

RESEARCH

Rapid ethnographic assessment for potential anti-malarial mass drug administration in an outbreak area of Santo Domingo, Dominican Republic

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Abstract

Background: In the Dominican Republic, a recent outbreak of malaria in the capital, Santo Domingo, threatens efforts to eliminate the disease. Mass drug administration (MDA) has been proposed as one strategy to reduce transmission. The success of MDA is contingent upon high levels of acceptance among the target population. To inform the design of future MDA campaigns, this rapid ethnographic assessment examined malaria-related knowledge and attitudes toward malaria MDA among residents of a transmission focus in Santo Domingo.

Methods: In October 2019, a rapid ethnographic assessment was conducted in the Los Tres Brazos transmission focus, which had not previously received MDA. National malaria programme staff conducted 61 structured interviews with key informants, recorded observations, and held 72 informal conversations. Using a grounded theory approach, data were analysed during three workshop sessions with research team members.

Results: Among those who had heard of malaria in the structured interviews ($n = 39/61$; 64%), understanding of the disease was largely based on personal experience from past outbreaks or through word-of-mouth. Community health workers (*promotores*) were trusted for health information and malaria diagnosis more so than professional clinicians. No participant (0%) was familiar with malaria MDA. After learning about MDA, almost all study participants (92%) said that they would participate, seeing it as a way to care for their community. Reasons for not participating in future MDA included not trusting drug administrators, feeling reluctant to take unprescribed medicine, and fear of missing work. Additional identified challenges to MDA included reaching specific demographic groups, disseminating effective MDA campaign messages, and managing misinformation and political influence.

Conclusion: Residents appear accepting of MDA despite a lack of prior familiarity. Successful MDA will depend on several factors: fostering relationships among community-based health workers, clinicians, community leaders, and others; developing clear health messages that use local terms and spreading them through a variety of media and social networks; and contextualizing MDA as part of a broader effort to promote community health.

Keywords:

are caused by *Plasmodium falciparum*. Transmission by *Anopheles albimanus* mosquitoes occurs year-round with minor seasonal peaks typically observed in the Dominican Republic from June-July and January-December. First-line treatment for uncomplicated malaria is chloroquine-primaquine. Both countries have committed to malaria elimination [3].

In the Dominican Republic, recent outbreaks in the capital, Santo Domingo, have signaled a major shift from rural to urban transmission [4, 5]. Historically, malaria was most abundant along the Haiti border and in agricultural areas populated by migrant workers [6]. However a recent study indicates the absence of malaria from such rural areas [5]. The Santo Domingo metropolitan area (pop. 2.9 million) is comprised of the National District and Santo Domingo East, Santo Domingo West, and Santo Domingo North municipali

The resurgent and expanding nature of the malaria epidemic in the capital forced CECOVEZ to consider more aggressive strategies. The World Health Organization (WHO) recommends mass drug administration (MDA) for falciparum malaria in certain situations, such as during malaria epidemics and for transmission interruption in areas approaching elimination [7]. Successful MDA requires high population coverage, usually defined as >80% of the target population [7]. The need for high population coverage and adherence to potentially multiple rounds of MDA underscore the importance of community engagement (CE) [8, 9]. Community engagement strategies typically involve recruiting and training community members to assist with MDA; educating the population about malaria, MDA, and its purpose; countering rumours; providing incentives; and building institutional trust [7, 9]. Rather than another “magic bullet” in the arsenal of anti-malarial interventions [10], community engagement is increasingly understood as a dynamic social process among all stakeholders involved in health interventions [11].

With these issues in mind, this rapid ethnographic assessment (REA) was conducted in Los Tres Brazos to assess malaria knowledge among community members, document attitudes toward potential MDA for malaria, and to generate a formative understanding of health and health care delivery from the community's perspective. REA is one of several similar research strategies that include rapid assessments, rapid evaluation methods, rapid feedback evaluations, quick ethnographies, focused ethnographies, and real-time evaluations [12, 13]. These methods attempt to quickly generate in-depth, actionable information about sociocultural dimensions of health or disease in order for health programmes to improve delivery and care [13]. Here, the term rapid ethnographic assessment is preferred because it clearly references both the temporal and social science aspects of this method-

Data summary

Over seven days of site visits, 61 structured interviews and 72 informal conversations were conducted with community members across six sampled neighbourhoods of Los Tres Brazos (Table 1). As shown in Table 2, the structured interview participants (n =

prevention. In a way, participation in MDA was one way to circumvent malaria's unpredictability: "I understand that prevention is better than [trying to] cure the disease," said a 24-year-old woman in Los Tres Brazos.

Participating in potential MDA was also seen as an act of service. "I would take the medicine to prevent malaria in the neighbourhood," said a 28-year-old woman who worked in a *banca* selling lottery tickets. Connecting individual participation to community-level benefits was widespread across all sampled communities. In essence, participation in MDA communicated a sense of solidarity and care for the community. To illustrate the vocabulary and phrasing that participants used to communicate this sentiment, exemplary quotes from interviews (accompanied by original Spanish) are compiled in Table 3.

However, several key reasons emerged for the small proportion of those who would refuse participation in MDA. One reason was feeling unsure if the drug administrator was trained competently or doubting whether the medicine was prescribed by a doctor. In one informal conversation, a resident of Los Tres Brazos said that he or she would take the medicine only, "if the public health [team] is trustworthy." Another in Capotillo said in an

interview that, "There are people who won't take [the medicine], if it isn't prescribed by a doctor." An older man in Simon Bolivar said that he, too, would participate only if a doctor prescribed the medicine.

In interviews, another potential reason for declining MDA is that some people would rather decline the MDA in order to observe if others in the community succumb to side-effects. This reflects caution and skepticism towards MDA and underscores the importance people place on their own observations, rather than reassurance by health workers.

Perhaps one of the most obvious hurdles to overcome in a successful MDA is coordination. It-

Simon Bolivar said in an informal conversation that “If I

One woman in Capotillo opined that the best way to get health information was, “from the health *promotores*, because sometimes the news says fake things.” Social media, especially among young participants, were also mentioned as sources of health information.

However, assistants detected a general disconnect between the content of health information that penetrated these communities and the ways in which community members described malaria or disease in general.

is tended to be framed in light of the precarious socio-economic conditions of the community. For example,

one hand, mistrust of doctors regarding diagnosis of malaria, but still felt hesitant or skeptical of MDA if they were not assured the medicine was prescribed by a doctor. This discrepancy will need to be carefully considered when conceptualizing the roles of medical professionals and community health workers for potential MDA implementation.

Greater familiarity with dengue may be due to a few reasons. First, dengue is more widespread than malaria, affecting 29 of the country's 32 provinces. Second, the year 2019 witnessed a dramatic rise in cases nationwide compared to 2018: up to epidemiological week 41 (the week of this study), there were 542 cumulative cases nationally, compared to 35 at the same time point in 2018 [26]. Furthermore, annual deaths from dengue have consistently outnumbered deaths from malaria in the Dominican Republic: in 2019, there were 53 deaths from dengue, while there have been fewer than 10 deaths per year from malaria since 2012 [27]. T

response bias. The question “Do you know what malaria is?” is also fraught with issues of desirability bias (saying “yes” to a question in biomedical language posed by public health personnel). Furthermore, all three-field assistants were men, which may have influenced rapport with female participants. The shortened timeframe prevented more in-depth training of team members, sampling in other neighbourhoods, obtaining a larger sample, and more time for analysis and reflexivity. Longer-term ethnographic work would provide richer contextual data.

Nonetheless, certain strengths helped address these limitations. First, the team was composed of locally hired assistants, two of which had years of experience in the malaria programme, were familiar with the study site, and had already established rapport with community

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