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U.S. President's Malaria Initiative

Case study

Madagascar: Building on longstanding community networks to maintain access to insecticide-treated nets (ITNs) during the COVID-19 pandemic

Key enabling factors for maintaining ITN access in Madagascar during the COVID-19 pandemic

- For more than twenty years, the Madagascar Ministry of Health (MOH) has worked with communities to extend health services and ITN provision, as well as establishing strong community networks
- Building from these strong community foundations, the National Malaria Control Programme (NMCP) has included *Distribution communautaire continue* (Community-based Continuous Distribution or DCC) as part of its current National Malaria Strategic Plan (NMSP). DCC is designed to fill in gaps in ITN access between campaigns created by ITN loss, new sleeping spaces generated from births and/or newly established families. DCC provides ITNs to any household with an uncovered sleeping space.
- DCC builds on functional community supply systems already in place, such as the *Point d'Approvisionnement Relais Communautaire* (Community Relay Supply Points or PARC) and *Point d'Approvisionnement* (Supply Points or PA) supported by Population Services International (PSI) for community-based distribution of health products at *Fokontany*-level^{1,2}.
- Madagascar has a long history and strong culture of ITN use and DCC supports maintaining this high use by ensuring that households have new ITNs in their households when they are needed.

ITN use among those with access in Madagascar is excellent, indicating a strong culture of net use. SBC efforts should focus on maintaining good ITN use behaviours. Maintaining high levels of ITN access is important so that more individuals have an ITN to use within their household. Lower use among school-age children and older adults is likely to be resolved through increasing ITN access.

Source: President's Malaria Initiative (PMI, 2020). ITN Access and Use Report, Madagascar. Retrieved November 19, 2020, from <https://breakthroughactionandresearch.org/resources/itn-use-and-access-report/madagascar/>

¹ Fokontany = community

² Madagascar MOH, Direction de Lutte Contre le Paludisme (2019). Stratégie de Mise en Œuvre de la Distribution Continue Communautaire de Moustiquaires Imprégnées d'Insecticide à Effet Durable 2019—2020.

Achievements

- Madagascar has successfully implemented community-based distribution pilots which showed increased equitable ITN ownership and decreased malaria cases. Building on evidence from successful pilots, the NMCP has established plans to roll out community-based distribution on a broader scale as part of the NMSP^{3,4}.
- More than 2,949 *Kom'LAY* (ITN committees) have been put in place across 12 districts, each led by the Chef Fokontany (Community leader). The Chef Fokontany ensures general coordination of DCC activities, with support from the Chef du Centre de Santé de Base (health centre in-charge), Chef de Zone d'Administration Pédagogique (school director supervisor). The *Kom'LAY* supervise community ITN mobilizers who support community education, identify beneficiary households, and provide coupons; community ITN distributors who ensure ITN storage at fokontany level, distribute ITNs to households, and collect coupons; and teachers who support community mobilization and education.
- To address declining stock levels at community distribution points due to COVID-19, the NMCP and ITN logistics partner PSI are leading ITN resupply efforts. This should ensure ITN stock availability and support the resumption of ITN distribution in areas where it had been interrupted due to stock-outs.
- The replenished stock will be used to retroactively cover households with uncovered sleeping spaces which did not receive an ITN due to COVID-19 related stock-outs.

Lessons learned and recommendations

- Pre-positioning ITNs at district level is insufficient to ensure continued ITN distribution to communities and households during a national health crisis, such as COVID-19. Moving forward, the NMCP will work with partners to ensure pre-positioning of higher volumes of stock at the community level. This may require additional storage and security.
- Integrated communication, to include malaria and other health updates and key messages within the COVID-19 response, is necessary. Stand-alone malaria messages get lost in the midst of active national COVID-19 response updates and key messages. Integrated messaging and communication tools improve the visibility of messages to describe actions to take in the face of potential overlapping COVID-19 and malaria fever symptoms, to mitigate the risks of COVID-19 fears reducing malaria care seeking, and to ensure knowledge of where to access ITNs and the importance of their continued use during COVID-19.
- Indoor residual spraying (IRS) will be discontinued for seven districts in Madagascar, following their receipt of ITNs during campaign distribution. The DCC approach has been identified as part of the IRS exit plan to maintain preventive measures for malaria at household level⁵.

³ Zeger de Beyl, C., Kilian, A., Brown, A., Sy-Ar, M., Ato Selby, R., Randriamanantenasoa, F., et al (2017). Evaluation of community-based continuous distribution of long-lasting insecticide-treated nets in Toamasina, Madagascar. *Malaria Journal* (2017) 16:327.

⁴ Ibid.

⁵ Madagascar MOH, Direction de Lutte Contre le Paludisme (2019).

Country context

Since the country's first mass distribution ITN campaign in 2009 and launch of ITN distribution via routine health services in 2010, Madagascar successfully reduced malaria to historic lows in 2014. However, increasing malaria cases and deaths since then have raised concerns about whether the country can achieve the ambitious targets set to move toward elimination. The number of confirmed cases increased from 471,599 in 2016 to 965,390 in 2018, while malaria deaths increased from 561 to 927 during the same time period⁶.

Madagascar's Ministry of Health NMCP has set clear goals in the 2018—2022 National Malaria Strategic Plan (NMSP) to increase the number of districts moving toward elimination from five to 13 and to reduce malaria mortality to zero by 2022. To achieve these goals, the NMSP includes an objective to protect 90 per cent of the population from malaria in zones targeted for ITN distribution.

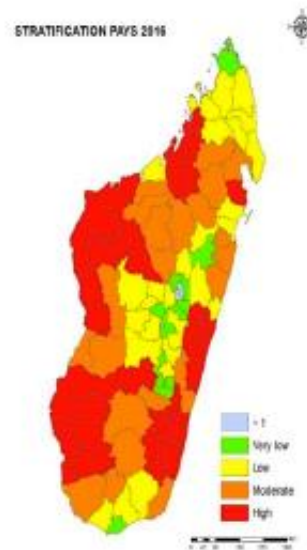


Figure 1. Madagascar, Malaria incidence, 2016
Source: Madagascar 2018-2022 National Malaria Strategic Plan

The COVID-19 pandemic has had a severe effect on the health system in Madagascar. As of early December 2020, more than 17,500 people have tested positive for COVID-19 in Madagascar, with 259 deaths recorded⁷. The government of Madagascar introduced a national state of health emergency and curfews in many areas in March 2020, with curfews lifted on 5 October. The state of health emergency is, however, still in effect⁸.

Large cities have been hardest hit by COVID-19 in Madagascar. While schools were closed at the onset of COVID-19, many health centres remained open and put in place physical distancing measures. During this time, the population did seek COVID-19 testing at health centres, as well as health care services. The capital Antananarivo remains most affected by COVID-19 in Madagascar, with clusters shifting to other regions including Diana, Sava and Vatovavy-Fitovinany. The seven-day running average number of cases and deaths has been decreasing since late September⁹.

Madagascar has one of the highest poverty rates in the world. Prior to COVID-19, the economy had experienced five years of growth, following previous stagnation¹⁰. According to The World

⁶ President's Malaria Initiative (PMI) Madagascar Malaria Operational Plan (MOP), FY2020.

⁷ <https://www.worldometers.info/coronavirus/country/madagascar/>

⁸ Garda (2020). *Madagascar: COVID-19 curfew lifted as state of health emergency extended until October 18*. Retrieved November 13, 2020 from <https://www.garda.com/crisis24/news-alerts/386456/madagascar-covid-19-curfew-lifted-as-state-of-health-emergency-extended-until-october-18-update-18>

⁹ UNICEF (2020). *Madagascar Situation Report*, 30 September 2020. Retrieved November 13, 2020, from <https://www.unicef.org/media/83806/file/Madagascar-COVID-19-SitRep-30-September-2020.pdf>

¹⁰ The World Bank in Madagascar Overview. Retrieved November 30, 2020, from <https://www.worldbank.org/en/country/madagascar/overview>

Bank, the collapse of international trade and tourism as a result of COVID-19 has had significant effects on the economy and people's livelihoods, indicating that "extreme poverty is predicted to increase in 2020, undoing three years of consecutive declines"¹¹.

Following the confirmation in Madagascar of the first cases of COVID-19 on 20 March 2020, the Malagasy President suspended all international travel and put in place transport restrictions for all but essential goods and stay-at-home orders in several major cities¹². At this time, some *Fokontany* had low levels of ITN stock for routine distribution through antenatal care (ANC) and Expanded Programme on Immunization (EPI) and the transport restrictions limited options to resupply them. In some cases, community sites had sufficient quantities of ITNs in place to continue community level distribution, but in other cases distribution was stopped due to ITN stock-outs which persisted until restrictions on internal transport were lifted in July. From February to September 2020, Madagascar only distributed 124,624 ITNs (34 per cent) of a planned ITN distribution objective of 366,542 ITNs.

As concerns about COVID-19 spread, many households were not willing to accept household visits from community health agents. As cases of COVID-19 were recorded among some community health agents, this also reduced outreach and ITN distribution. Schools were closed in Madagascar from March until partially re-opening in October/November 2020, which eliminated an important social mobilization network as children in their last year of primary school are usually mobilized to reinforce ITN use at community and household level.

ITN distribution in Madagascar

More than 64 million ITNs have been delivered within Madagascar since 2004¹³. ITNs are distributed in Madagascar through four primary channels. These include:

- Universal coverage campaigns to provide one ITN for every two people in targeted districts through mass distribution
- Routine health services to provide an ITN to pregnant women at their first ANC visit, children under one who have completed their recommended routine immunizations, and children under five presenting with illness at a health facility
- Continuous community-based distribution, or *Distribution Continue Communautaire* (DCC), which is designed to fill in gaps in ITN access between campaigns created by ITN loss, new sleeping spaces generated from births and/or newly established families. DCC provides ITNs



ITN distribution by community ITN distributor (pre-COVID-19)

¹¹ The World Bank (2020). Madagascar: World Bank Provides \$75 Million to Mitigate the Impacts of COVID-19 and Support Recovery. Press Release 3 September 2020. Retrieved November 13, 2020, from <https://www.worldbank.org/en/news/press-release/2020/09/03/madagascar-world-bank-provides-75-million-to-mitigate-the-impacts-of-covid-19-and-support-recovery>

¹² GardaWorld. Madagascar News Alerts. Retrieved 30 November 2020 from: https://www.garda.com/crisis24/news-alerts?search_api_fulltext=Madagascar&field_news_alert_categories=All&field_news_alert_crit=All&items_per_page=20&page=1

¹³ Alliance for Malaria Prevention, Net Mapping Project, 2020 Third Quarter Report.

to any household with an uncovered sleeping space. Remote areas that are located more than five kilometres from a basic health centre are prioritized

- Social marketing, to provide subsidized ITNs for sale in urban areas of Madagascar to provide an alternative source of ITNs

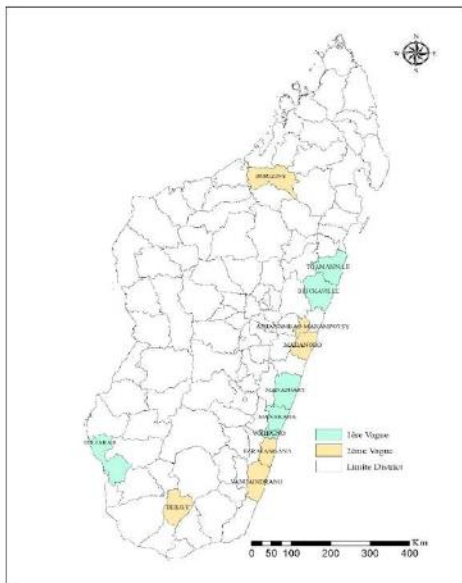


Figure 2. DCC is rolling out in wave one districts (green) followed by wave two districts (yellow)

Source: Madagascar ITN DCC Strategy

In line with Madagascar’s epidemiological stratification and NMCP expectations for progress in reducing malaria incidence, the NMCP plans to focus ITN distribution in 2021 via mass campaigns in 101 districts and via routine health services (ANC and EPI) in 101 districts. Among Madagascar’s 114 districts, 39 districts will remain targeted for DCC, and urban zones in all 21 regions for the distribution of subsidized ITNs through social marketing. Among the 39 districts targeted for DCC in Madagascar, the national DCC strategy identified 12 districts where implementation should begin, with a first wave in six of those districts and a second wave in the remaining six districts. The first wave of ITN DCC began in six districts prior to COVID-19. However, the start of the distribution for the six districts in wave two of DCC delivery, expected to have begun on 20 July 2020, was delayed.

Even with more than 3,600 basic health centres in Madagascar, approximately half of *Fokontany* are located more than 10 kilometres from a basic health centre and a quarter of health centres are not connected to the official road network¹⁴. This poses significant challenges to ensuring access to health services as well as ITNs to the more than 18.5 million people living in areas of moderate to high vulnerability to malaria¹⁵.

Between 2008 and 2016, in districts targeted for ITN distribution in Madagascar, the number of children under five reported as sleeping under a bednet the previous night increased from 58 per cent to 84 per cent¹⁶. Even before the arrival of factory-treated ITNs, Madagascar has a long history and strong culture of net use. Currently, Madagascar has the highest ITN use:access ratio of any PMI country, “driven by a high average number of users per net”¹⁷.

Community health systems in Madagascar

To extend services to remote populations, Madagascar’s MOH has supported a number of approaches for community-based health service delivery for more than twenty years. Since the mid-1990s, the *Kaominina Mendrika Salama* (KMS, Champion Health Communities) approach in

¹⁴ The World Bank (2018). Madagascar Road Connectivity. Project.

¹⁵ Madagascar MOH, Direction de Lutte Contre le Paludisme (2017). *Plan Stratégique National de Lutte contre le Paludisme 2018-2022*.

¹⁶ PMI MOP FY2020.

¹⁷ PMI (2020). ITN Access and Use Report, Madagascar. Retrieved 19 November 2020, from <https://breakthroughactionandresearch.org/resources/itn-use-and-access-report/madagascar/>

Madagascar encouraged “community members to create goals for improved community health, identify activities that contribute to the goals, track progress, and support all local actors to work together to achieve the goals”¹⁸. The JSI Research and Training Institute MAHEFA¹⁹ programme in Madagascar built on the KMS approach and extended it to Champion Health Communities Reaching Higher from 2011—2016. Results from MAHEFA show that all 279 participating communes achieved at least 80 percent of their health targets²⁰. Alongside this approach, PSI/Madagascar implemented a community-based health products distribution programme throughout Madagascar to provide a highly subsidized variety of health products for malaria, water sanitation and hygiene (WASH) and reproductive health via trained community health agents at community distribution points.

ITN community-based distribution (CBD) in Madagascar

Building on these established and effective community structures in place, the Organe de Développement du Diocèse de Toamasina (ODDIT) in partnership with Catholic Relief Services (CRS), and with funding from the United States Agency for International Development (USAID), introduced a pilot programme in 2013 to distribute ITNs at community level through religious leaders in the coastal city of Tamatave in Eastern Madagascar. The approach included a “push” of ITNs to the PARC resupply points.

The CBD approach includes mass media and social mobilization communication through churches and through community mobilizers who conduct household visits and provide coupons to households meeting NMCP eligibility criteria.

Eligibility criteria include:

- Pregnant woman
- Child with vaccination completed (nine months)
- Uncovered sleeping space
- Newly married couple
- Recent arrival to live in village
- Hole in net (two head-size holes or five fist-size holes)²¹



Household visit and beneficiary registration by community mobilizer (pre-COVID-19)

Community members requesting ITNs for uncovered sleeping spaces receive a coupon from the community health mobilizers for each ITN needed, up to a maximum of two coupons (representing two ITNs). The household member can then retrieve the ITN at the *Fokontany* distribution point, as part of the “pull” process of the system. Health centre staff oversee the activities and promote the community availability of ITNs to eligible individuals and households.

¹⁸ JSI Research and Training Institute. The Champion Communes Approach, Improving communities’ capacity to manage health activities. *Madagascar Community-Based Integrated Health Program (CBIHP, locally known as MAHEFA) technical briefs series.*

¹⁹ MAHEFA means “powerful together” in Malagasy. It is also seen as **MA**lagasy **H**ealthy **F**amilies.

²⁰ JSI Research and Training Institute. As 18 above.

²¹ Zeger de Beyl, C., Kilian, A., Brown, A., Sy-Ar, M., Ato Selby, R., Randriamanantenasa, F., et al (2017). Evaluation of community-based continuous distribution of long-lasting insecticide-treated nets in Toamasina, Madagascar. *Malaria Journal* (2017) 16:327.

This community-based distribution approach was expanded to 12 districts in 2017. An evaluation of the approach during the pilot phase, conducted by PMI VectorWorks, found that, *“Household ITN ownership and population ITN access exceeded Roll Back Malaria target levels 18 months following a mass campaign and after a nine-month community distribution pilot in Toamasina II District in Madagascar. The pilot successfully provided coupons and ITNs to households requesting them, particularly for the least poor wealth quintiles, and the scheme was well perceived by communities”*²².

An analysis of sentinel surveillance data from 2009—2015 showed that sites with community-based continuous distribution showed weekly malaria case decreases of 14 per cent compared to a 12 per cent increase in malaria cases in sites without community-based continuous distribution²³.

Following the COVID-19 related restrictions on transportation, NMCP and ITN logistics partner PSI called district health teams to identify health centres and community distribution points which had low stock or stock-outs of ITNs and to quantify the number of ITNs needed to fill those gaps. In July, when COVID-19-related travel restrictions were lifted in Madagascar, the NMCP developed ITN replenishment and updated transport plans, focusing on the most remote and hard-to-reach districts. Following this, the NMCP organized and led in-person visits to key districts in six regions to ensure ITN stock availability and to find out what was needed to support the resumption of ITN distribution in areas where it had stopped due to stock-outs. Once ITN stocks were received, health facility staff contacted pregnant women and caregivers of children under five years of age who had received routine health services but did not receive an ITN due to COVID-19 related stock-outs to provide them with ITNs retroactively. Moving forward, the NMCP will review options to increase the number of ITNs in stock to avoid future stock-outs in the case of disruptions in the transport of ITNs to health facility and community distribution sites.

Community-based Continuous Distribution (DCC)

The malaria prevention component of the NMSP now includes DCC, which is the continuation and extension of the initial piloted CBD approach. Remote zones and those situated far from health centres should be prioritized.

According to the NMCP *Stratégie de Distribution Communautaire* the goal in Madagascar is to distribute 988,900 ITNs across 12 districts in 2020. These 12 districts will also be included as part of the mass distribution ITN campaign planned in 2021. The criterion for obtaining an ITN in exchange for a coupon is the existence of an "uncovered sleeping space" in a household, as determined by community health mobilizers.

DCC maintains many of the elements of the CBD approach and is now included as one of the four main ITN distribution approaches as listed above. More than 2,949 *Kom'LAY* (ITN

²² Ibid.

²³ Girond, F., Madec, Y., Kesteman, T., Randrianariveolosia, M., Randremanana, R., Randriamampionona, L., et al (2008). Evaluating Effectiveness of Mass and Continuous Long-lasting Insecticidal Net Distributions Over Time in Madagascar: A Sentinel Surveillance Based Epidemiological Study. *EClinicalMedicine* 1 (2018) 62-69.

committees) have been put in place across the 12 districts. Each *Kom'LAY* is led by the *Chef Fokontany* (Community leader) and includes participation from the following community members as described above: Chef du Centre de Santé de Base (Health centre in-charge), Chef de Zone d'Administration Pédagogique (School director), community ITN mobilizers, community ITN distributors, and teachers. The *Kom'LAY* reports are brought to health facilities for review and resupply of ITNs, vouchers and data collection forms. Health facility in-charges conduct periodic supervision and capacity-building visits to the *Points d'Approvisionnement*. DCC ITNs are identified by specific logos to avoid confusing them with ITNs set aside for health facility distribution to pregnant women and children under five. Social mobilization through schoolchildren in their last year of primary school reinforces ITN use. Two community health mobilizers per *Fokontany* regularly visit households to provide coupons.

These DCC activities in 12 districts of the 39 highest burden districts (with malaria transmission above 100 per 1,000 population). A plan to extend the approach to additional districts is included in Madagascar's Global Fund application for funding for 2021 – 2023. This includes districts which benefited from the previous mass ITN distribution campaign and where indoor residual spraying will end. The extension is expected to provide a cost-effective approach to maintain universal coverage with ITNs. The NMCP will undertake additional evaluations to establish the level of effectiveness of the approach.