

# Impact of malaria rapid diagnostic tests on patients' subsequent treatment-seeking and health outcomes: Results from the ACT Consortium



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## Introduction

Malaria rapid diagnostic tests (RDTs) are intended to have a beneficial impact on management of suspected malaria, and on health outcomes and other patient-related outcomes.

The ACT Consortium includes several studies designed to test operational strategies for artemisinin combination therapy (ACT) and RDT implementation in various settings.

The consortium provides a unique opportunity to draw on data from multiple studies that have introduced RDTs across a range of clinical, social, and epidemiological contexts, and in public, private retail, and community health service sectors.

## Methods

This analysis\* focuses on events after the clinical consultation, including: a) subsequent treatment seeking and b) self-reported health outcomes. Patient costs will be considered in the future.

Data were examined from eight studies conducted in four different countries, comparing eight scenarios where RDTs were made available with eight control scenarios where RDTs were not available.\*\*

Outcomes of interest were compared across scenarios to identify similarities and differences.

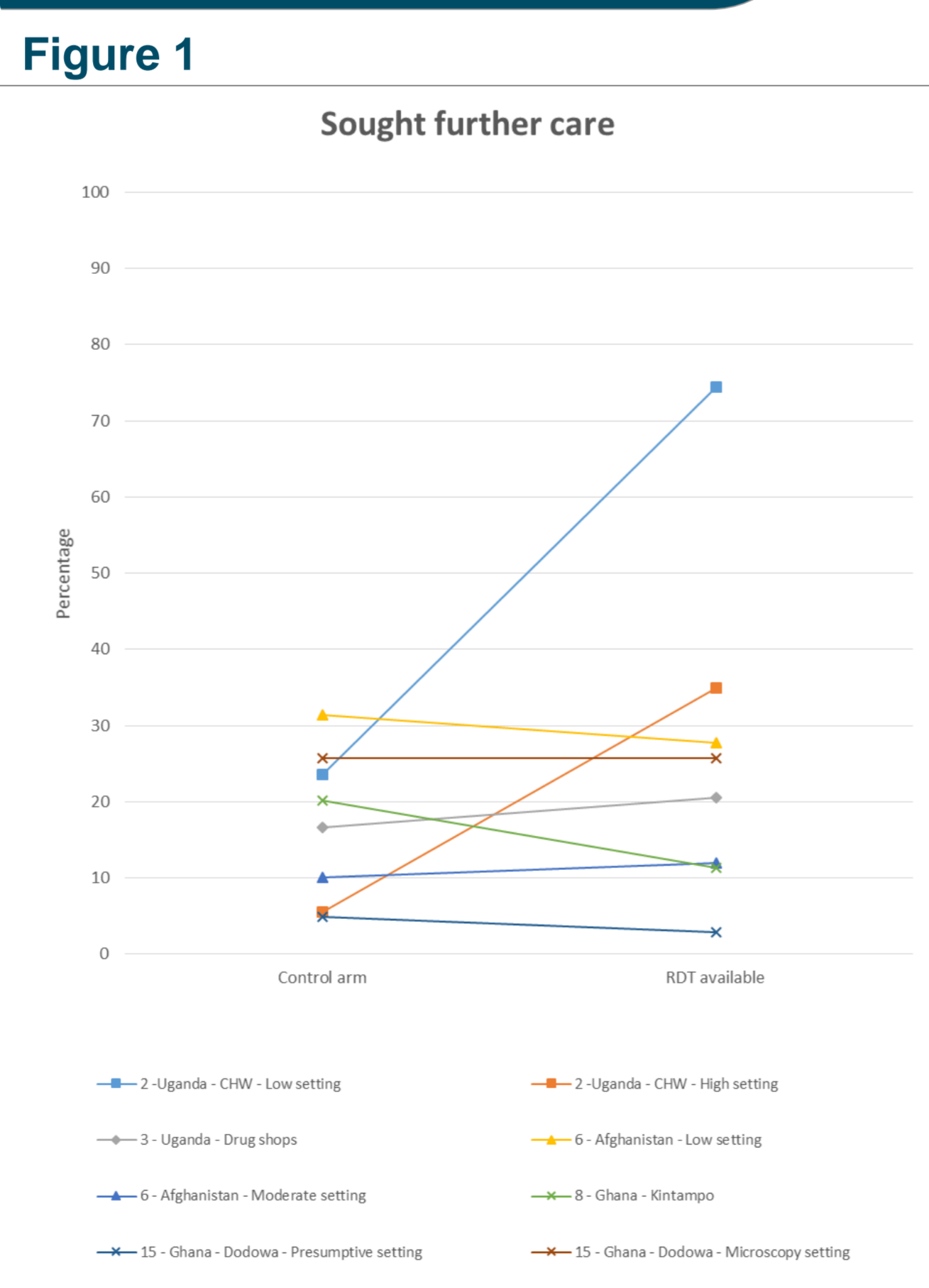
These patterns were then analysed for associations with features of each health care context, RDT implementation strategy, endemicity, and other characteristics.

\* The impact of RDT availability on case management is presented in a separate analysis.  
\*\* Studies included: "The PRIME trial: Improving health centres to reduce childhood malaria in Uganda"; "Use of rapid diagnostic tests to improve malaria treatment in the community in Uganda"; "Introducing rapid diagnostic tests in drug shops to improve the targeting of malaria treatment" (Uganda); "IMPACT2: Evaluating policies in Tanzania to improve malaria diagnosis and treatment"; "Strategies for expanding access to quality malaria diagnosis in south-central Asia where malaria incidence is low" (Afghanistan); "Restricting ACT drugs to patients with positive rapid diagnostic test results" (Ghana); "How the use of rapid diagnostic tests influences clinicians' decision to prescribe ACTs" (Ghana). For more information see [www.actconsortium.org/projects](http://www.actconsortium.org/projects)

## Results: Does RDT introduction change patients' treatment seeking after the index consultation?

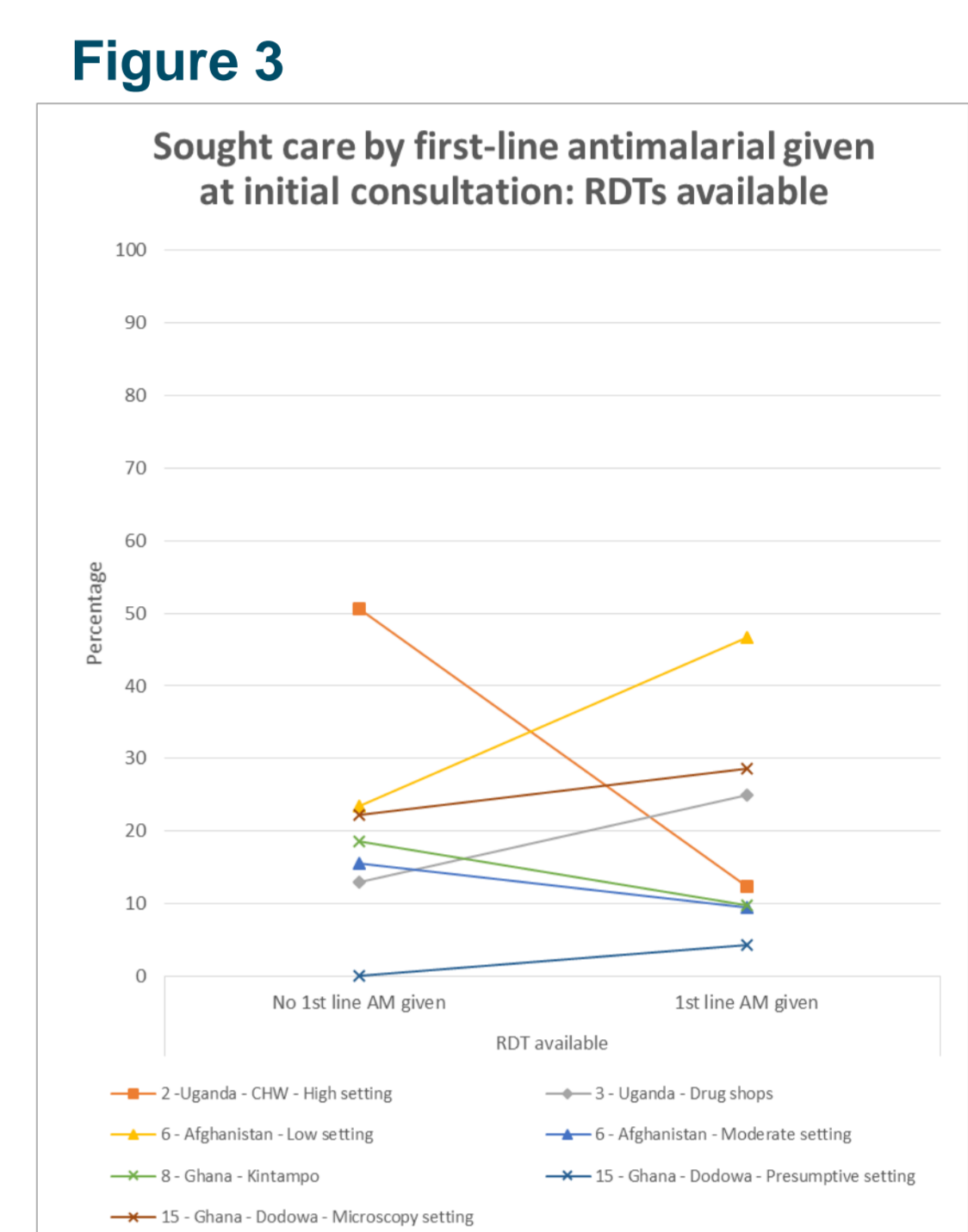
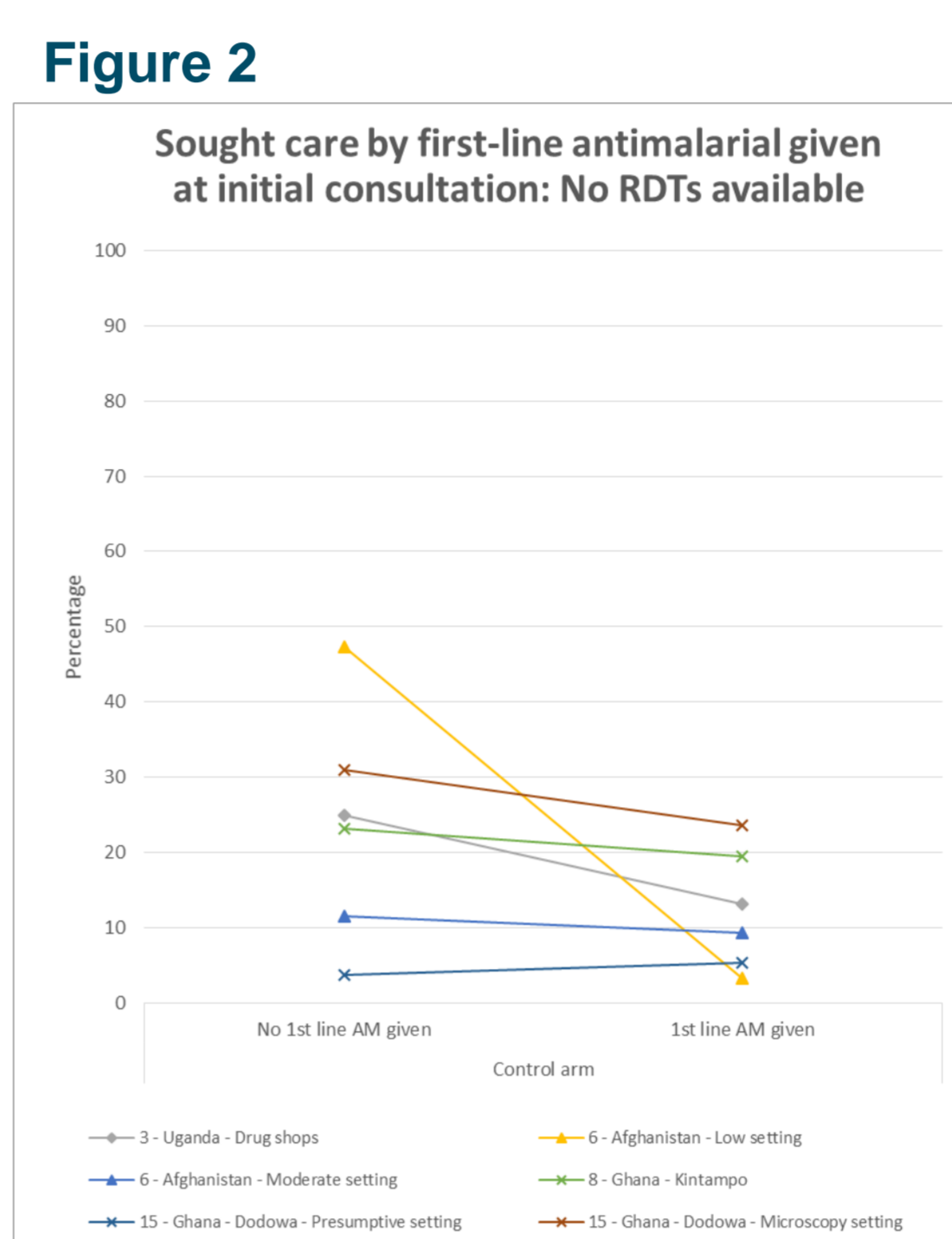
In most study scenarios, the proportion who went on to seek further care was about the same in settings where RDTs were, and were not, available.

However, in two scenarios in western Uganda where community health workers had no medicines besides ACTs, the number of patients referred for further care was higher where RDTs were available (Figure 1).



## Results: Does receipt of first-line antimalarial therapy affect further treatment seeking?

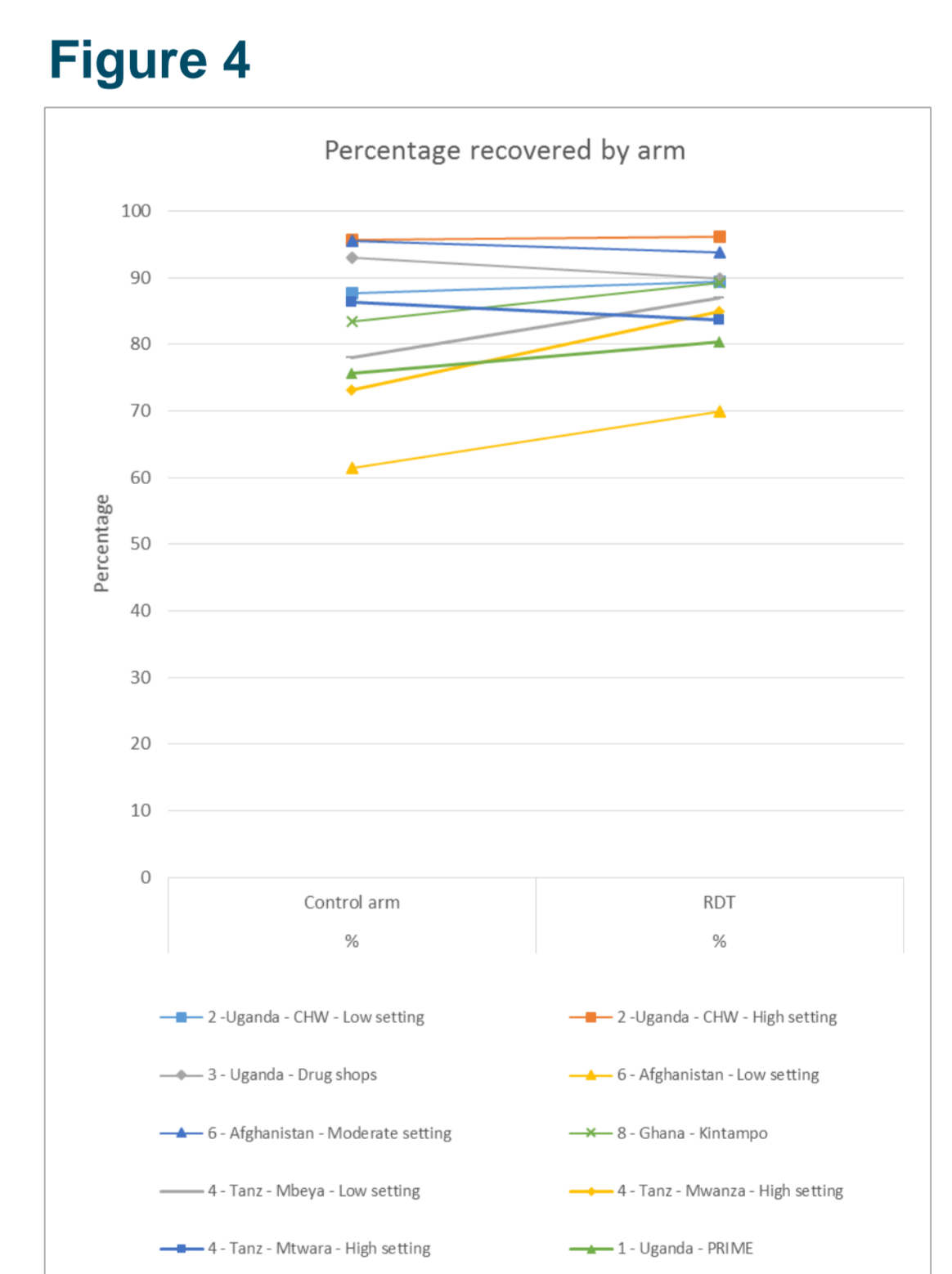
Where RDTs were not available, further treatment seeking was similar regardless of whether the patient received first-line antimalarial therapy, with one exception. Differences were more marked in some scenarios when RDTs were available. (Figures 2, 3). In addition, where RDTs were available, patients with negative RDT results were more likely to seek further care than those with positive test results (not shown).



## Results: Does RDT availability affect self-reported health outcomes?

There was no clear difference between those treated in settings where RDTs were available, and those treated in settings where clinical diagnosis was the only option (Fig 4).

This pattern was similar across scenarios regardless of whether first-line antimalarial treatment was given; except for one low-transmission site without RDTs, where, counter-intuitively, more patients recovered after receiving first-line antimalarial treatment vs not (not shown).



## Conclusions

- This ongoing analysis aims to elucidate features associated with variation in post-consultation events including health outcomes, treatment seeking. Household costs will also be considered.
- In settings where providers have no alternative treatment for RDT-negative patients, referral and post-consultation treatment seeking may increase, with implications for the surrounding health system.
- The availability of RDTs does not appear to have a consistent effect on self-reported health outcomes. Where data exist, however, introducing RDTs does not appear to be harmful.
- Results will help to provide evidence-based guidance for policy and program development for RDT introduction in other areas.

• DR Allen, E Allen, E Ansah, F Baiden, K Baltzell, A Bjorkman, K Bruxvoort, D Chandramohan, S Clarke, B Cundill, D DiLiberto, K Elfving, C Goodman, E Hutchinson, S Lal, T Leslie, B Leurent, M Liverani, C Maiteki-Sebuyira, P Magnussen, R Mandike, P Mangesho, A Mårtensson, W Mbacham, A Mbonye, C Mkoba, S Narh-Bana, R Ndyomugenyi, M Nyagonde, O Onwujekwe, S Owusu-Agyei, H Reyburn, M Rowland, D Schellenberg, D Shakely, P Snell, SG Staedke, R Thomson, L Vestergaard, J Webster, CJM Whitty, V Wiseman. Studies were supported by the ACT Consortium, which is funded through a grant from the Bill & Melinda Gates Foundation to the London School of Hygiene & Tropical Medicine.