Collaboration & Innovation at Scale: Malaria Consortium's experiences with upSCALE & SMC

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Joint International Tropical Medicine Meeting 2017

Outline

1. Scaling up
2. upSCALE
3. Seasonal Malaria Chemoprevention
4. Key messages

The value of program scale

Scaling up

“deliberate efforts to increase the impact of successfully tested health innovations so as to benefit more people and to foster policy and programme development on a lasting basis”

ExpandNet, World Health Organization 2010

The value of program scale

Scaling up

- Leads to equitable access (including quality of care)
    - Vulnerable groups
    - Hard-to-reach groups
    - Gender equity
    - Human rights
- Facilitates sustainability
    - Vertical scaling up
    - Horizontal scaling up

The value of program scale

Scaling up

- Fosters program improvement *(Barker et al., 2016. A framework for scaling up health interventions: lessons from large-scale improvement initiatives in Africa)*
- Creates collaboration *(WHO, 2016. Scaling up projects and initiatives for better health: from concepts to practice)*
- Encourages partnerships
    - Public-private partnerships

Scaling up

Barker, 2016 describes a sequential approach:

1) Set up

2) Develop the scalable unit

3) Test of Scale-up

4) Go to Full Scale

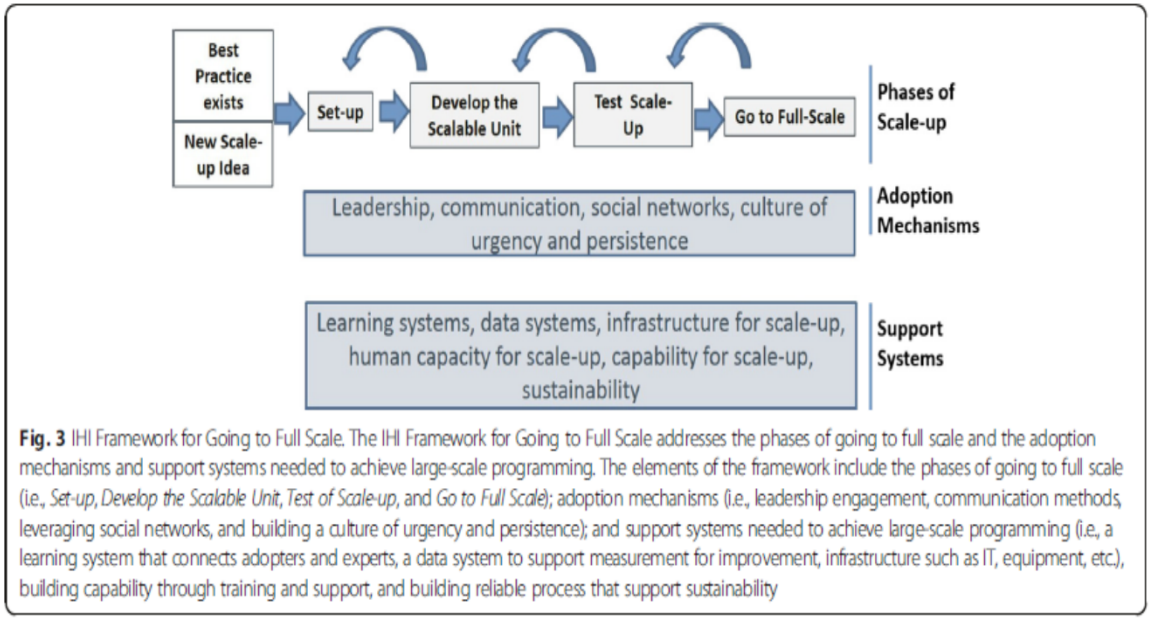


Fig. 3 IHI Framework for Going to Full Scale. The IHI Framework for Going to Full Scale addresses the phases of going to full scale and the adoption mechanisms and support systems needed to achieve large-scale programming. The elements of the framework include the phases of going to full scale (i.e., *Set-up*, *Develop the Scalable Unit*, *Test of Scale-up*, and *Go to Full Scale*); adoption mechanisms (i.e., leadership engagement, communication methods, leveraging social networks, and building a culture of urgency and persistence); and support systems needed to achieve large-scale programming (i.e., a learning system that connects adopters and experts, a data system to support measurement for improvement, infrastructure such as IT, equipment, etc.), building capability through training and support, and building reliable process that support sustainability

IHI Framework for Going to Full Scale

Scaling up

Cresswell et al., 2013.

Identify ten key considerations for the successful implementation and adoption of large-scale health information technology

Lifecycle stages of health information technology

- Establish the need for change
- Selecting a system
- Planning (implementation strategy, infrastructure, training)
- Maintenance and Evaluation

upSCALE

malaria
consortium
disease control, better health

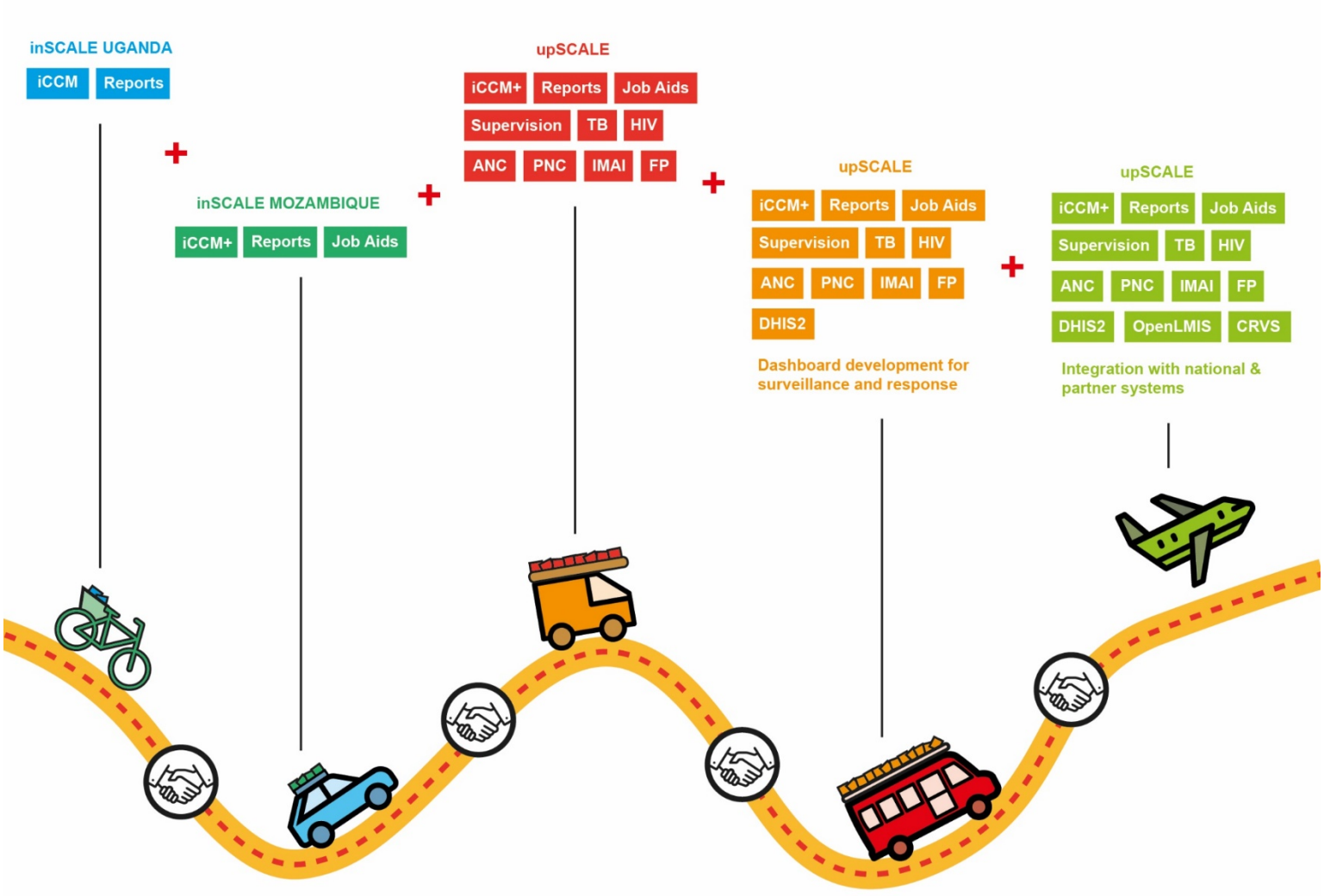
upSCALE

- inSCALE (Innovations at Scale for community access and lasting effects)

to

- upSCALE (http://www.malariaconsortium.org/upscale/pages/about-upscale)

Go to sub-presentation


inSCALE UGANDA
iCCM
Reports
inSCALE MOZAMBIQUE
iCCM+
Reports
Job Aids
upSCALE
iCCM+
Reports
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Supervision
TB
HIV
ANC
PNC
IMAI
FP
upSCALE
iCCM+
Reports
Job Aids
Supervision
TB
HIV
ANC
PNC
IMAI
FP
DHIS2
Dashboard development for surveillance and response
upSCALE
iCCM+
Reports
Job Aids
Supervision
TB
HIV
ANC
PNC
IMAI
FP
DHIS2
OpenLMIS
CRVS
Integration with national & partner systems

upSCALE, a Digital Health Strategy

- From research to scale
- Gradual sequential approach
- Horizontal scaling up initially
- Scalable unit defined, as province
- Change package defined, improved to increase utility

upSCALE, a Digital Health Strategy

- SE Asia context
  - Pilots to scale, vertical scaling up
  - Malaria elimination, surveillance
  - Digital innovations for health impact, integration
  - Contribute to national economic development schemes, such as Thailand 4.0, through the SDGs
  - Opportunities for regional collaborations

Seasonal Malaria Chemoprevention (SMC)

malaria
consortium
disease control, better health

Seasonal Malaria Chemoprevention (SMC)

- ✓ WHO Recommendation: March 2012
- Age: 3 to 59 months
- Areas of highly seasonal malaria transmission
- Sahel sub-region of sub-Saharan Africa
- ➢ WHO released an implementation guide to help countries adopt and implement SMC: August 2013

- o Up to 10 years of age in some areas (Senegal, parts of Mali)

Drugs

- Amodiaquine (AQ)
- Sulfadoxine-Pyrimethamine (S/P)

Drug administration

- Strict timing of treatments
- 4 weeks apart
- Delivery through community health worker (CHW)
- SMC can be obtained at facilities
- The day 1 dose is administered by the CHW
- The AQ for day 2 and day 3 is left with the caregiver to administer unsupervised

Age	Dosage
Infants 3-11 months	Day 1: 250/12.5mg S/P plus 75mg AQ Day 2 & 3: 75mg AQ
Children 12-59 months	Day 1: 500/25mg S/P Day 2 & 3: 150mg AQ

ACCESS-SMC – Strategic intent

Catalyse the market

- Confirmed, Funded demand
- Timing of orders
- Child-friendly formulations

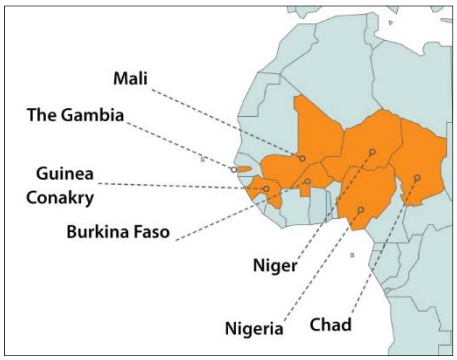
Demonstrate feasibility, efficacy, effectiveness & safety at scale

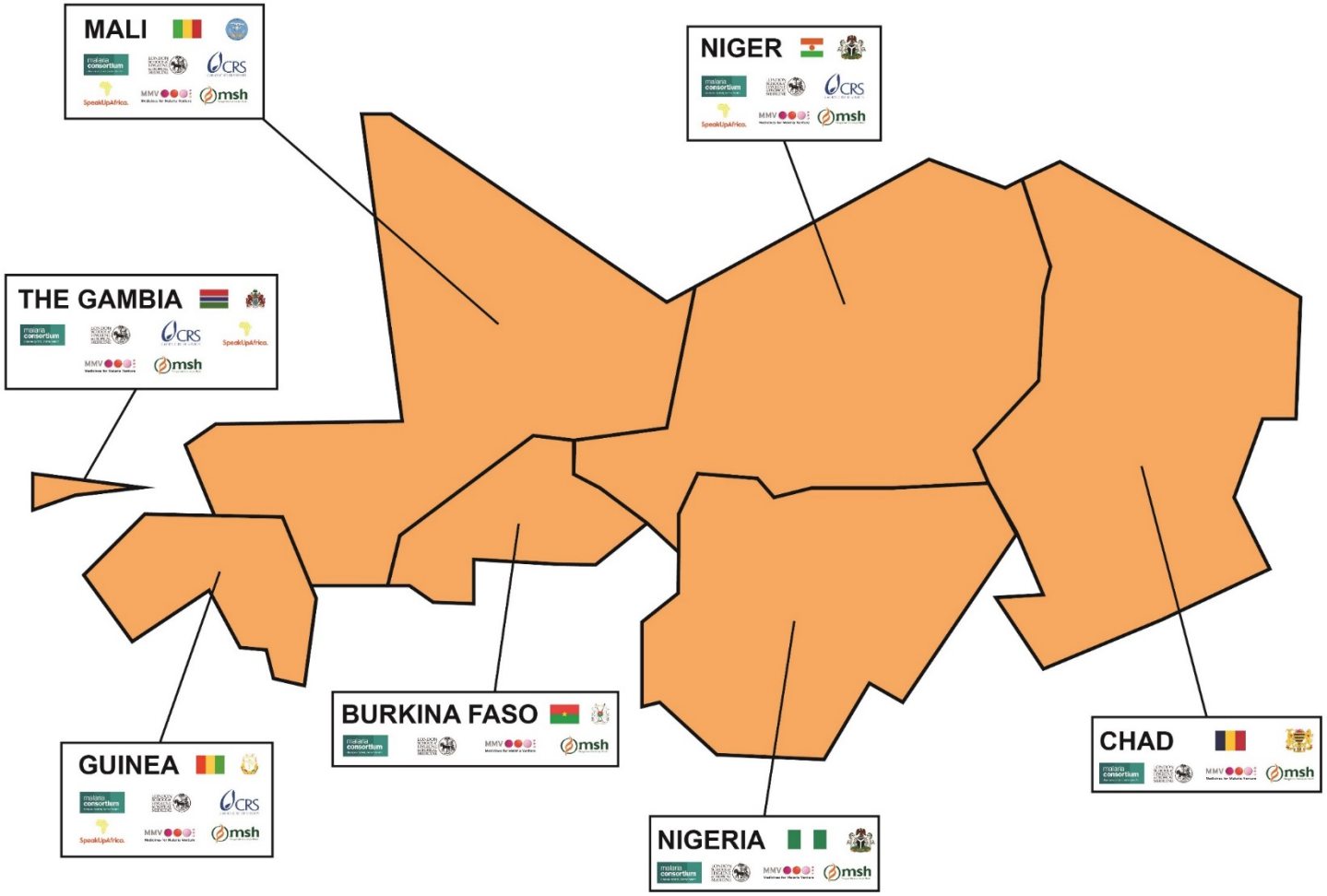
Funded by UNITAID

complex delivery

ACCESS SMC

Achieving catalytic expansion of seasonal malaria chemoprevention in the Sahel




MALI
NIGER
THE GAMBIA
BURKINA FASO
GUINEA
NIGERIA
CHAD

SMC delivery methods

Method of delivery	Countries
Door-to-door delivery:	Burkina Faso, Guinea, Niger, The Gambia, Chad and Nigeria
Delivery through fixed point at health centre	Burkina Faso, Mali, Niger
Semi-mobile	Mali


SMC
Preventing malaria
In Children
SMC : I CARE

Seasonal Malaria Chemoprevention (SMC)

The scale-up of SMC in 2015 and 2016 was organised largely through the ACCESS-SMC project, funded by UNITAID, in the 7 countries.

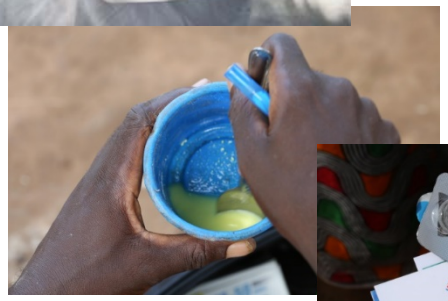
One supplier of quality-assured drugs for SMC (Guilin, China), co-blister packs.

Dispersible tablets became available in 2016.

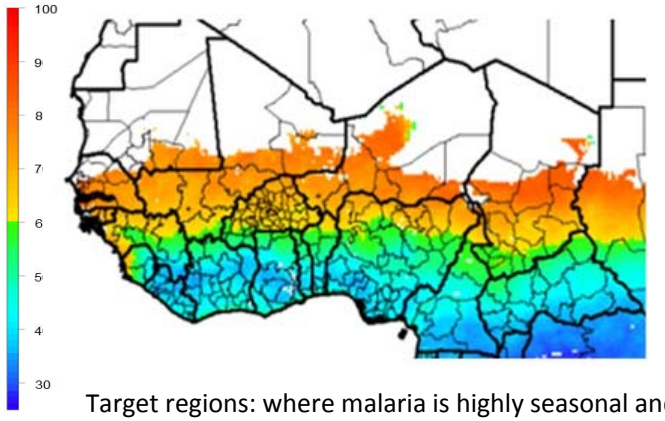
Second manufacturer from 2017 (SKant).


SPAQ-CO®
3 - <12 months
mois
Sulfadoxine/Pyrimethamine + Amodiaquine
(250 mg/12.5 mg) (75 mg)
Presence of lactose in this product
Présence de lactose dans ce produit
Preventive treatment for malaria
Traitement préventif du paludisme
SPAQ-CO® Disp
3 - <12 months
mois
Sulfadoxine/Pyrimethamine + Amodiaquine
(250 mg/12.5 mg) (76.5 mg)
Preventive treatment for malaria
SPAQ-CO®
12-59 months
mois
Sulfadoxine/Pyrimethamine + Amodiaquine
(500 mg/25 mg) (150 mg)
Presence of lactose in this product
Présence de lactose dans ce produit
Preventive treatment for malaria
Traitement préventif du paludisme
50 blister strips
plaquettes
GPSC
SPAQ-CO® Disp
12-59 months
mois
Sulfadoxine/Pyrimethamine + Amodiaquine
(500 mg/25 mg) (153 mg)
Preventive treatment for malaria
Traitement préventif du paludisme
50 blister strips
plaquettes

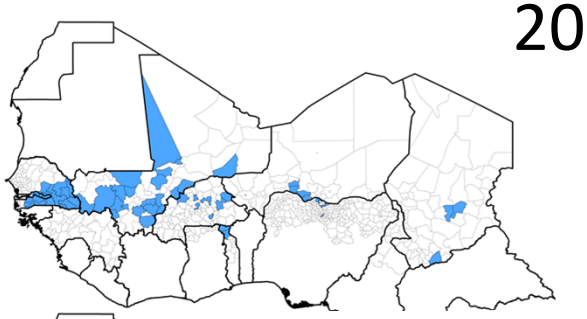

SPAQ-CO
SPAQ-CO



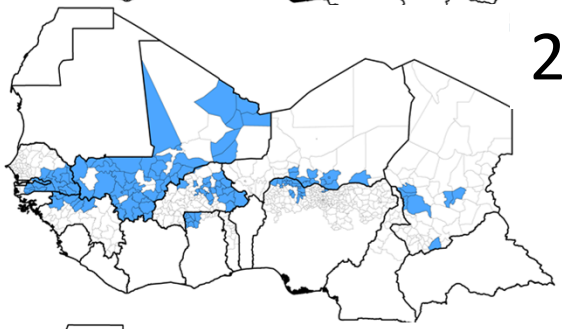
Scale-up of SMC



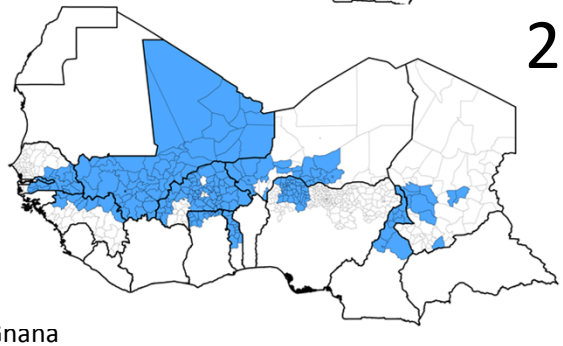
Target regions: where malaria is highly seasonal and incidence exceeds 10% per year, shown in orange, there are about 21million children under 5 years of age



2014 (2.5m)



2015 (4m)



2016 (12m)

2012: Mali, Niger
2013: Mali, Niger, Chad, Senegal, Nigeria, Togo
2014: Mali, Niger, Chad, Senegal, Nigeria, Togo, Gambia, Burkina Faso
2015: Mali, Niger, Chad, Senegal, Nigeria, Gambia, Burkina Faso, Guinea, Gnana
2016: Mali, Niger, Chad, Senegal, Nigeria, Togo, Gambia, Burkina Faso, Guinea, Ghana, Cameroun, Guinea Bissau

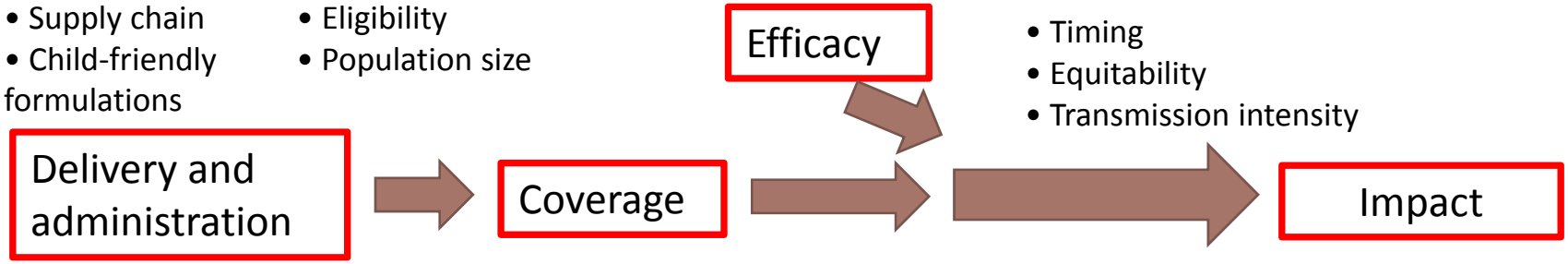
Monitoring and evaluation of SMC programmes

Factors that influence impact:

- Planning
- Training
- Supervision
- Supply chain
- Child-friendly formulations

- Geographical reach
- Acceptability
- Safety
- Eligibility
- Population size

- Administration
- Adherence
- Drug resistance



Measurement considerations:

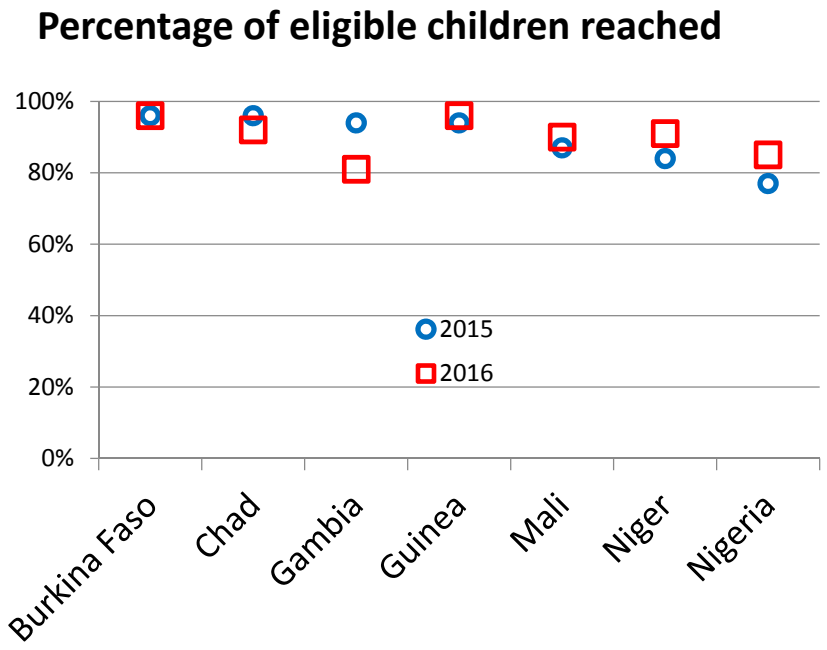
- Documentation
- Completeness

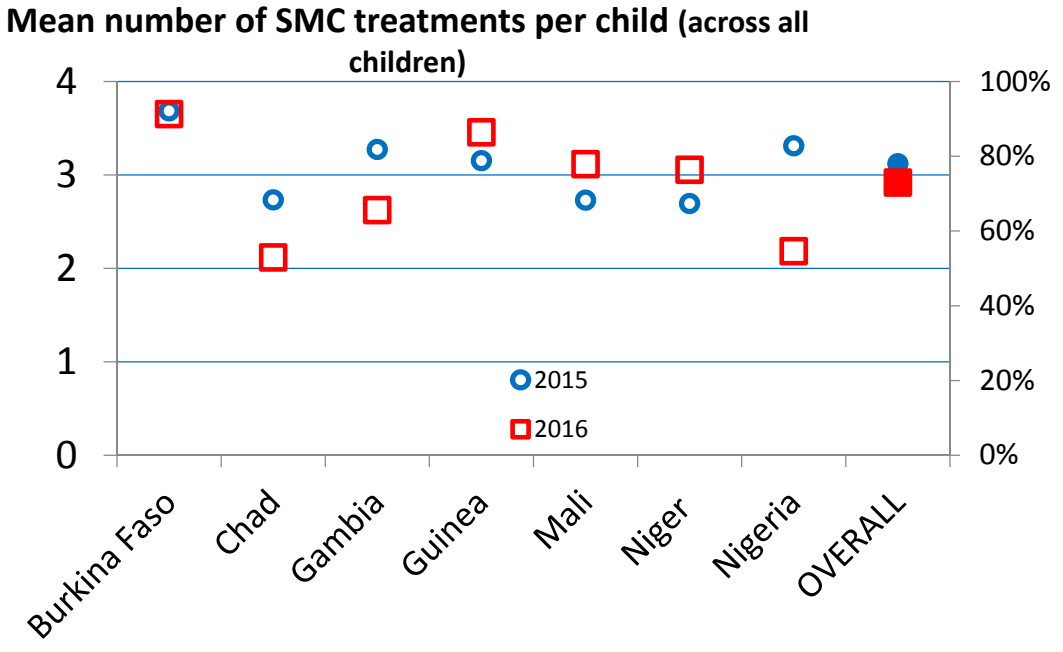
- Objective survey participant selection
- Assessment of SMC status

- Selection of cases and controls
- Assessment of SMC status
- Resistance: sampling and standardisation of lab methods for molecular markers

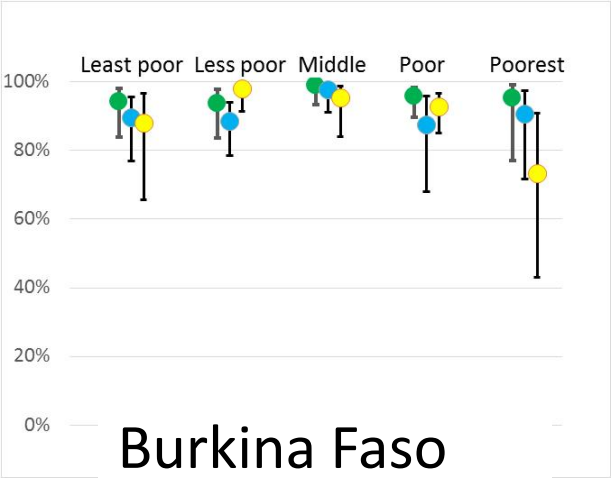
- Parasitological confirmation
- Accuracy, completeness of records
- Quality of information systems
- Catchment area
- Effects of other interventions
- Changes in policies
- Variations due to climate, locality
- Transmission intensity

Coverage


Percentage of eligible children reached
100%
80%
60%
40%
20%
0%
2015
2016
Burkina Faso
Chad
Gambia
Guinea
Mali
Niger
Nigeria

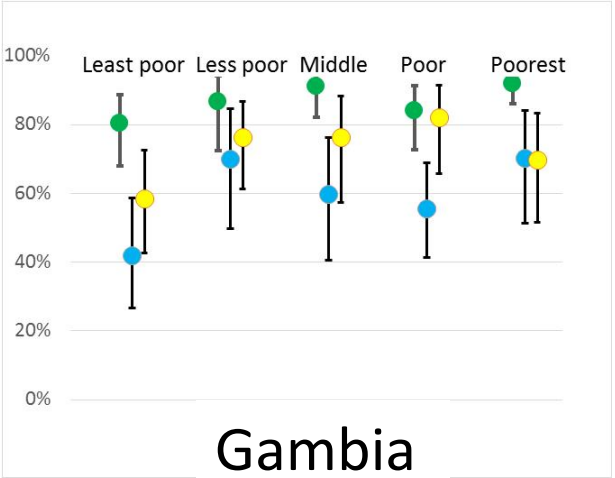

Mean number of SMC treatments per child (across all children)
4
3
2
1
0
100%
80%
60%
40%
20%
0%
2015
2016
Burkina Faso
Chad
Gambia
Guinea
Mali
Niger
Nigeria
OVERALL

Door-to-door delivery is equitable



Burkina Faso

Door-to-door, 2015



Gambia

Door-to-door, 2015

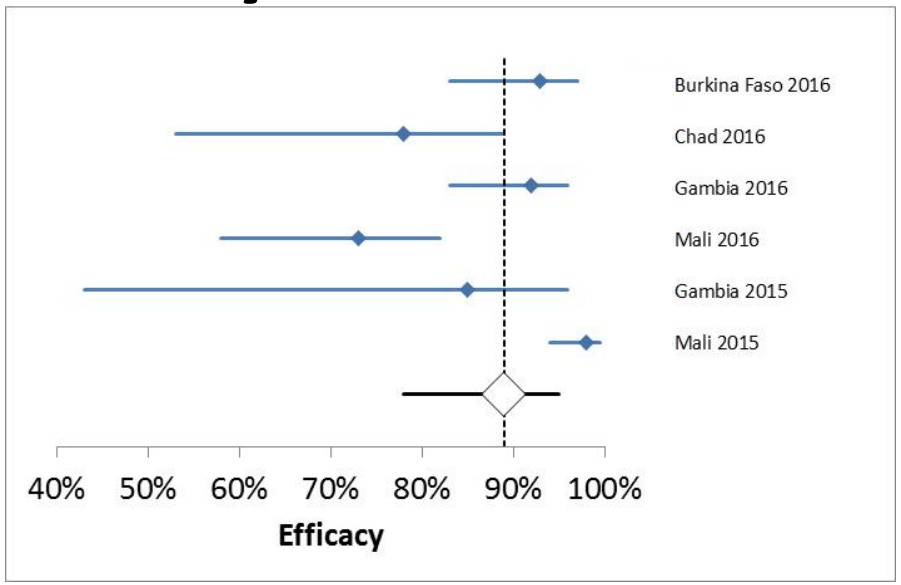
Mali

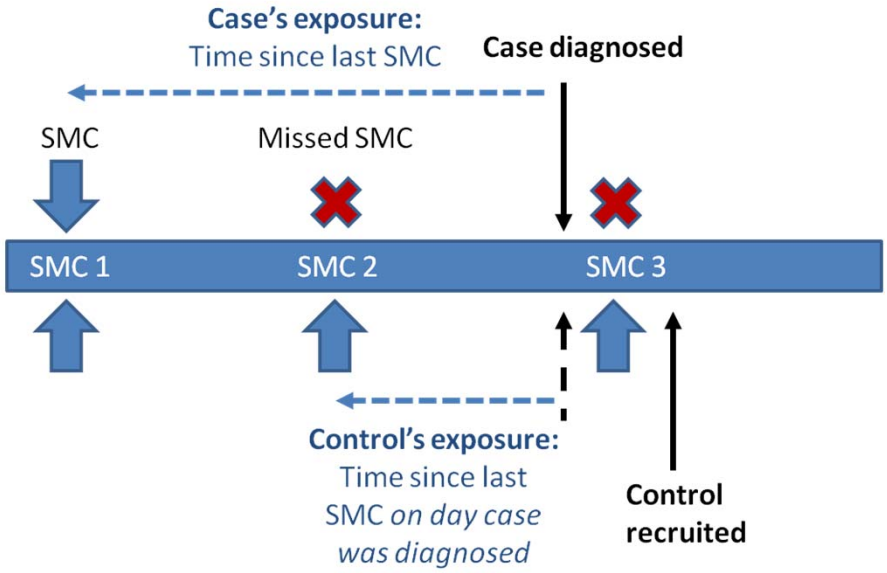
Mobile teams, 2015

- 3 or more SMC treatments
- 4 SMC treatments
- Sleeps under LLIN

(Equitability improved in 2016 by using door-to-door)

Efficacy: case-control method





Efficacy of monthly treatments:

89% (95%CI 78%,95%) up to 4 weeks

62% (95%CI 46%, 73%) in weeks 5-6

no protection after 6 weeks

Impact

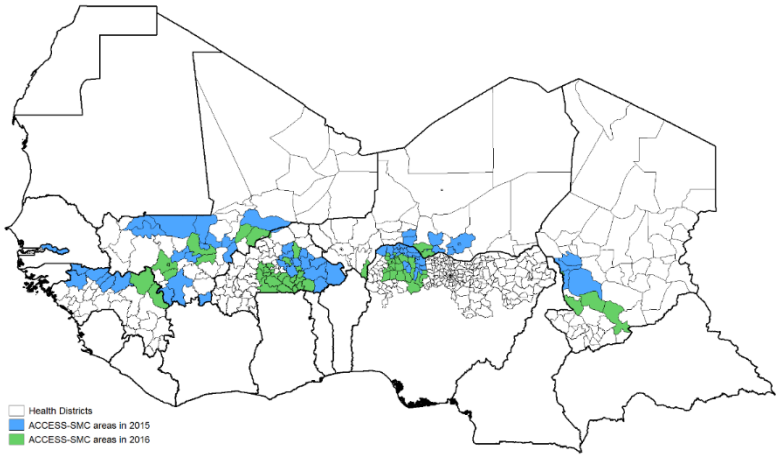
National HMIS data on confirmed outpatient cases, inpatients, and malaria deaths

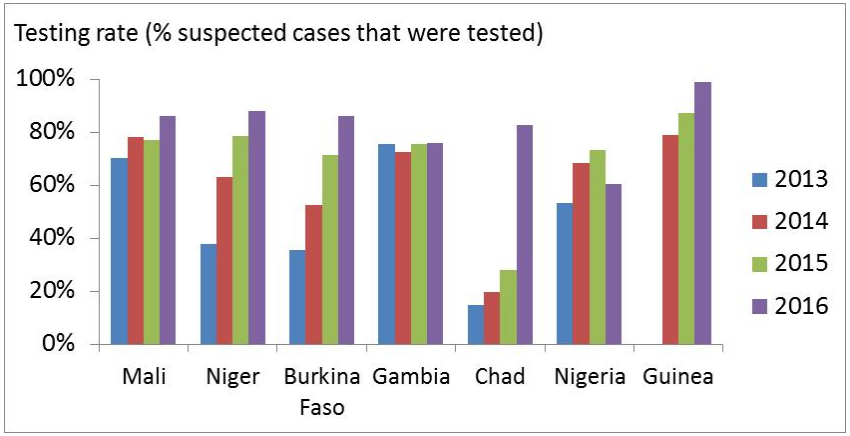
Supplemented by more detailed data collected from selected health facilities (sentinel surveillance)

Monthly numbers of cases in children under 5 years of age and in older age groups, before and after introduction of SMC

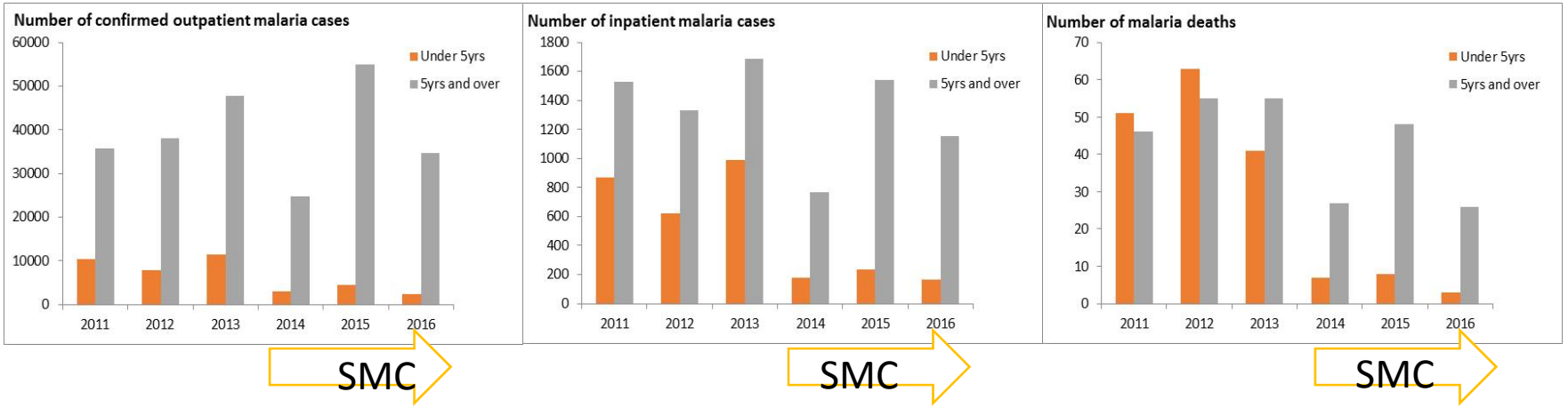
Phased introduction of SMC 2015-2016

RDT confirmation more widespread



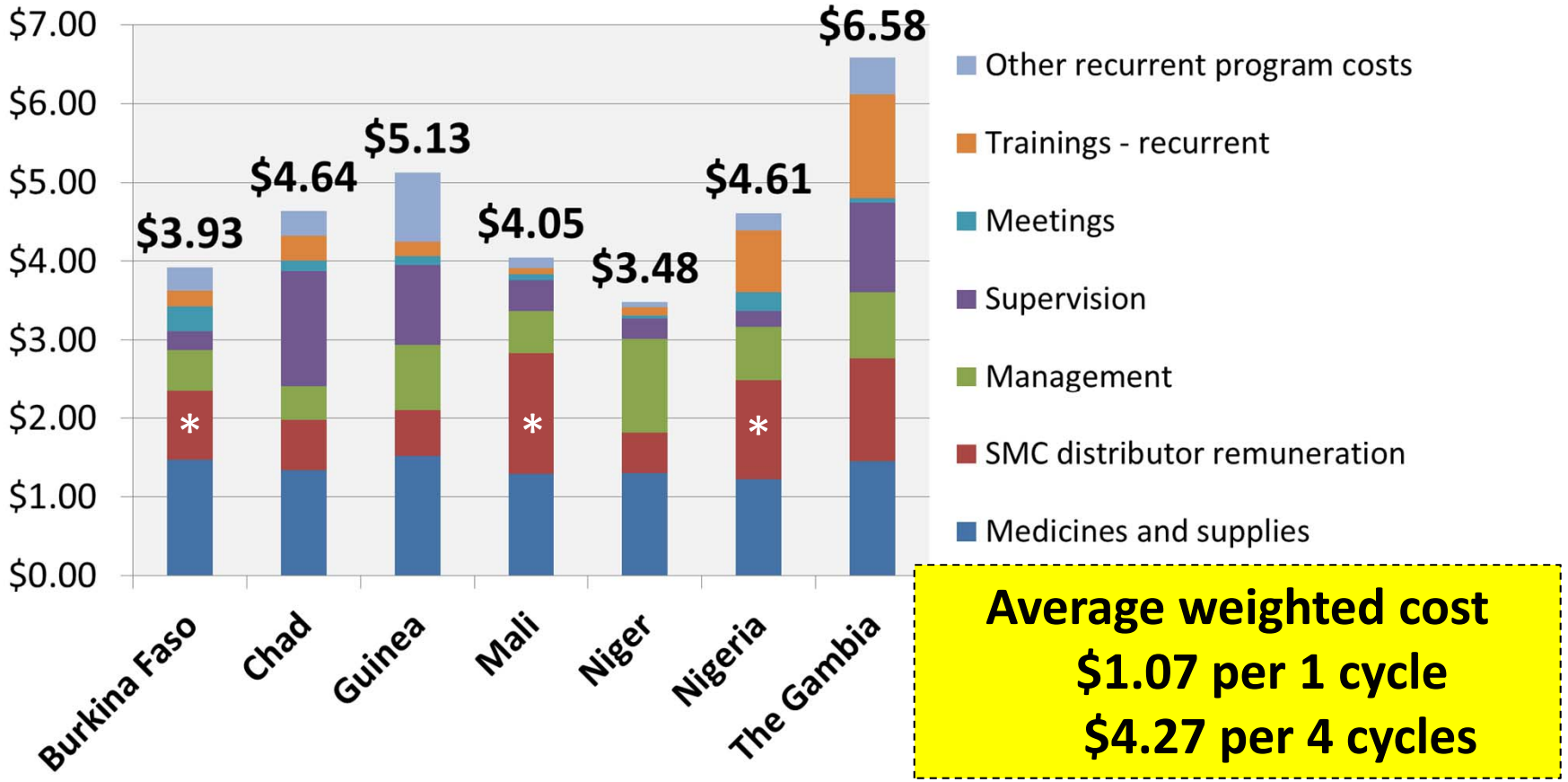


The Gambia



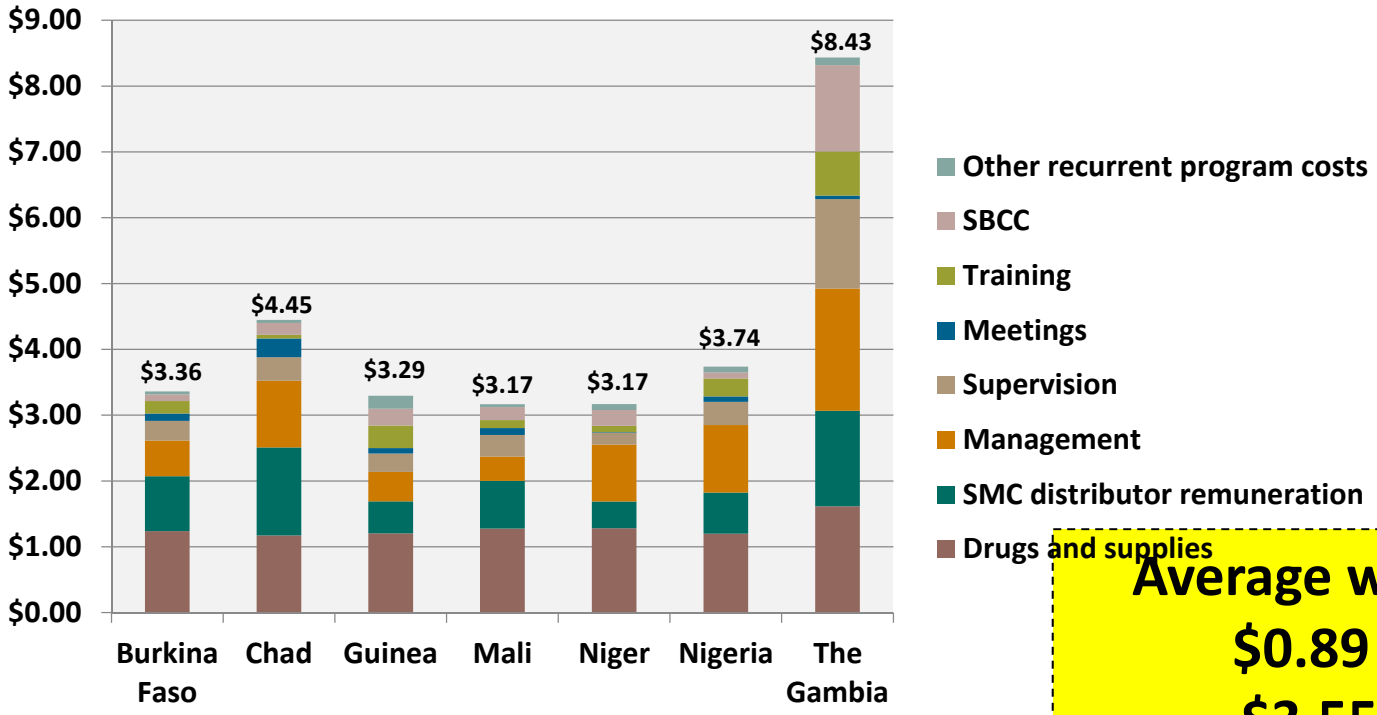
- Reduction in incidence following introduction of SMC
- No similar relative reductions in under 5's in other regions of the Gambia that do not have SMC
- Poisson regression estimates of the relative reduction in under 5's, adjusted for year, age and region: 53% (95%CI 42%,61%) outpatients; 55% (29%,71%) inpatients; 74% (62%,82%) malaria deaths

ACCESS-SMC - Recurrent Cost per Child - 4 cycles (2015)



Average weighted cost
$1.07 per 1 cycle
$4.27 per 4 cycles

ACCESS-SMC – Average Equivalent Recurrent Cost per Child for 4 cycles by country (2016 US $)



Average weighted cost
$0.89 per 1 cycle
$3.55 per 4 cycles

SMC, a multi-country collaboration

- From research to scale
- Rapid sequential approach
- Vertical scaling up initially
- Scalable unit defined, as country
- Change package defined, improved to reduce complexity

SMC, a multi-country collaboration

- SE Asia context
  - Malaria elimination, regional collaborations
  - Opportunities for public-private partnerships for mixed financing of multi-country scale programmes
  - Opportunities for accelerated learning through sharing of best practices from SE Asia with Africa region

Key messages

- Scaling up is difficult but it can be done even with complex innovations
- Scaling up is a collaborative process and government should lead it
- Partnership is essential with each partner adding value in the scale up process
- Program implementation at scale can maximise the benefits of proven interventions

Acknowledgements

upSCALE team

ACCESS SMC team

National Governments, Ministries of Health

WHO

Unicef

Unitaid

UKaid

Thank you

malaria consortium
disease control, better health

www.malariaconsortium.org