SHOPS PLUS

Using “Mystery Clients” to Examine TB Care Quality in Lagos and Kano – Key Findings

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Key Messages

- **Regardless of sector, few providers demonstrated appropriate management** of a presumptive TB patient in alignment with national or international guidelines
- Even if providers screen for TB, **sputum collection and testing is a bottleneck**, especially for non-clinical cadres like CPs and PPMVs
- **Inappropriate sale/dispensing of TB drugs is not widespread**
- **Confirmed TB patients did not receive thorough enough counseling** on TB treatment and did not emphasize the selection of a treatment supporter
- **Nigerian providers' management of presumptive patients in this study is comparable to rates of correct practice observed in other African and Asian countries**

Study rationale

- Relatively little is known about the quality of screening and diagnosis of TB in Nigeria (regardless of sector or service delivery model)
- PPMs using networks have been successfully developed and used to increase tuberculosis (TB) detection and patient flows in India and Indonesia, but prior to SHOPS Plus were relatively untested in other high TB burden settings, including Nigeria
- To address these knowledge gaps USAID requested that SHOPS Plus implement a study to assess quality of TB services provided in urban areas of Lagos and Kano states

Study objective

- Use mystery client and vignette survey methodologies to measure the quality of TB services provided in urban Lagos and Kano
  - Private sector (SHOPS Plus & unengaged facilities)
  - Public (DOTS & non-DOTS)
- Services examined:
  - Screening for presumptive TB
  - Testing and/or referral for diagnosis
  - Treatment initiation and counseling

What is a mystery client (MC) survey?

- Uses trained data collectors to pose as mystery client patients (MCs) to check the quality of provider care/services
  - Design MC scenarios to test different aspects of program goals/objectives
  - Requires extensive training for the data collectors to reduce risk of detection
- Valid and rigorous method to overcome biases associated with observation, face-to-face surveys, or client exit surveys

What is a vignette survey?

- Goal is to elicit hypothetical and direct demonstrations of TB knowledge
- Providers get a basic description of a female patient whose symptoms include chronic cough and fever
  - Providers are then asked to explain what they would ask and do
  - Standardized details on patient history and test results only available only if provider asks for these details
- Results are used in conjunction with MC survey to examine whether there is a “know-do” gap

Research questions

1. Are health facilities in alignment with international and national standards for TB screening?

2. What is the range and variation in quality of TB services available in different types of health facilities?

3. **[SHOPS Plus only]** Is there a know-do gap among clinical providers in the management of TB?

The study includes four provider cadres

Public and private clinical facilities

Private stand-alone labs

Community Pharmacies (CPs)

PPMVs

MCs implemented four different client scenarios to examine different aspects of service delivery

1. Textbook Case of Presumptive TB

Opening statement: "I am having fever and cough that Is not getting better"

2. Lab Case of Presumptive TB

Opening statement: "I've been having cough that is not getting better. What test can I do to figure out what is wrong with me?"

3. Direct Request for Anti-TB Drugs

Opening statement: "Do you have this drug [show empty packet of rifampicin]? I would like to buy some."

4. Referral for Treatment

Opening statement: "I visited the pharmacy and they did a test and told me to come here [show GX result/referral form]."

MCs presented and acted like typical clients

- Extensive MC training to define their scenario characters, refine their scripts, provide believable life details
- **Presenting symptoms**: cough and fever that is not getting better
- **Only if asked/requested**:
  - Reveal weight-loss, clear sputum, night sweats, no history of TB, and no family members coughing
  - Submitted to physical examinations
  - Attempt to provide a sputum sample,
- Paid applicable fees for services and/or Rx

1,200+ facilities visited in June-August 2019

Sample "Family"	Cadre	# of Facilities Visited in Lagos	# of Facilities Visited in Kano	Scenario Implemented	Precision
SHOPS Plus	Clinical Facilities	200	78	Scenarios 1 & 4	Each substrata: MOE ±5%.
	Labs	83	20	Scenario 2	
	CPs	96	19	Scenario 1 & 3	
	PPMVs	175	184	Scenario 1 & 3	
	Clinical Vignette Survey	72	50	--	MOE ±10%.
Unengaged Private Facilities	Clinical Facilities	47	41	Scenario 1	Each substrata: MOE ±10%.
	CPs/PPMVs	50	49	Scenario 1	
Public Facilities	DOTS Facilities	75	73	Scenario 1 & 4	Each substrata: MOE ±10%.
	"Non-DOTS" Facilities	24	41	Scenario 1	

RESULTS FOR SCENARIO 1 & 2

How did providers across all facilities respond to patients presenting with “textbook” TB symptoms?

Clinical providers must meet 3 criteria to demonstrate "correct" case management:

1. Confirm cough duration of 2 weeks or longer, asking if sputum is produced **and any one** of the following symptoms:
   - Fever
   - Blood in sputum
   - Chest pain
   - Unexplained weight-loss
   - Difficulty breathing
   - Night sweats
2. Take (or attempt to take) sputum sample, recommend a chest x-ray, or provide a referral to another public or private clinical facility for testing
3. No sale of antibiotics (including anti-TB drugs or fluoroquinolones), and/or steroids

PPMVs, CPs, and labs must meet 3 criteria to demonstrate "correct" case management:

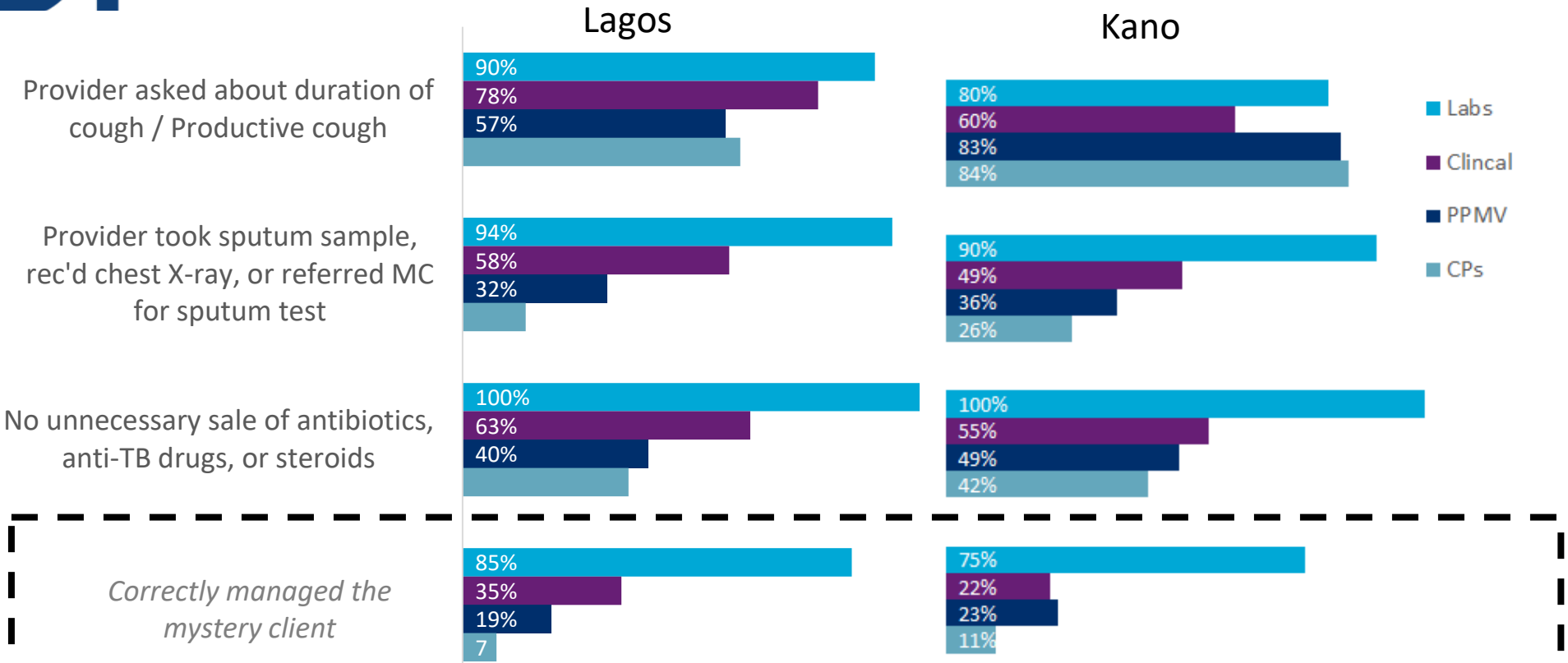
1. Confirm cough duration of 2 weeks or longer

2. Take (or attempt to take) sputum sample, recommend a chest x-ray, or referral to public or private clinical DOTS

3. No sale of antibiotics (including anti-TB drugs or fluoroquinolones), and/or steroids

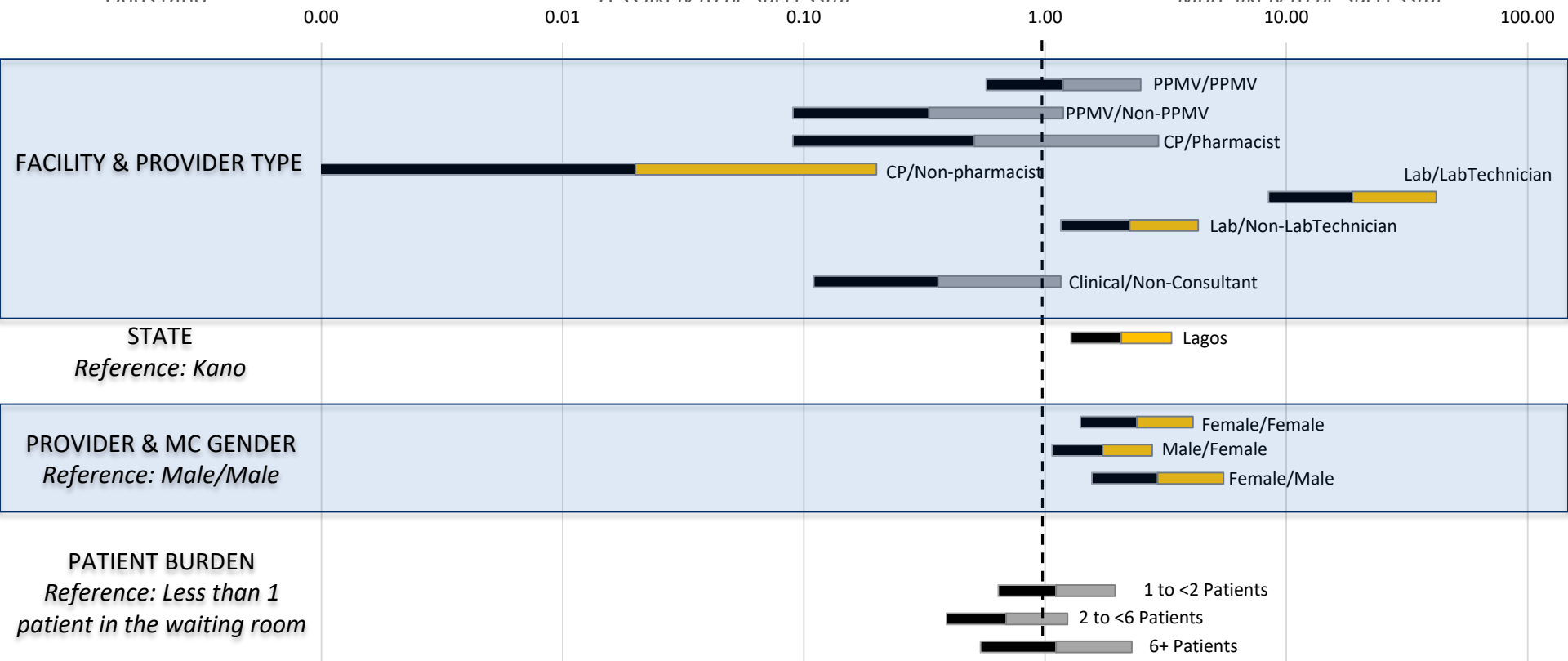
SHOPS Plus - Results for Scenario 1 & 2

Except for labs, few **SHOPS Plus providers** met all 3 criteria for correct management



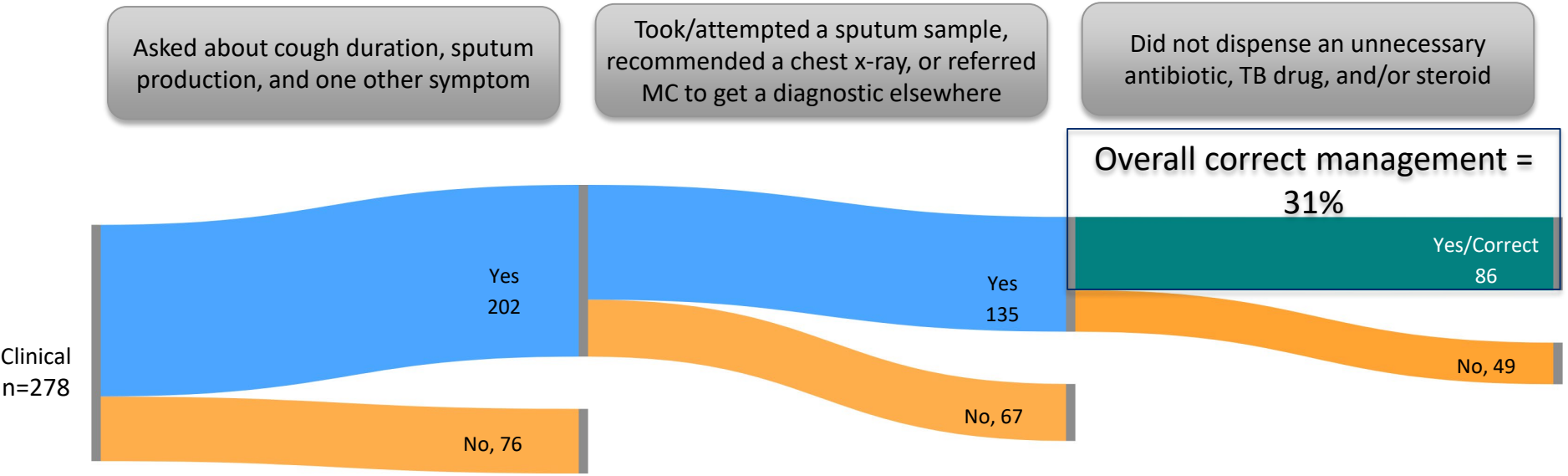
OVERALL RESULT for Scenario 1 & 2: SHOPS Plus response to MCs with textbook TB symptoms

What observable factors are associated with correct management?



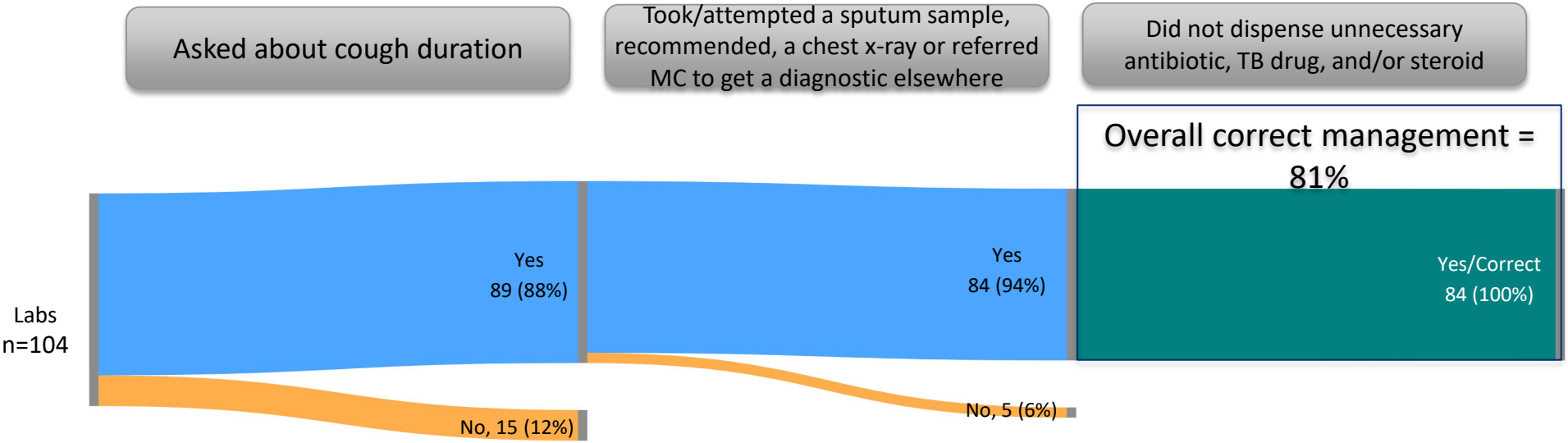
Logistic regression for Scenario 1 & 2: factors with statistical significance are shaded in orange

At each point, about a third of **clinical providers** veered off the "path" to correct management



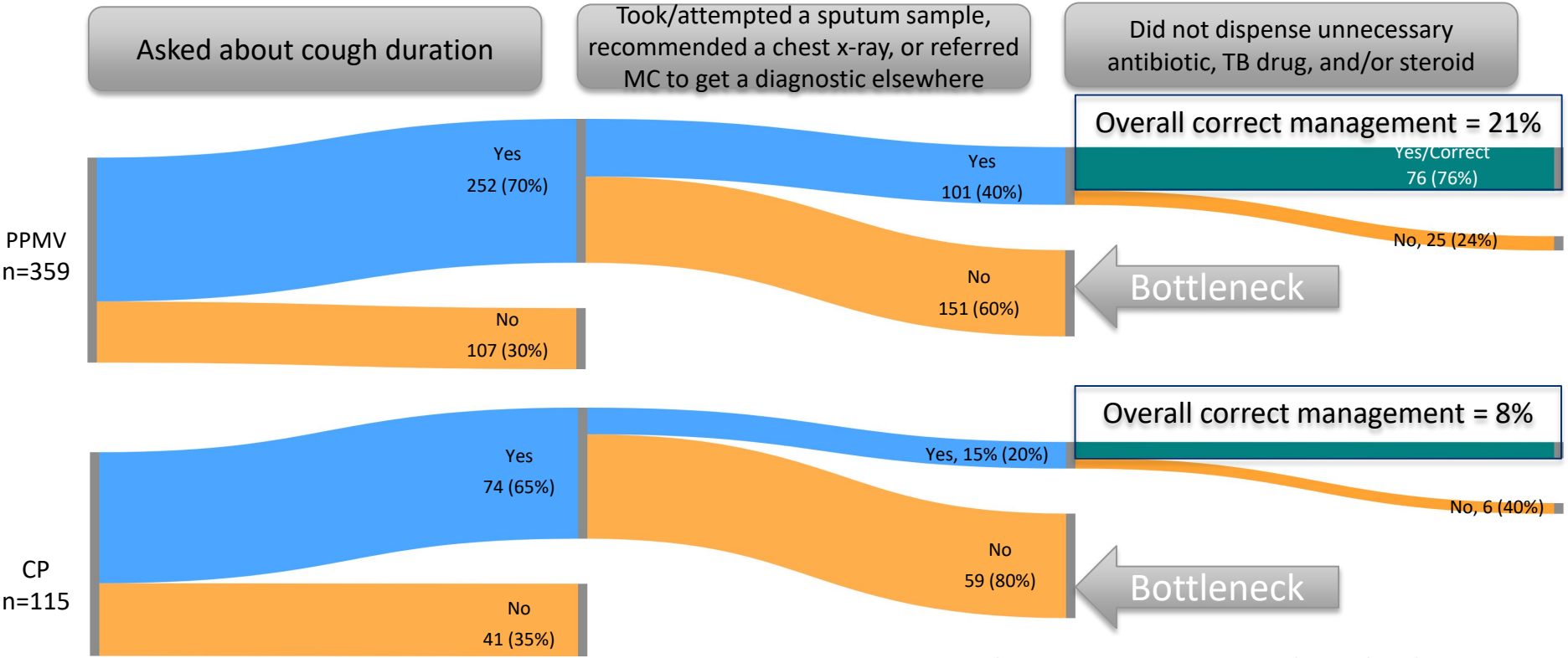
The lack of a single "bottleneck" suggests continued need for supportive supervision that emphasizes all aspects of the case management pathway

Most **labs** managed correctly; a few missed the opportunity to thoroughly screen



Scenario 1 & 2: SHOPS Plus response to MCs with textbook TB symptoms

Many **CPs/PPMVs** veered off the correct management path at sputum sampling



Scenario 1 & 2: SHOPS Plus response to MCs with textbook TB symptoms

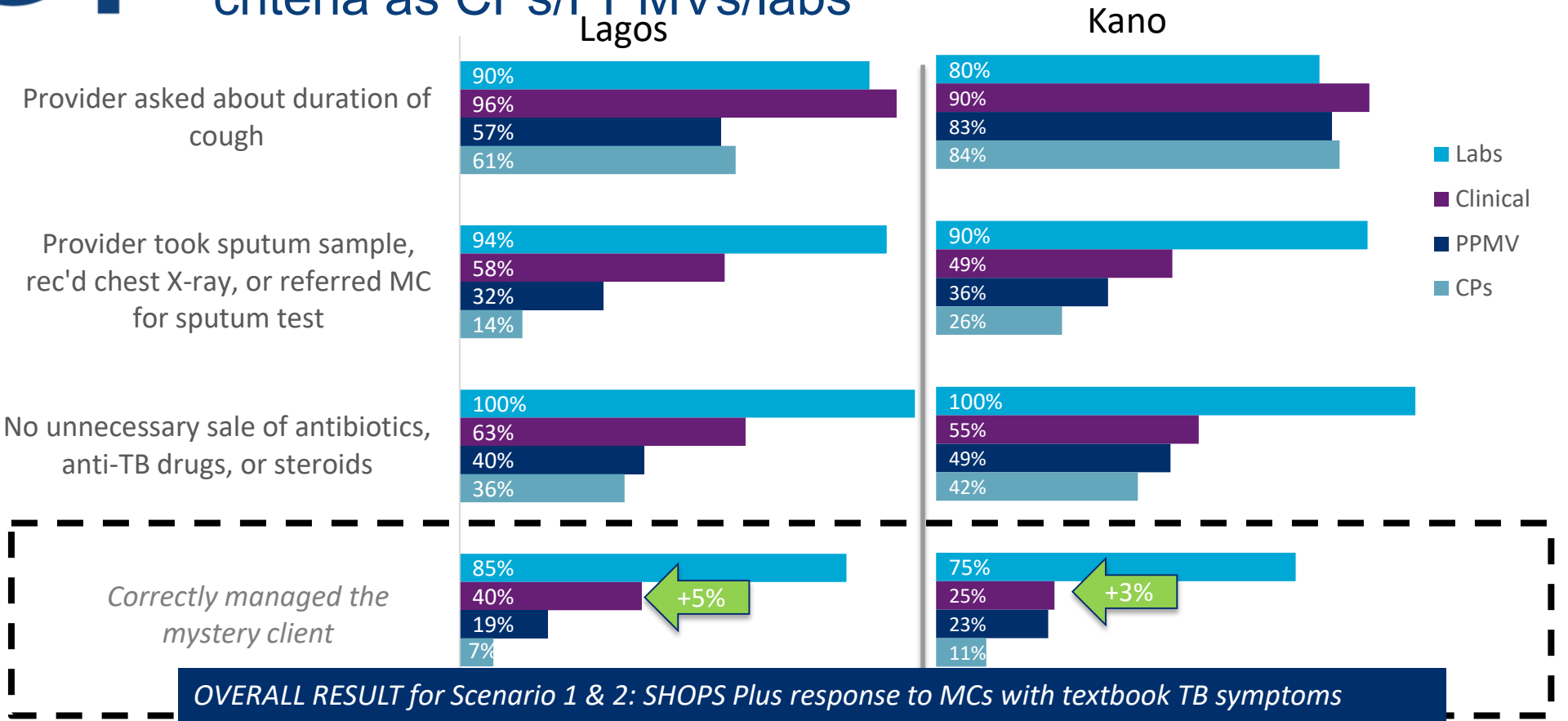
Vignette survey results show that a know-do gap exists for diagnostics but not for screening*

- **Screening (i.e. history-taking/clinical examination):** clinical providers interacting with MCs did as well or even better than with hypothetical clients in the vignette survey
  - Indicates clinical providers generally did what they knew
- **Diagnostics**: clinical providers interacting with MCs recommended/requested sputum tests, x-rays, and HIV tests much less often than with hypothetical clients in the vignette survey**
  - Indicates clinical providers likely have disincentives (time or availability?) to provide or recommending important diagnostics for presumptive or confirmed TB patients

*Results for providers receiving both an MC visit and selected for the vignette survey.

**Relevant differences between the vignette and MC surveys were significant at p<.0001.

Slightly more clinical providers meet criteria for correct management if held to the same screening criteria as CPs/PPMVs/labs



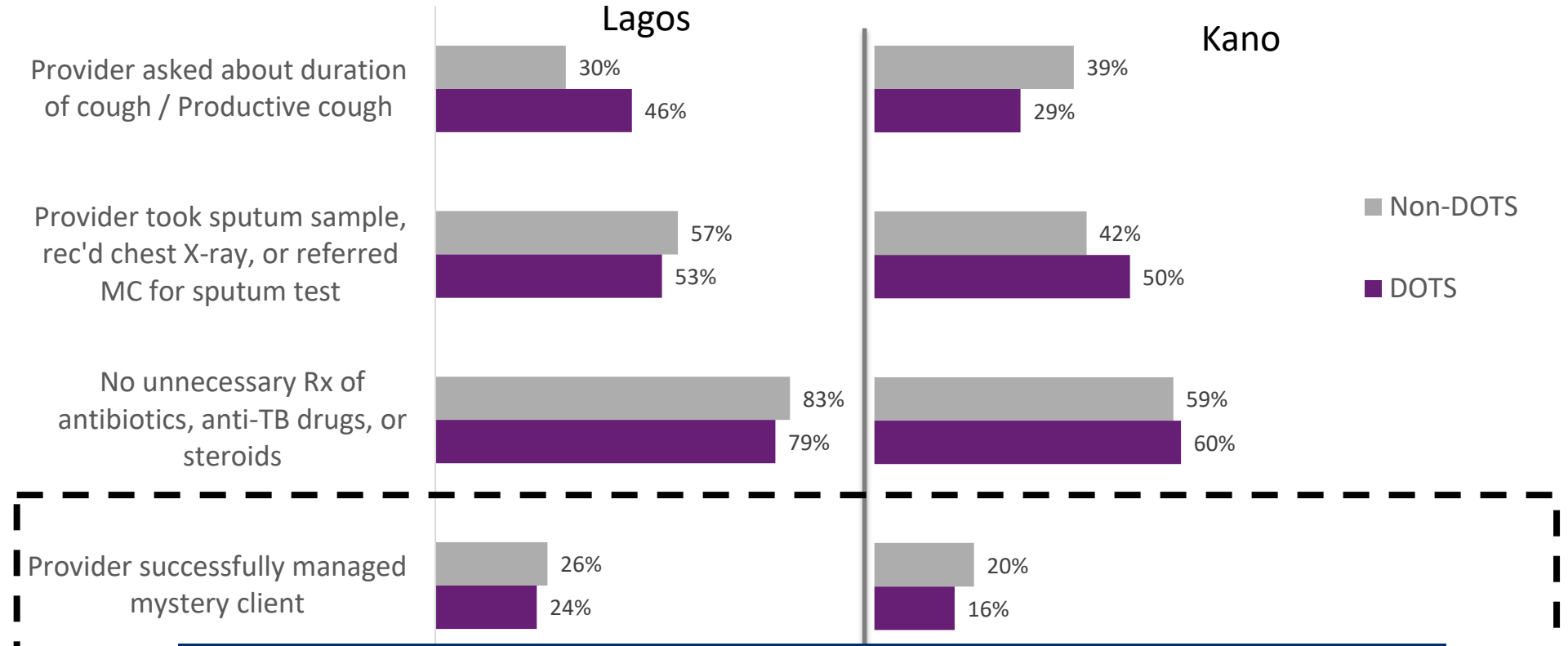
OVERALL RESULT for Scenario 1 & 2: SHOPS Plus response to MCs with textbook TB symptoms

Key findings for **SHOPS Plus** on managing "textbook" presumptive TB cases

- Compared to other cadres, **labs performed better**.
  - Labs' core functions (i.e. screening and testing clients) align well with the criteria for correct case management
  - The ability to offer AFB for a fee puts labs at an advantage
- **Collection of sputum samples is a bottleneck** for PPMVs and CPs **and a know-do** gap for clinical providers
  - Concurrent, system-level challenges could have affected providers' ability and willingness to promote collection of sputum samples for testing
- Few providers **dispensed anti-TB drugs, fluoroquinolones, or steroids**
  - Evidence of relatively good "control" over TB drug commodities in the two states (CPs are an exception, 20% dispensed an anti-TB drug)
  - This practice was reinforced by the original provider training and subsequent mentoring and supportive supervision

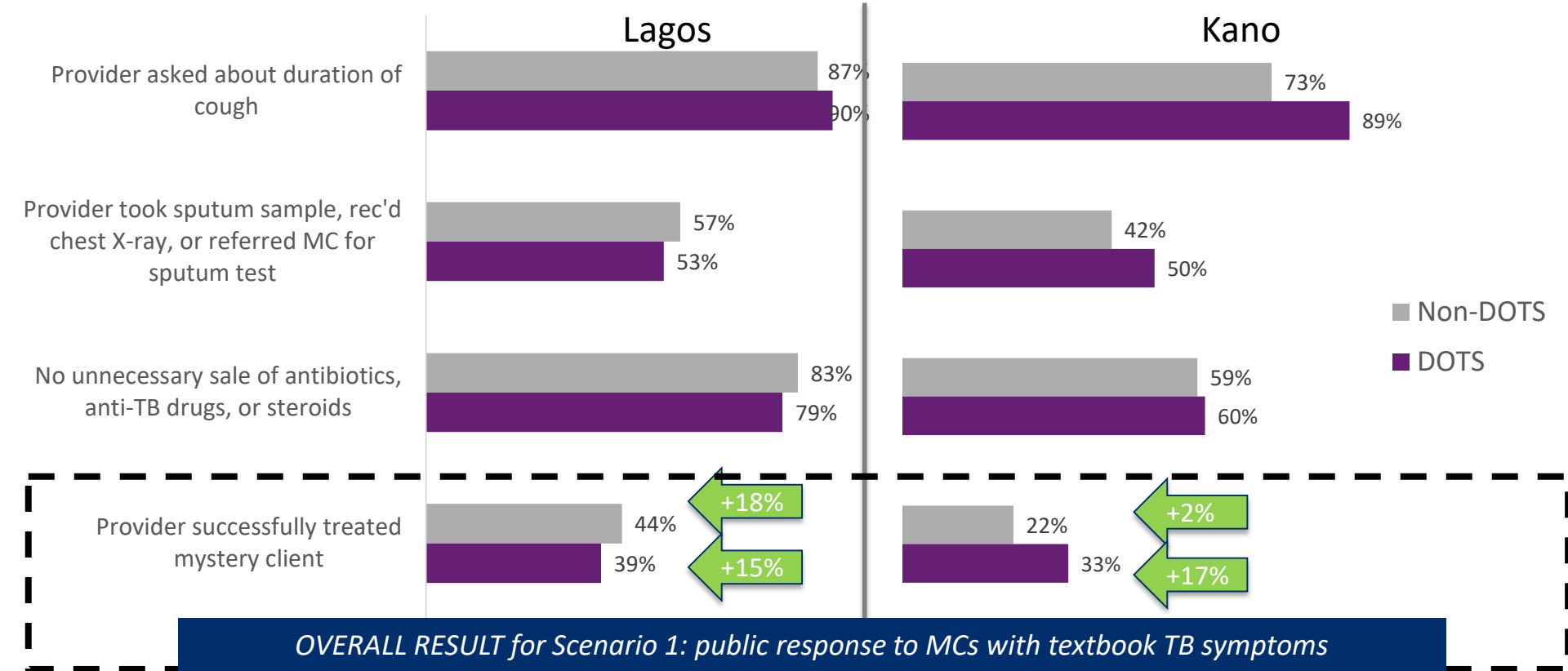
Public DOTS/Non-DOTS - Results for Scenario 1

Regardless of DOTS-designation, few **public facilities** met all 3 criteria for correct management



OVERALL RESULT for Scenario 1: public response to MCs with textbook TB symptoms

With relaxed screening criteria more **public facilities** meet all 3 criteria for correct management



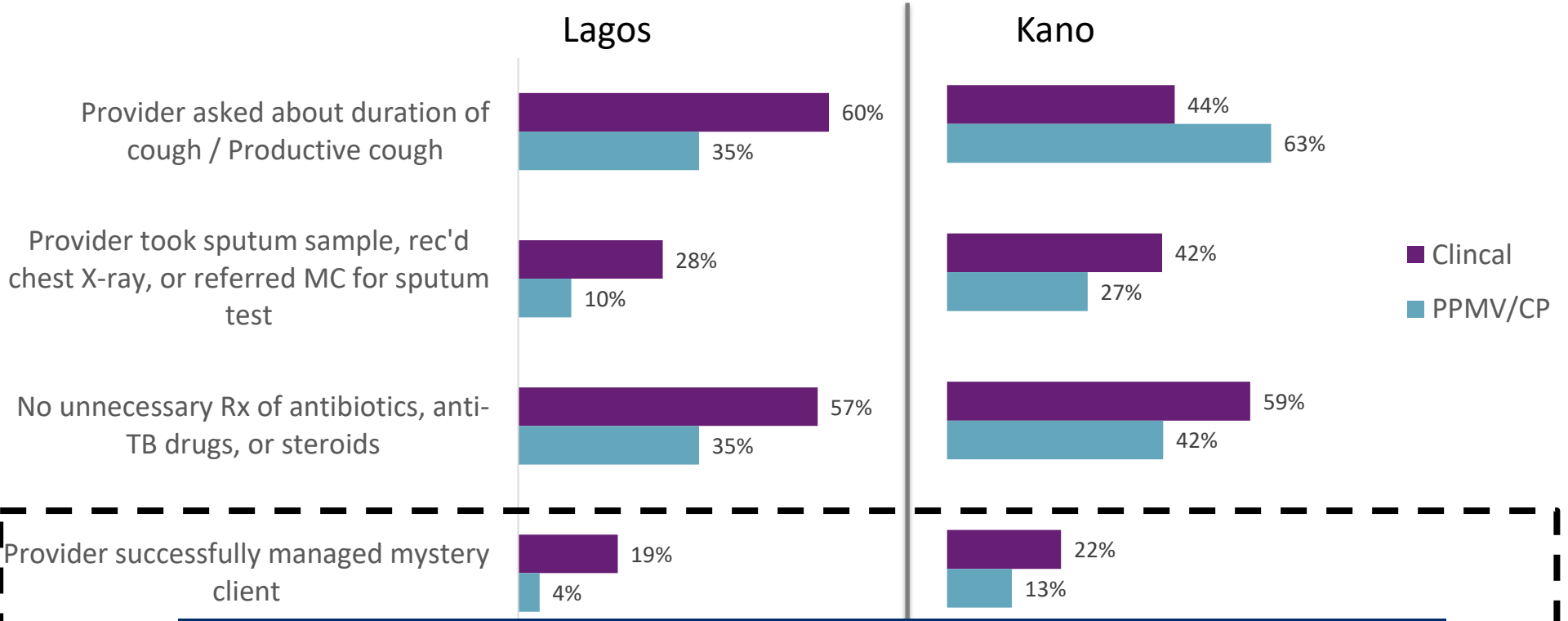
OVERALL RESULT for Scenario 1: public response to MCs with textbook TB symptoms

Key findings for **public facilities** on managing "textbook" presumptive TB cases

- **Less than a quarter of providers demonstrated appropriate management** of a presumptive TB patient in alignment with national or international guidelines (regardless of DOTS or non-DOTS status).
  - MCs were asked relatively few screening questions.
  - Still, about half of the MCs were subjected to an appropriate diagnostic (sputum test, x-ray, or referral to a DOTS)
- **Rx for unnecessary or inappropriate medications was more common in Kano than in Lagos**
  - Unnecessary/inappropriate Rx is ~20% in Lagos and ~40% in Kano

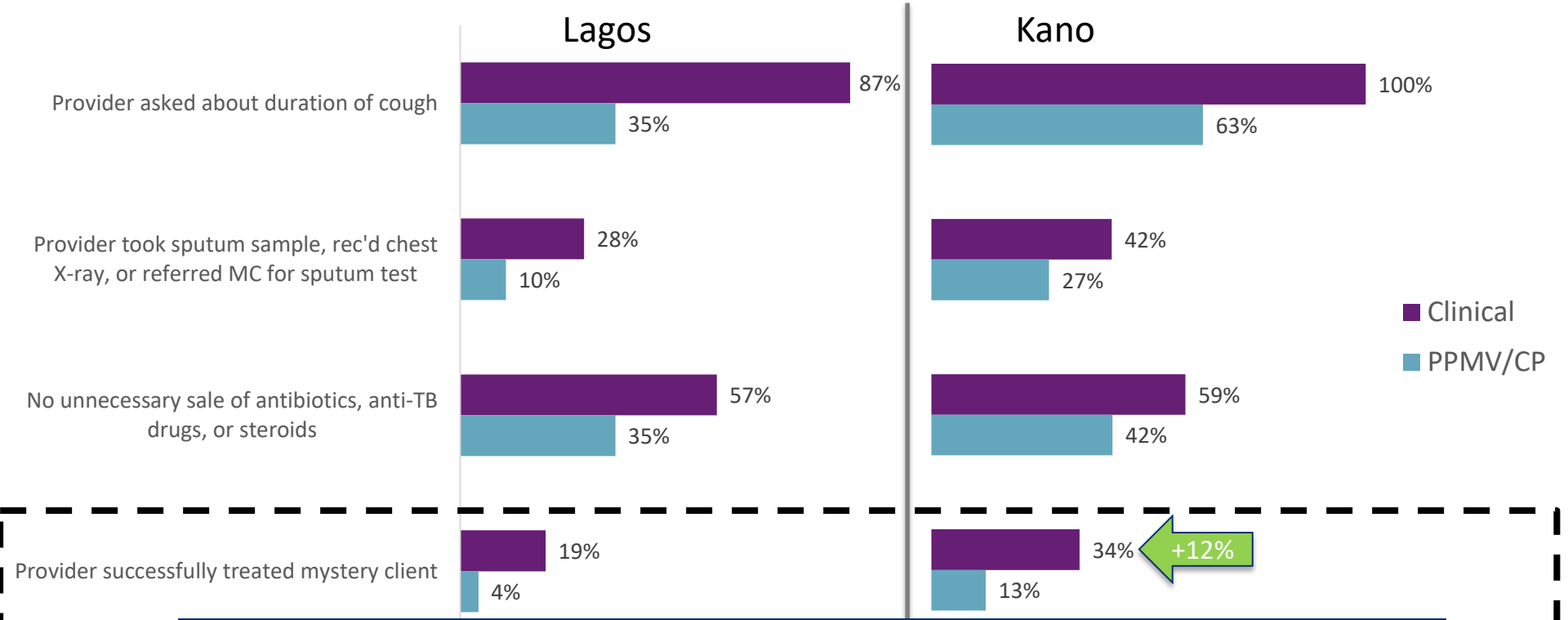
Private Unengaged- Results for Scenario 1

Few **unengaged private** facilities met all 3 criteria for correct management



OVERALL RESULT for Scenario 1: unengaged response to MCs with textbook TB symptoms

Few **Unengaged private** facilities met all 3 criteria for correct management



OVERALL RESULT for Scenario 1: unengaged response to MCs with textbook TB symptoms

Key findings for **unengaged private** facilities on managing “textbook” presumptive TB cases

- **Less than one fifth of unengaged providers demonstrated appropriate management** of a presumptive TB patient in alignment with national or international guidelines.
- Among clinical providers and CPs/PPMVs in Kano, **there is some evidence that providers are asking history/screening questions helpful for identifying presumptive patients**
  - Provides a good platform on which to improve provider awareness of and/or consistency on TB screening
- **Dispensing of unnecessary and/or inappropriate medications was common** - nearly 40% among clinical providers and 60% among PPMVs/CPs

RESULTS FOR SCENARIO 3

How did SHOPS Plus CPs and PPMVs respond to clients making direct requests for TB drugs (i.e. rifampicin)?

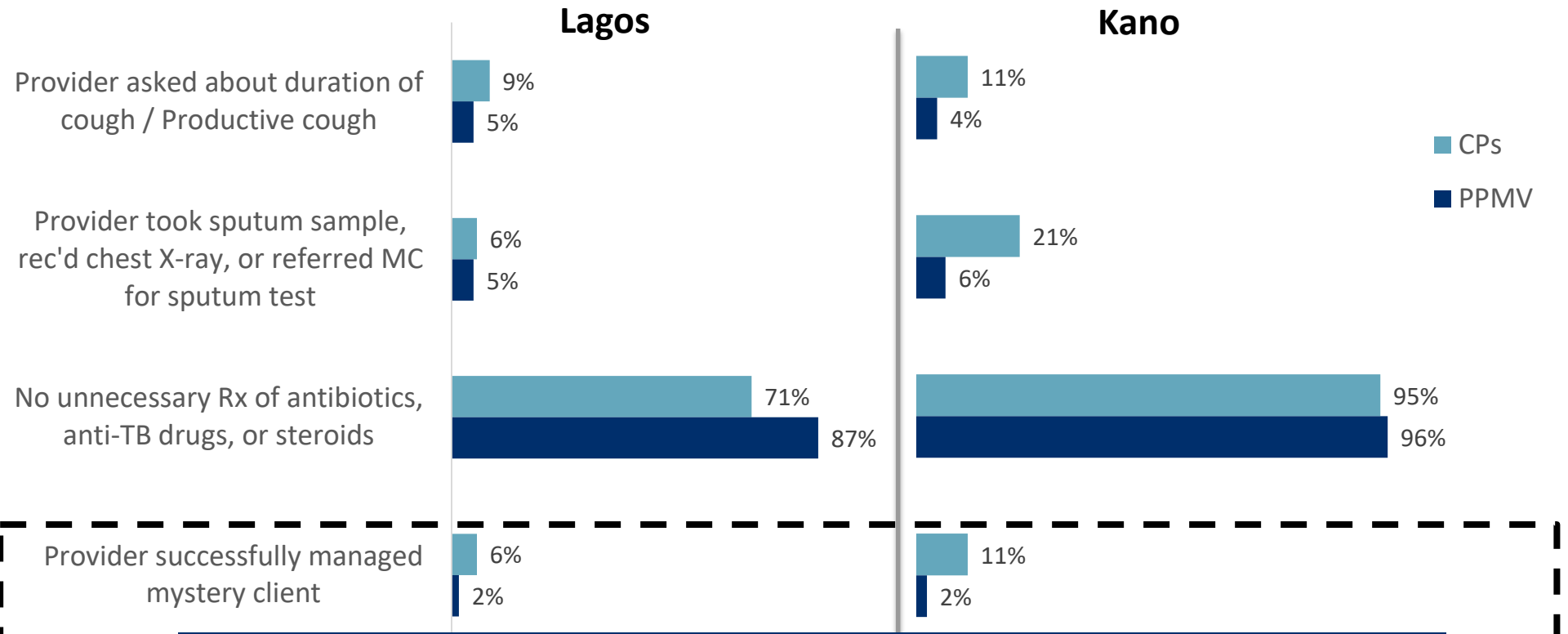
PPMVs and CPs must meet 3 criteria to demonstrate a fully “correct” response:

1. Confirm cough duration of 2 weeks or longer.

2. Take (or attempt to take) sputum sample, recommend a chest x-ray, or referral to public or private clinical DOTS facility.

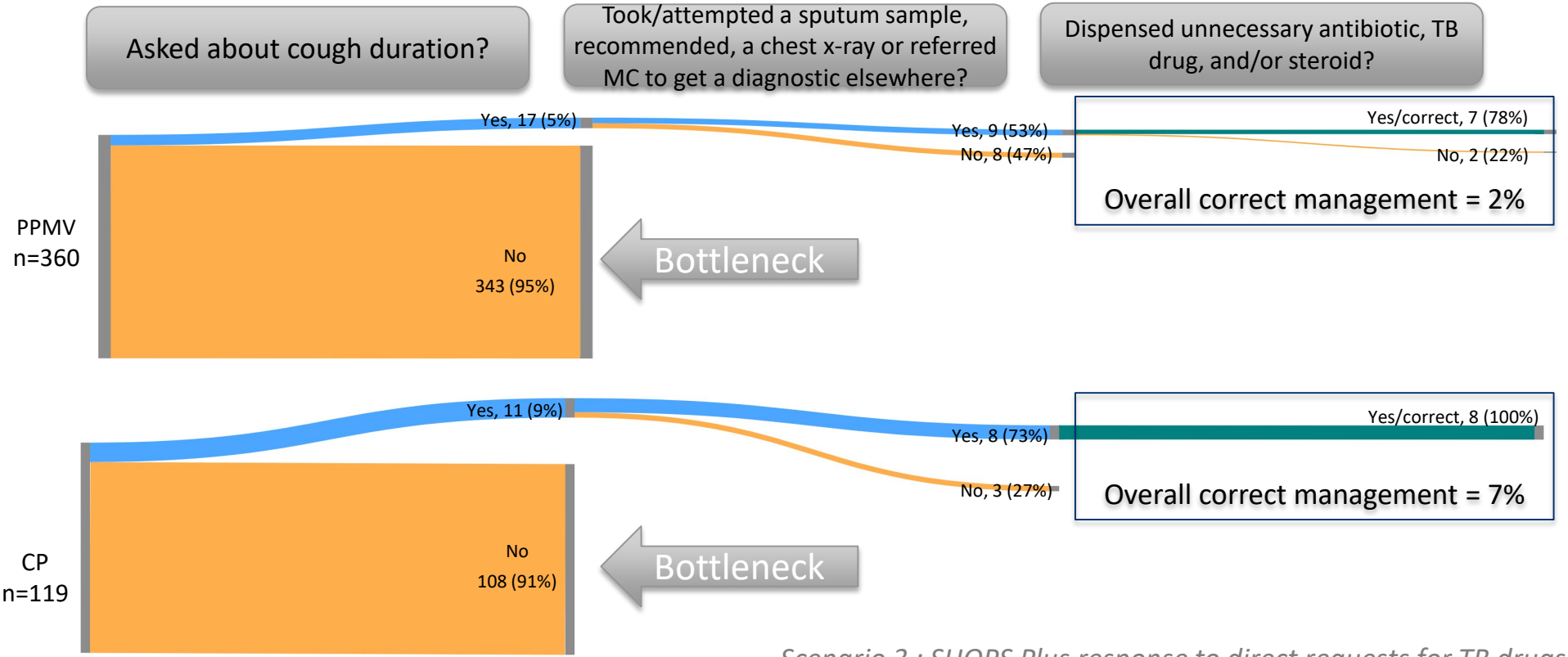
3. No sale of antibiotics (including anti-TB drugs or fluoroquinolones), and steroids.

Most **SHOPS Plus CPs and PPMVs** did not screen or take sputum samples in Scenario 3



OVERALL RESULT for Scenario 3: SHOPS Plus response to direct request for TB drugs

Most CPs and PPMVs did not initiate screening



Scenario 3 : SHOPS Plus response to direct requests for TB drugs

Key findings for **SHOPS Plus CPs & PPMVs** on responding to direct requests for TB drugs

- Two potential explanations for low rifampicin sales:

  1. **Providers did not recognize rifampicin as a controlled, TB-specific drug**
     - SHOPS Plus training for PPMVs did not include specific details on TB drugs
     - Training for CPs **did** include information on TB drugs, but CP counters are not always staffed by trained pharmacists (SHOPS Plus training focused on the pharmacist, not lower-level CP staff)
  2. **Providers recognized a direct request for the drug as a potential 'sting' operation by a regulator**
     - Less likely because: MCs did not observe any tension/suspicious reactions from CPs or PPMVs, and these types of operations are not commonplace

- The low rate of rifampicin sales to MCs suggests that there is no rampant, uncontrolled dispensing of TB drugs in Lagos and Kano.
- **CPs and PPMVs missed an obvious opportunity ask about cough**, which suggests that PPMVs and CPs are NOT engaging in generalized screening

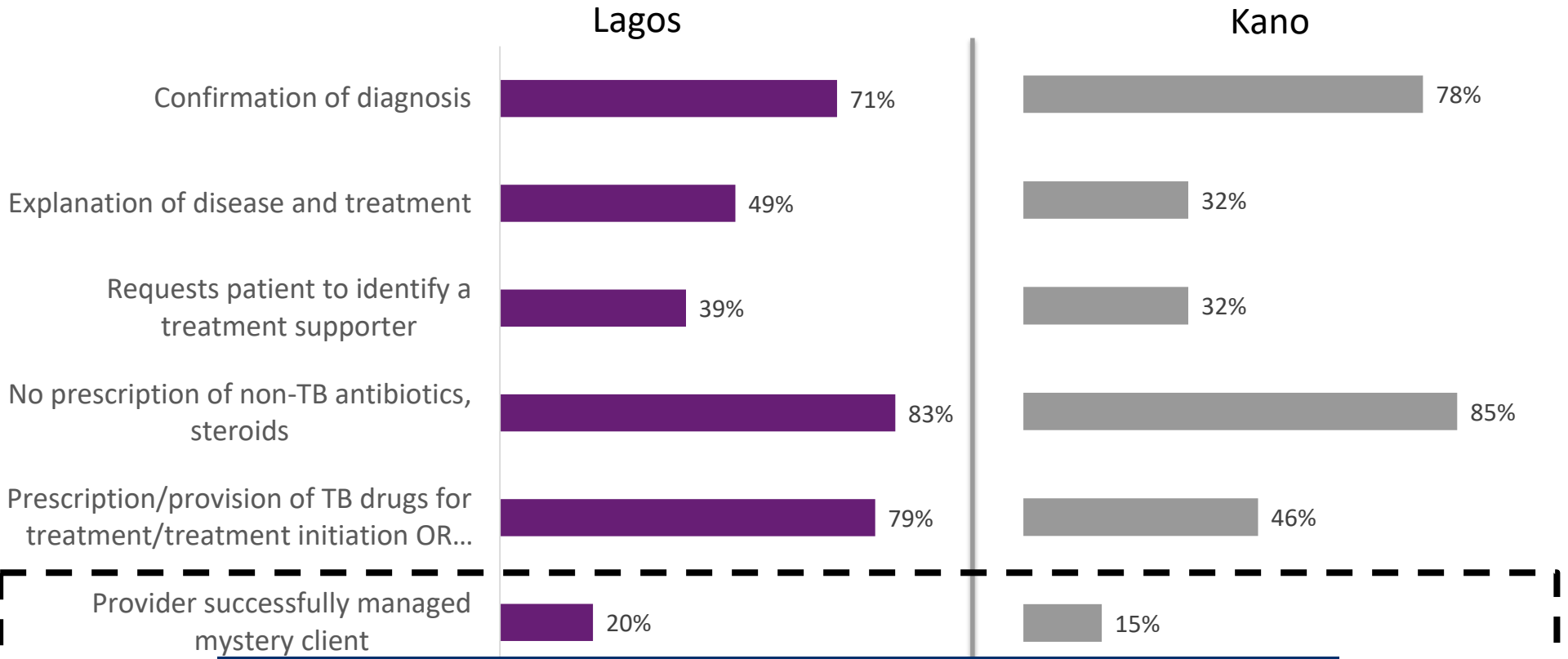
RESULTS FOR SCENARIO 4

Did SHOPS Plus and public DOTS providers appropriately counsel and initiate treatment with newly-diagnosed TB patients?

Clinical providers must meet 5 criteria to demonstrate a fully “correct” response:

1. Confirmation of diagnosis by looking at referral form/GeneXpert result AND telling the patient they have TB
2. Explanation of disease and treatment:
   - Explain TB is curable AND
   - Explain medicines used to treat TB AND
   - Explain the duration (i.e. 6 months) AND
   - Emphasize the importance of taking TB medicine daily
3. Requests patient to identify a treatment supporter
4. No prescription of non-TB antibiotics, steroids (i.e. unnecessary drugs)
5. Initiate TB treatment:
   - Give a prescription and/or provide TB drugs directly to patient OR
   - Request the patient begin observed treatment during the counseling session OR
   - Request patient come back later with the treatment supporter

Few **SHOPS Plus** facilities met all 5 criteria for new patient counseling and treatment initiation



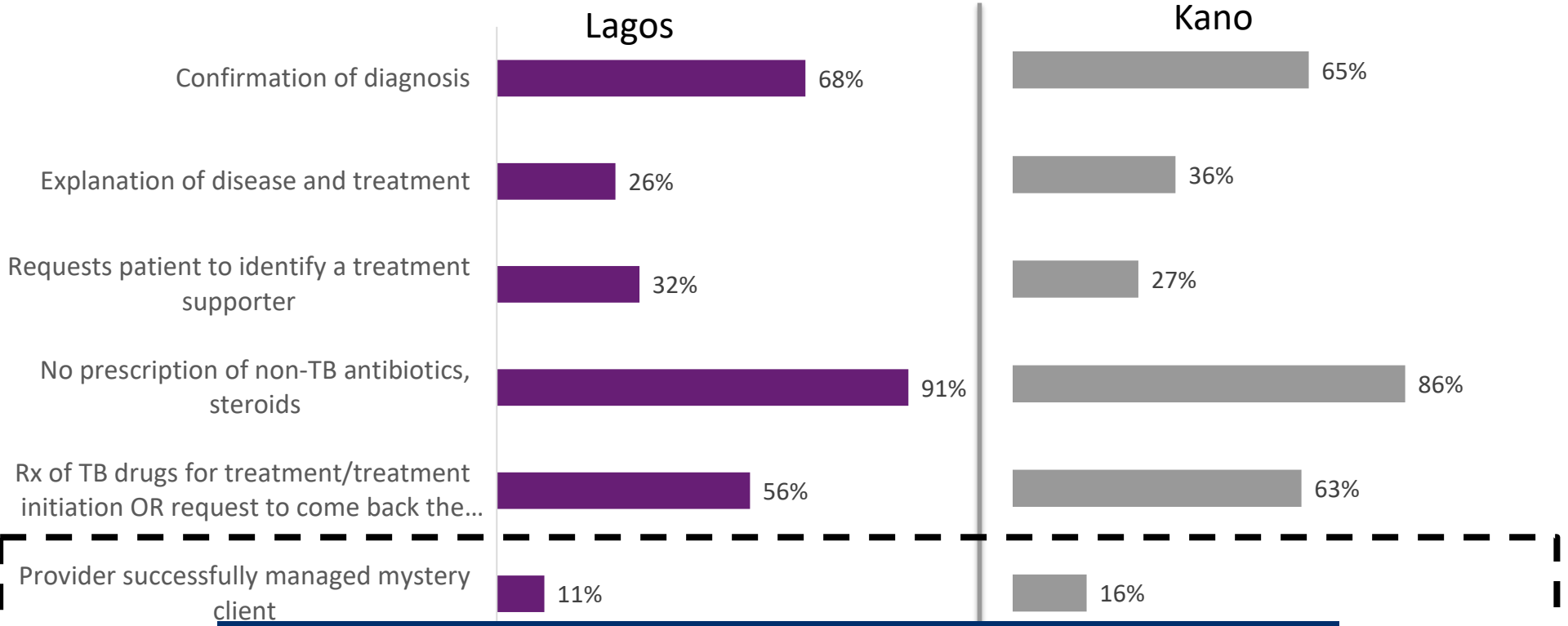
OVERALL RESULT for Scenario 4: SHOPS Plus counseling of newly-diagnosed TB patients

Key findings for **SHOPS Plus clinical facilities** on responding to newly-diagnosed TB patients

- With so many (5) criteria to meet this was a more “difficult” scenario to correctly manage
- Most providers successfully confirmed TB and moved the patient toward a treatment regimen, but did not:
  - Counsel as thoroughly as national guidelines recommend
  - Emphasize selection of a treatment supporter
- Results indicate that SHOPS Plus providers need additional coaching on how to thoroughly counsel confirmed TB patients

Public DOTS - Results for Scenario 4

Few **public DOTS facilities** met all 5 criteria for counseling and treatment initiation



OVERALL RESULT for Scenario 4: Public DOTS counseling of newly-diagnosed TB patients

Key findings for **public DOTS facilities** on responding to diagnosed TB patients

- Although many providers successfully confirmed TB and moved the patient toward a treatment regimen, the providers did not:
  - Counsel as thoroughly as national guidelines recommend
  - Emphasize selection of a treatment supporter
- Some providers delayed treatment initiation and instead requested the MC first re-confirm their test result in the DOTS facility
  - Suggests DOTS facilities may not be aware of SHOPS Plus and the possibility that referrals originating from the private sector are possible

Discussion

Challenges and limitations

- The results reflect a single interaction at a single point in time
- MCs interacted with whoever happened to be on duty at the time of their visit
  - Not everyone with whom MCs interacted were directly trained or coached by SHOPS Plus
- Regressions did not control for provider/facility factors that were not directly observable during the MC interaction
- Survey implementation coincided with a period of time in which there were known issues with the speed and efficiency of the GeneXpert testing system
- Six instances in which Scenario 4 MCs were either detected (n=1) or interacted with a SHOPS Plus network officer or staff (n=5)
  - These cases were omitted from analysis

How do these findings compare with other TB quality studies using MCs?

Study	Country	Sector	Appropriate Diagnostic or Referral (% of MCs)	Rx for unnecessary or inappropriate antibiotics (% of MCs)
Christian et al., 2018	South Africa	Public	84%	8%
Daniels et al., 2017	Kenya	Both	79% public 33% private	47% public 47% private
Sylvia et al., 2017	China	Public	41%	71%
Kwan, et al., 2018	India	Private	35%	44%
Das et al., 2015	India	Private	16%	88%
SHOPS Plus clinical	Nigeria	Private	56%	39%
Public clinical	Nigeria	Public	49%	32%
Unengaged clinical	Nigeria	Private	34%	42%

Next steps: an opportunity for collaboration and adaptive management

- The study results suggest some areas of improvement for SHOPS Plus, but we hypothesize this involves more than just increasing/intensifying our existing supportive supervision regime
  - Create job aids to help providers counsel confirmed patients thoroughly
- We want to implement workshops with SHOPS Plus providers to:
  - Share study results with providers and understand what *they* think contributes to undesirable outcomes and bottlenecks
  - With providers, co-create private-sector friendly approaches that could improve case management outside/in addition to supportive supervision

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