

Perspective

Prescription drug-dispensing limits in the USA – implications for malaria chemoprophylaxis among VFR travellers

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An estimated 1700 cases of malaria are reported in the USA each year,¹ with most cases occurring in travellers returning from malaria-endemic regions. ‘Visiting Friends and Relatives’ (VFR) travellers—defined as immigrants and their children who travel to a foreign country to visit friends and relatives—are represented disproportionately, accounting for the majority of malaria cases imported into the USA.^{2,3} According to the CDC, VFR travellers are 8–10 times more likely to become infected with malaria as compared to non-VFR tourist travellers, with first and second-generation immigrants being especially vulnerable to malaria infection.^{1,4} The increased malaria risk among VFR travellers is likely multifactorial: decreased access to pre-travel healthcare, longer average travel duration, decreased perception of risk, mistrust in the healthcare system, and decreased utilization of prevention measures such as malaria chemoprophylaxis. Chemoprophylaxis use is particularly poor among VFR travellers. In one study, as few as one-quarter of VFR travellers who developed malaria reported any chemoprophylaxis.⁵

Increasing chemoprophylaxis uptake among VFR travellers would likely reduce the overall burden of malaria in the USA, but numerous barriers to accessing malaria chemoprophylaxis have been described, including fear of adverse effects of medicines, inconvenience (often taking a daily medicine before, during, and

after travel), and decreased perception of malaria risk as compared to non-VFR travellers.¹ To explore these barriers and design interventions in our community, we invited West African VFR travellers in Minnesota who are at particularly high risk of malaria to participate in focus groups, key informant interviews, and case interviews.

Within the focus groups, two additional common barriers were identified among VFR travellers seeking pre-travel healthcare: the cost of malaria chemoprophylaxis and insurance coverage restrictions, which can be highly variable based on one’s insurance coverage. Due to a lack of a universal health insurance programme, healthcare in the USA is composed of multiple different health insurance programmes. There are both government-funded (Medicaid, Medicare and Veterans Administration) and private insurance programmes—the majority of which occurs through an individual’s employer. Medicaid is the largest health insurance programme in the USA, funded by the federal government and individual states to provide health insurance to low-income Americans.⁶ While most native-borne low-income Americans do not travel internationally, VFR travellers often travel due to family connections and obligations and disproportionately rely on Medicaid rather than private insurance for their health needs, including travel-associated medications. In our focus

groups, many VFR travellers found that Medicaid did not cover malaria chemoprophylaxis and commented that the high prescription drug costs were prohibitive, especially considering other travel costs. VFR travellers (living in Minnesota) enrolled in Medicaid reported having been supplied with a limit of 1 month of malaria chemoprophylaxis medication for travel despite often reporting more prolonged periods of travel. As a result, this group of travellers frequently either did not fill their medication at all, or filled the maximum covered under Medicaid—a one-month supply. Some travellers did not realize that they had insufficient medication until after arriving at their destination.

This insurance coverage limitation reflects Medicaid policy in Minnesota, which restricts the dispensed quantity of a drug to maximum of 34 days.^{7,8} Little flexibility is allowed within this rule. For instance, since Medicaid eligibility is based on income, individuals are not allowed to pay for the remainder of a prescription out-of-pocket—regardless of their ability to pay. Only a minority of patients are allowed a ‘vacation override’, which is a medication prescription in excess of the typical 34-day dispensing limit for the purpose of travel. The Minnesota Department of Human Services states that individuals who do not return before the next prescription fill date cannot be approved for a vacation override until 50% of their current supply has been used, and authorization is allowed only once within a 12-month period (the maximum allowed override is 34 days).⁹

The prescription drug-dispensing limit is not unique to Minnesota Medicaid beneficiaries. Most health insurance programmes (both government and private) have prescription drug-dispensing limits as a mechanism of reducing prescription drug costs.¹⁰ Other US state Medicaid programmes also have a dispensing limit of 34 days, with a minority of states allowing a 90-day supply for some medications.¹¹ Travel providers in the state of Washington identified barriers to medication adherence among VFR travellers with Medicaid and Medicare insurance due to a 30-day dispensing limit.¹²

The lack of Medicaid prescription drug coverage for individuals preparing for prolonged travel places VFR travellers—a group already at higher risk for malaria infection—in a dangerous predicament. Since malaria chemoprophylaxis regimens require administration before, during and after travel, restricting coverage to 1-month limits the duration of coverage significantly. It has been our experience that VFR travellers are highly unlikely to alter their trip despite not being fully protected.

Some focus group participants reported a preference to buy less expensive chemoprophylaxis drugs in their destination countries. This is concerning since malaria medications purchased in endemic countries may be counterfeit, of poor quality,¹³ or may be inappropriate for that particular region, such as chloroquine purchased in regions with chloroquine-resistant malaria. An estimated 122 350 children <5 years old died of malaria in sub-Saharan Africa in 2013 due to consumption of anti-malarial drugs of poor-quality.¹⁴

What are travel providers to do? First, providers caring for long-term travellers should be cognizant of prescription drug-dispensing limitations in their state, especially for travellers insured by Medicaid. Unfortunately, unless there is sweeping Medicaid policy reform, the onus of responsibility will undoubtedly fall on

individual travellers. However, this issue should be discussed proactively at the time of the visit, rather than as a surprise when the traveller goes to the pharmacy, or upon arrival to their destination country. Second, health systems changes should be considered in order to prevent patients from falling through the cracks. At our travel clinic in St Paul, Minnesota, we have piloted an approach where we include prescribing instructions prompting the pharmacist to contact the travel providers if medications dispensed is different than the amount prescribed. Such instructions provide an opportunity for providers to identify high-risk, long-term travellers who will not have their malaria chemoprophylaxis drug covered. The pharmacist and the provider can collaborate to ensure that the patient has an adequate drug supply for the trip. This may involve a relative picking up the drug and shipping it to the patient, timing the trip such that the post-exposure treatment can be picked up after arrival back in the USA, or other strategies.

While all patients should be encouraged to use insect personal prevention measures, VFR patients—especially those unable to obtain adequate malaria chemoprophylaxis—should have additional counselling due to cultural and/or language barriers that frequently limit uptake of personal protection. These patients should be meticulously counselled on stringent personal protection measures (permethrin-treated clothing, bed nets and insect repellents) and provided with concrete steps in obtaining and the proper use of these products. In addition, when it is clear that a traveller will have inadequate protection and are unwilling to cancel their trip, a provider could recommend that a traveller adjust their itinerary to avoid particularly high-risk travel locations.

However, such strategies are limited in scope, time-consuming and will only benefit a minority of patients. Policy solutions are needed to ensure that adequate chemoprophylaxis is available to high-risk travellers, including VFR travellers. Potential policy solutions include extending the dispensing limits to 90 days for malaria chemoprophylaxis, or loosening vacation override restrictions to allow for a greater number of pills to be filled under certain conditions, such as prolonged travel to malaria-endemic countries. Even relatively small policy changes could avoid detrimental health effects and mortality associated with malaria acquired during travel. In addition, when the cost of preventive medication is weighed against the cost of clinical malaria (including malaria hospitalizations), there is a cost savings to the public sector overall.¹⁵ Meanwhile, until access to standard of care malaria prevention is made available, travel medicine providers who serve VFR travellers should be aware of their state’s Medicaid policy regarding prescription drug-dispensing limits, identify those affected and implement traveller-specific risk-mitigation strategies to ensure safe travel for high-risk patients.

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Authors' Contributions

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References

1. CDC. Malaria Facts. 2017; <https://www.cdc.gov/malaria/about/facts.html>. Accessed December 18, 2017.
2. Pistone T, Guibert P, Gay F *et al*. Malaria risk perception, knowledge and prophylaxis practices among travellers of African ethnicity living in Paris and visiting their country of origin in sub-Saharan Africa. *Trans R Soc Trop Med Hyg* 2007; **101**:990–5.
3. Angelo KM, Libman M, Caumes E *et al*. Malaria after international travel: a GeoSentinel analysis, 2003–2016. *Malar J* 2017; **16**:293.
4. CDC. Visiting Friends or Relatives in a Foreign Country. 2016; <https://wwwnc.cdc.gov/travel/page/vfr>. Accessed February 9, 2018.
5. Mace KE, Arquin PM. Malaria surveillance—United States, 2014. *MMWR Surveill Summ* 2017; **66**:1–24.
6. Barnett JC, Berchick ER. Health Insurance Coverage in the United States: 2016. 2017; <https://www.census.gov/content/dam/Census/library/publications/2017/demo/p60-260.pdf>. Accessed April 9, 2018.
7. Conn DL. Is the availability of delayed-release prednisone an important clinical advance? *Arthritis Care Res (Hoboken)* 2016; **68**:412–3.
8. The Office of the Revisor of Statutes. 2017 Minnesota Statutes. <https://www.revisor.mn.gov/statutes/?id=256b.0625>. Accessed February 9, 2018.
9. Minnesota Department of Human Services. Pharmacy Non-Controlled Substance Overrides. n.d; http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=dhs16_138891. Accessed February 9, 2018.
10. Schneiter Ellen. States and Prescription Drugs: An Overview of State Programs to Rein in Costs. 2016; <https://nashp.org/wp-content/uploads/2016/04/Drug-Brief1.pdf>. Accessed April 9, 2018.
11. Taitel MFL, Kirkham H *et al*. Medication days' supply, adherence, wastage, and cost among chronic patients in medicaid. *Medicare Medicaid Res Rev* 2012; **2**.
12. Gurgle HE, Roesel DJ, Erickson TN, Devine EB. Impact of traveling to visit friends and relatives on chronic disease management. *J Travel Med* 2013; **20**:95–100.
13. Nayyar GML, Breman JG, Herrington JE. The global pandemic of falsified medicines: laboratory and field innovations and policy perspectives. *Am J Trop Med Hyg* 2015; **92**:2–7.
14. Renschler JP, Walters KM, Newton PN, Laxminarayan R. Estimated under-five deaths associated with poor-quality antimalarials in sub-Saharan Africa. *Am J Trop Med Hyg* 2015; **92**:119–26.
15. Khuu D, Eberhard ML, Bristow BN *et al*. Malaria-related hospitalizations in the United States, 2000–2014. *Am J Trop Med Hyg* 2017; **97**:213–21.