone in Algeria receives free diagnosis and treatment, regardless of nationality or legal status.

Although each country’s elimination journey is unique, common drivers of success have been seen across all regions. Political commitment to ending the disease often transcends any one government and is maintained over many decades. This commitment is translated into domestic funding and actions that prevent malaria transmission and save lives.

Most countries that succeed in eliminating malaria offer free primary health care, ensuring that all people in need of malaria services can access them without financial hardship. Robust data systems and the engagement of communities are also key drivers of success.

According to this report, eight E-2020 member countries reported zero indigenous cases of malaria in 2020, a remarkable achievement in view of the ongoing global COVID-19 pandemic. Maintaining zero cases is a testament to their commitment to protect hard-won gains and keep the disease at bay.

WHO and partners continue to stand by all countries that are working to end this deadly scourge, at every step of the journey. The road to malaria elimination is not quick, nor is it easy. But with sustained commitment and collaboration, we can achieve our common vision of a malaria-free world.

Dr Pedro Alonso
Director, Global Malaria Programme
World Health Organization

“ Malaria control should not be a campaign; it should be a policy, a long-term programme. It cannot be accomplished or maintained by spasmodic effort. It requires the adoption of a practicable programme, the reasonable continuity of which will be sustained for a long term of years. ”

Mark F. Boyd (1939)

E-2020 initiative: a brief overview

The WHO *Global technical strategy for malaria 2016–2030*,¹ endorsed by the World Health Assembly in May 2015, is designed to guide and support all malaria-affected countries as they work to reduce and eliminate the human suffering caused by the world’s deadliest mosquito-borne disease.

The strategy sets ambitious targets aimed at dramatically lowering the global malaria burden over a 15-year period, with milestones at each five-year mark to track progress (see table below). A key milestone for 2020 is the elimination of malaria in at least 10 countries that had the disease in 2015.

In 2016, WHO identified a group of 21 countries across five regions with the potential to reach this milestone. Countries were selected based on an

analysis that considered the likelihood of elimination across three key criteria:

- ① trends in malaria case incidence between 2000 and 2014;
- ① declared malaria elimination objectives of affected countries;
- ① informed opinions of WHO experts in the field.

Through the E-2020 initiative, launched in 2017, WHO supported these 21 countries in their efforts to achieve zero indigenous cases of malaria within the 2020 timeline. While some countries did not meet the 2020 elimination goal, they remain committed to ridding their populations of the last vestiges of this disease.

Goals, milestones and targets of the *Global technical strategy for malaria 2016–2030*

Vision – A world free of malaria

GOALS	MILESTONES		TARGETS
	2020	2025	2030
1. Reduce malaria mortality rates globally compared with 2015	At least 40%	At least 75%	At least 90%
2. Reduce malaria case incidence globally compared with 2015	At least 40%	At least 75%	At least 90%
3. Eliminate malaria from countries in which malaria was transmitted in 2015	At least 10 countries	At least 20 countries	At least 35 countries
4. Prevent re-establishment of malaria in all countries that are malaria-free	Re-establishment prevented	Re-establishment prevented	Re-establishment prevented



¹ Global technical strategy for malaria 2016–2030. Geneva: World Health Organization; 2015 (<https://apps.who.int/iris/handle/10665/176712>, accessed 20 April 2021).

WHO guidance

To guide countries in their elimination journeys, WHO developed the 2017 *Framework for malaria elimination* with an updated set of tools, activities and strategies.² It outlines the critical requirements needed to achieve and maintain elimination, such as national case-based surveillance systems, quality data management, and robust human and financial resources.

The framework includes a clearly defined process for countries to obtain a malaria-free certification from WHO. It introduces, for the first time, the concept of subnational malaria elimination, which is particularly relevant for large countries like Brazil, China and


Mexico as well as countries with significant variation in transmission levels, such as Ethiopia, Kenya and Madagascar. The framework also offers guidance on setting targets and systems to verify malaria-free areas within a country's borders, which can be an important building block for obtaining national certification.

In January 2021, WHO published a new manual, *Preparing for certification of malaria elimination*,³ with extended guidance for countries that are approaching elimination and preparing for malaria-free certification.

Global forums and advisory bodies

To keep elimination high on the agenda in E-2020 countries, WHO convened three global forums that brought together malaria programme managers from the 21 countries. The forums provided an important platform for technical experts from all regions to share progress, challenges and lessons learned. The inaugural forum, held in March 2017, led to the creation of two new independent WHO advisory bodies:

 The **Malaria Elimination Oversight Committee** guides countries in their efforts to reach the target of zero malaria. The committee aims to maintain a 360-degree overview of how countries and regions are advancing towards this goal. Progress is assessed through programme reviews and occasional field visits.

 The **Malaria Elimination Certification Panel** is tasked with verifying a country's malaria-free status. After reviewing evidence submitted by countries, analyzing independent sources and conducting on-site evaluation missions, members of the panel make a recommendation to WHO to either certify a country as malaria-free or to postpone certification.

The second E-2020 global forum in Costa Rica, held in June 2018, saw Paraguay officially certified as malaria-free. China hosted a third forum in June 2019 focused on populations at high risk of malaria infection.

STOP-Malaria

In 2019, WHO launched a new programme, in collaboration with partners, to address the shortage of skilled technical staff at the district and provincial levels in countries working to eliminate malaria. Through the STOP-Malaria programme, consultants were deployed to five countries in 2020 – Botswana,

Cabo Verde, Eswatini, Namibia and Sao Tome and Principe – to support their elimination efforts at the subnational level. The consultants provided a range of support to malaria elimination programmes in these countries, from case management and case-based surveillance to vector control.

² A framework for malaria elimination. Geneva: World Health Organization; 2017 (<https://apps.who.int/iris/handle/10665/254761>, accessed 20 April 2021).

³ Preparing for certification of malaria elimination. Geneva: World Health Organization; 2020 (<https://apps.who.int/iris/handle/10665/337837>, accessed 20 April 2021).

Malaria elimination certification **at a glance**

Certification of malaria elimination is the official recognition by WHO of a country's malaria-free status. WHO grants this certification when a country has proven, beyond reasonable doubt, that the chain of indigenous malaria transmission by *Anopheles* mosquitoes has been interrupted nationwide for at least the past three consecutive years.

A country must also demonstrate the capacity to prevent the re-establishment of transmission. A national surveillance system able to rapidly detect and respond to malaria cases (if they are occurring) must be operational, together with appropriate

measures to prevent onward transmission from any imported cases of the disease.

The final decision on awarding a malaria-free certification rests with the WHO Director-General, based on a recommendation by the Malaria Elimination Certification Panel. This process is voluntary and can be initiated only after a country has submitted an official request to WHO. Globally, a total of 39 countries and territories have been certified malaria-free.



Reaching the **elimination milestone**

This report assesses country progress at the finishing line of the E-2020 initiative. To reach the elimination milestone of the WHO global strategy, a country that was malaria-endemic in 2015 had to achieve at least one year of zero indigenous cases, and then maintain that status through the end of 2020. Seven E-2020 member countries⁴ succeeded in reaching this milestone: Algeria, Belize, Cabo Verde, China, El Salvador, the Islamic Republic of Iran and Malaysia.⁵

Additionally, three countries that were not part of the E-2020 initiative – Azerbaijan, Sri Lanka and Tajikistan –

reached the milestone. All three countries had already achieved the target of zero indigenous cases by 2017, when the E-2020 initiative was first formed.

Now begins a new initiative: the E-2025. WHO has identified a new cohort of 25 countries that could eliminate malaria within the next five years. At the time of this publication, E-2025 countries continue to respond to the dual threat of malaria and COVID-19. But as the stories in this report show, elimination is possible, even in the face of extreme challenges.

⁴ When WHO first conducted its analysis of malaria-eliminating countries in 2016, preliminary estimates at the time showed that Paraguay was still malaria-endemic. These estimates were later corrected as more data became available and showed that Paraguay achieved zero indigenous cases for the period 2012-2014. As such, the country was no longer considered malaria-endemic in 2015 and its success does not count towards the attainment of the 2020 elimination milestone of the WHO global malaria strategy.

⁵ Although Malaysia has eliminated the malaria species transmitted between people (*P. falciparum*, *P. vivax*, *P. ovale* and *P. malariae*), the *P. knowlesi* parasite, normally found in monkeys, continues to infect a large number of people.

Eliminating malaria in the context of COVID-19

Since early 2020, the pandemic has disrupted nearly all health services – whether they were routine or emergency response. Malaria was no different.

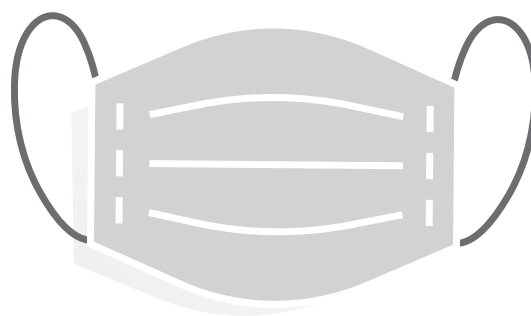
Firefighting a virus that was spreading at top speed across the globe required an extraordinary surge capacity. To meet this need, governments diverted human and financial resources away from national malaria programmes to tackle COVID-19; in some cases, nearly all national malaria programme staff were detailed to the pandemic.

To reduce the spread of COVID-19, countries implemented lockdowns and restrictions on the movement of people and goods. This led, in many cases, to delays in the delivery of malaria preventive measures, such as the spraying of insecticides in homes and the provision of insecticide-treated nets.

In Bhutan, the delayed distribution of nets and other disease control tools led to a spike in malaria cases in 2020. Following lockdowns that prevented health workers from travelling quickly to rural areas, Timor Leste – a country that had reported zero indigenous cases of malaria in 2018 and 2019 – saw an outbreak of the disease along its shared border with Indonesia in mid-2020.

Malaria diagnosis and treatment services were also interrupted during the pandemic as many people were unable – or unwilling – to seek care in health facilities. According to the results of a recent WHO survey, one third of countries reported experiencing disruptions in the delivery of malaria services in the first three months of 2021. Many people are not seeking care due to the fear of contracting COVID-19.

COVID-19 has affected malaria case numbers in other ways, too. In Botswana, for example, a sharp rise in malaria cases in mid-2020 is thought to have resulted from an increase in the number of people travelling from urban to rural areas in anticipation of lockdowns.



In all E-2020 countries but one (Saudi Arabia), restrictions on movement due to COVID-19 have led to lower rates of imported malaria cases, reducing the risk of local transmission of the disease. Countries that have seen the greatest drop in importation rates are: Cabo Verde, Belize and El Salvador (100%); Timor-Leste (89%); Eswatini (75%); Malaysia (74%); Bhutan (70%); Republic of Korea (61%); China, Mexico and South Africa (59%).⁶

Some countries managed to maintain and even strengthen their malaria elimination efforts during the pandemic. Of the 21 E-2020 countries, eight have successfully kept malaria at bay during the pandemic, reporting – as of April 2021 – zero indigenous cases of the disease. These countries include Algeria, Belize, Cabo Verde, China, El Salvador, the Islamic Republic of Iran, Malaysia and Paraguay.


In the face of the pandemic, Algeria bolstered its surveillance system, ensuring active screening, detection, and management of malaria cases. Eswatini switched to conducting malaria case investigations by telephone after mobility restrictions prevented teams from going to the field.

⁶ Data provided by national malaria programmes.

Elimination progress

Number of reported indigenous malaria cases in E-2020 countries, by WHO region, 2012–2020

Country	2012	2013	2014	2015	2016	2017	2018	2019	2020*	↑** 0 ↓
Algeria 	55	8	0	0	0	0	0	0	0	0
Botswana	193	456	1 346	284	659	1 847	534	169	864	↑
Cabo Verde	1	22	26	7	48	423	2	0	0	0
Comoros***	49 840	53 156	2 203	1 884	1 467	3 896	15 613	17 599	4 546	↓
Eswatini	409	728	389	318	250	440	686	239	234	↓
South Africa	6 621	8 645	11 705	4 959	4 323	23 381	9 540	3 096	4 463	↑
Belize	33	20	19	9	4	7	3	0	0	0
Costa Rica	6	0	0	0	4	12	70	95	91	↓
Ecuador	544	368	242	618	1 191	1 275	1 653	1 803	1 921	↑
El Salvador 	13	6	6	5	12	0	0	0	0	0
Mexico	833	495	656	517	551	736	803	618	345	↓
Paraguay 	0	0	0	0	0	0	0	0	0	0
Suriname	569	729	401	81	76	19	29	95	148	↑
Iran (Islamic Republic of)	756	479	358	167	81	57	0	0	0	0
Saudi Arabia	82	34	30	83	272	177	61	38	107	↑
Bhutan	82	15	19	34	15	11	6	2	22	↑
Nepal	3 230	1 974	832	591	507	623	493	127	71	↓
Timor-Leste	5 518	1 223	411	80	81	16	0	0	1	↑
China	244	83	53	39	1	0	0	0	0	0
Malaysia	2 050	1 092	604	242	266	85	0	0	0	0
Republic of Korea	394	383	557	627	602	436	501	485	362	↓

 Countries that reported zero indigenous cases of human malaria in 2020



Countries that have been certified malaria-free by WHO

Source: national malaria programmes

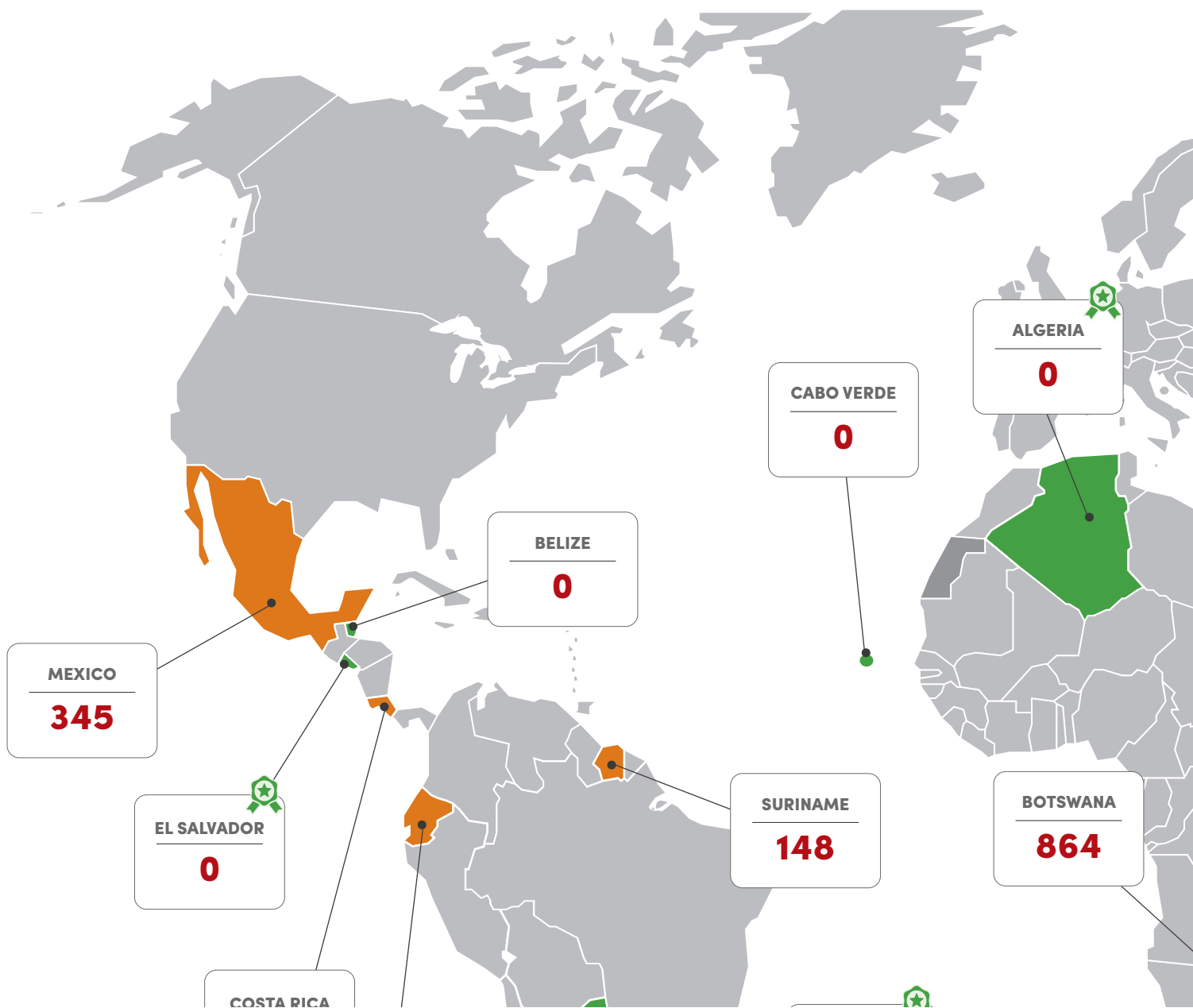
* Preliminary numbers of indigenous or local (indigenous and introduced) human malaria cases as of 1 April 2021, as reported by national malaria programmes, except where noted. Final figures will be reported in the *World malaria report 2021*.

** Change in indigenous malaria cases between 2019 and 2020

*** Comoros is reporting total malaria cases as classifications have not yet been completed.

E-2020 countries

Snapshot of indigenous malaria cases in 2020



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