malaria consortium
disease control, better health

# Seasonal Malaria Chemoprevention

## An Innovative Strategy to Reduce Malaria Morbidity and Mortality

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PREVENTION | DIAGNOSIS | TREATMENT | RESEARCH

# Background

- Global shift from a 'one size fits all' approach to the targeting of malaria control strategies to specific populations and/or locations for maximum effectiveness

- Based on accumulated evidence, in 2012, the World Health Organisation (WHO) issued a policy recommendation for a new intervention against *Plasmodium falciparum* malaria, **Seasonal Malaria Chemoprevention (SMC),** previously referred to as Intermittent Preventive Treatment in children (IPTc)

# What is Seasonal Malaria Chemoprevention?

- Intermittent administration of **full treatment courses** of an antimalarial treatment combination **during the malaria season** to prevent malaria illness
- Drug combination of choice is at present amodiaquine/sulfadoxine-pyrimethamine (AQ/SP)
- Objective of SMC is maintaining therapeutic antimalarial drug concentrations in the blood throughout the period of greatest risk

# Research evidence to support effectiveness of SMC

**Meta analysis and a Cochrane Review - potential impact:**

- If all of the SMC suitable areas of Sahel and sub-Sahel was covered; **approximately 5 million malaria episodes and 20,000 deaths could be averted***

*Meremikwu M, Donegan S et al: Cochrane Review (2012)*

**Cairns M, Roca Felterer A et al: Nat Commun (2012)*

- Intervention shown to be effective, cost effective, and feasible
- Modelling of the cost effectiveness indicates it is highly cost effective even in low transmission areas

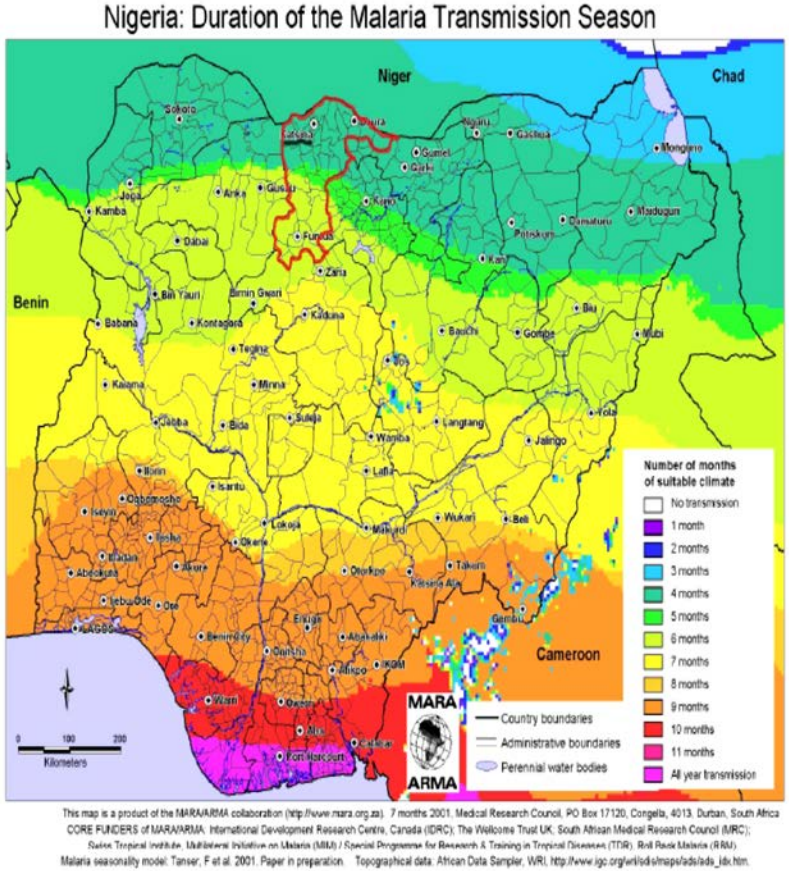
*Ross A et al: PLOS ONE (2011)*

# Malaria Consortium SMC project in Nigeria

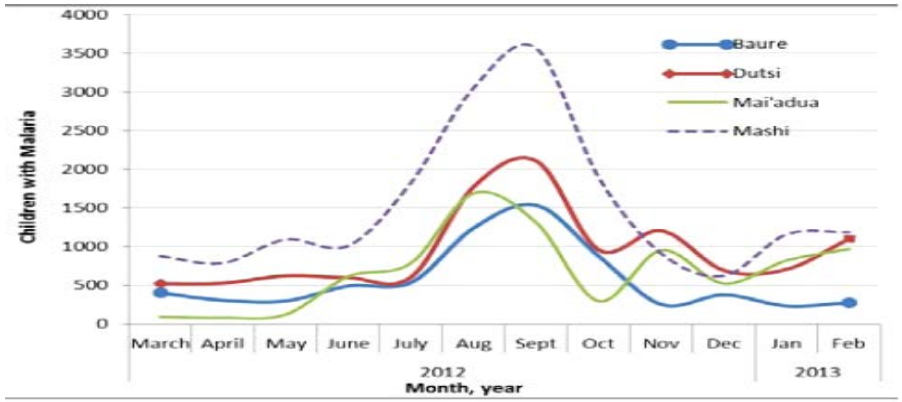
**An implementation trial to explore the feasibility, effectiveness, acceptability and costs of a community-based delivery system for SMC in Katsina state, Northern Nigeria**

Project supported by Bill & Melinda Gates Foundation and the Department for International Development/UKaid

# Why Katsina State




- Katsina State is within the Sahel Region; rainy season and peak malaria incidence from July to October
- 2012 estimated population of 6,916,641
  - 1,383,328 under-5 years
  - 600,281 cases of malaria (2008)
  - 4,103 malaria related deaths
- Katsina overall under-5 mortality rate 180 per 1,000 live births



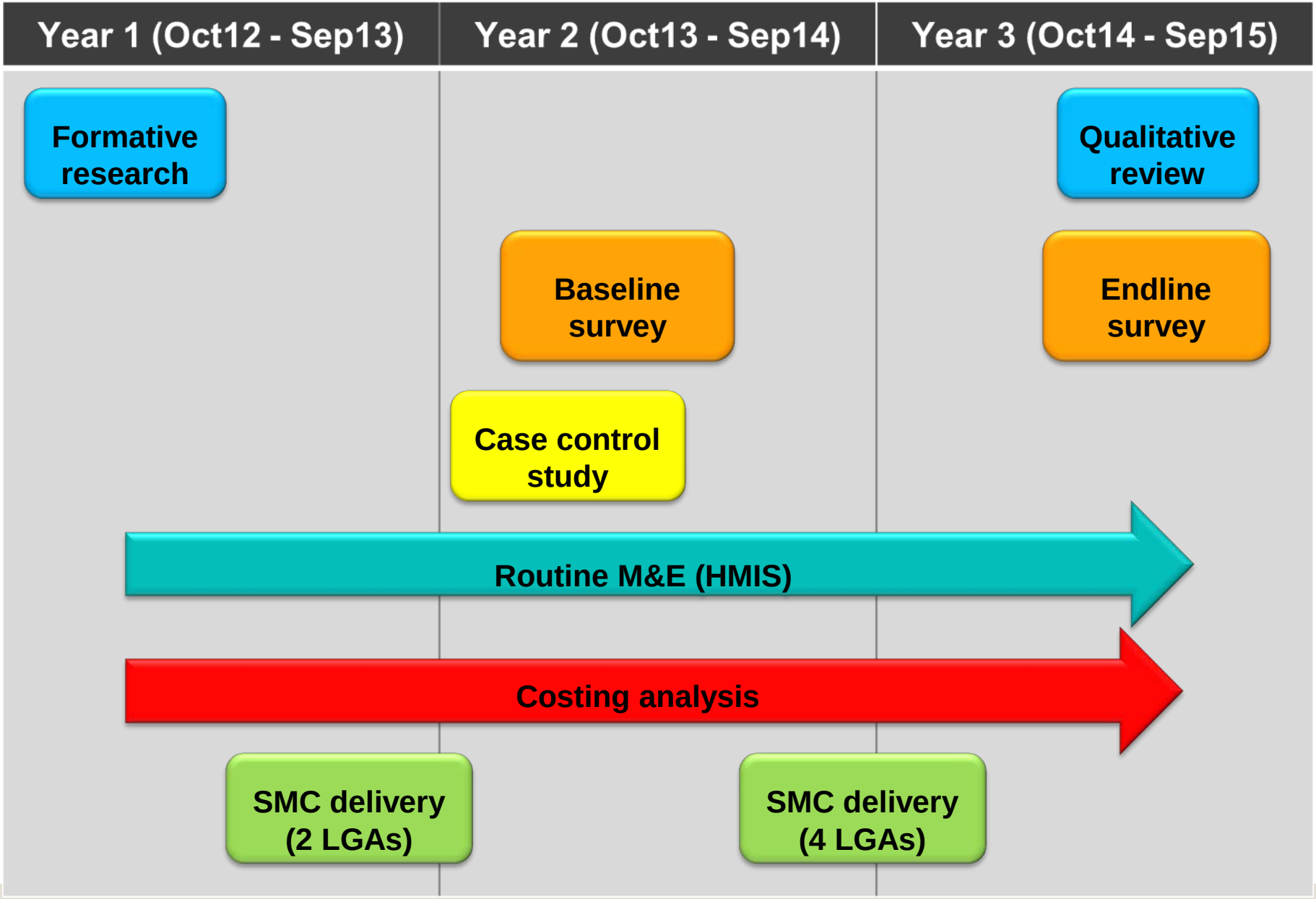
# Project objectives

**Objective 1:** To design in consultation with key local stakeholders, community-based delivery systems for SMC which will review aspects relating to feasibility, community acceptability, effectiveness and cost

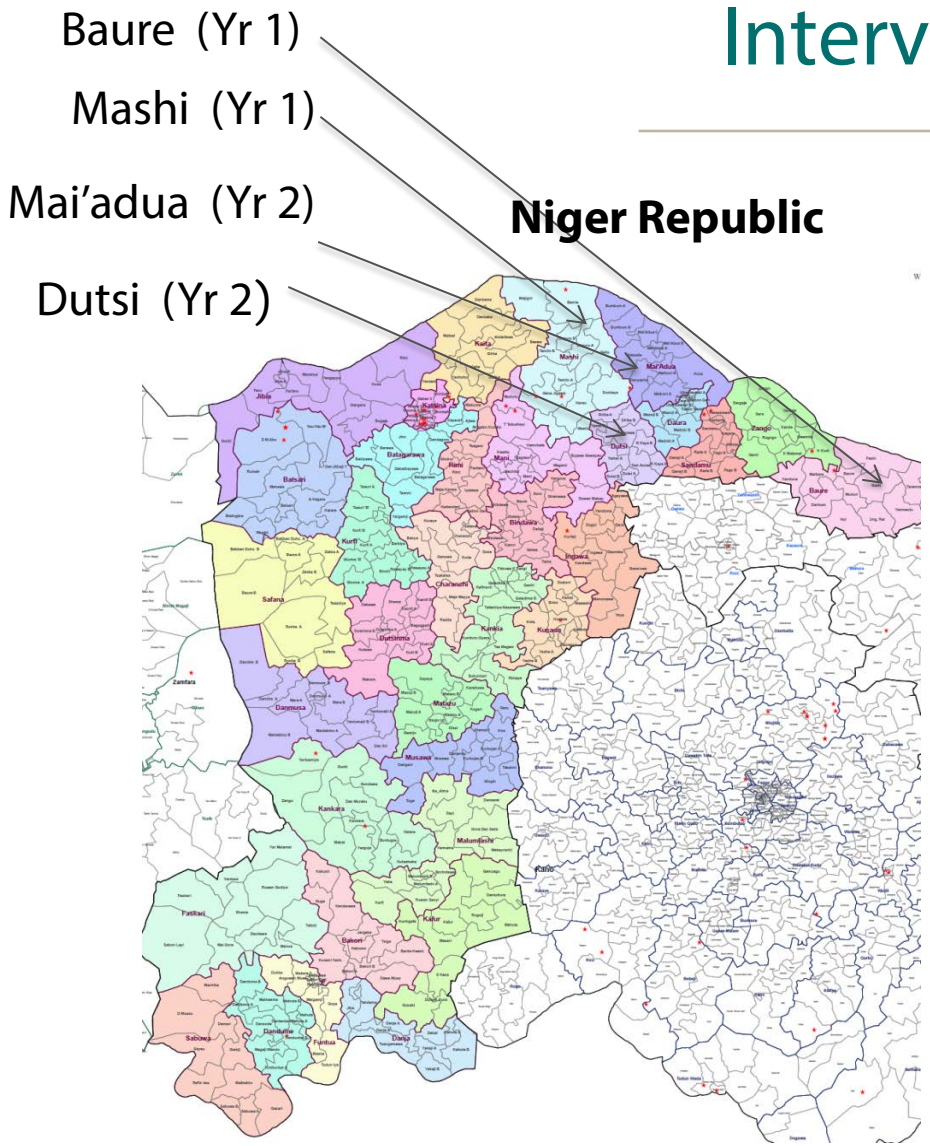
**Objective 2:** To launch and execute SMC delivery in selected areas using predetermined delivery systems and collect data on process indicators including cost

**Objective 3:** To disseminate findings and share experiences with stakeholders to inform scale up and national plans for SMC

**Objective 4:** To evaluate community acceptability, costs and effectiveness of the delivery system for SMC


Year 1 (Oct12 - Sep13)
Year 2 (Oct13 - Sep14)
Year 3 (Oct14 - Sep15)
Formative research
Qualitative review
Baseline survey
Endline survey
Case control study
Routine M&E (HMIS)
Costing analysis
SMC delivery (2 LGAs)
SMC delivery (4 LGAs)

# Intervention area 2013




- In consultation with the State MOH and SMCP, four LGAs were chosen
- Two for implementation of SMC and two for control in 2013
- Full implementation in four LGAs in 2014

# Process of implementation 1

- Choice of location: LGAs jointly chosen with MoH at Central and State levels during joint planning meetings
- Widespread consultative process within State to obtain consensus among health authorities, (State and LGA) political, traditional, religious and community leaders including nomad organisations
- Estimating the population to be covered
- Mapping settlements including remote and mobile populations and estimation of coverage population
- Ordering of drugs (regulatory requirements, and importation)
- Ensuring the availability of AL, an ACT no containing AQ, and RDTs to test for malaria in all receiving health facilities

# Community Mobilisation Activities


A tabbatar da anyi Rijista da jagora
Maganin kare yara daga zazzabin cizon sauro a lokacin damina
A karbi taimako sau hudu, na maganin zazzabin cizon sauro na yara a lokacin damina
Kada aba yara marasa lafiya
malaria consortium


Household to household delivery


Maganin Kare Yara Daga Zazzabin Cizon Sauro A Lokacin Damina.
Don Yara Masu Shekara Kaya Zuwa Biyar Da Haihuwa
Kada Aba Yara Marasa Lafiya
12 to 59 month blister pack in Arabic

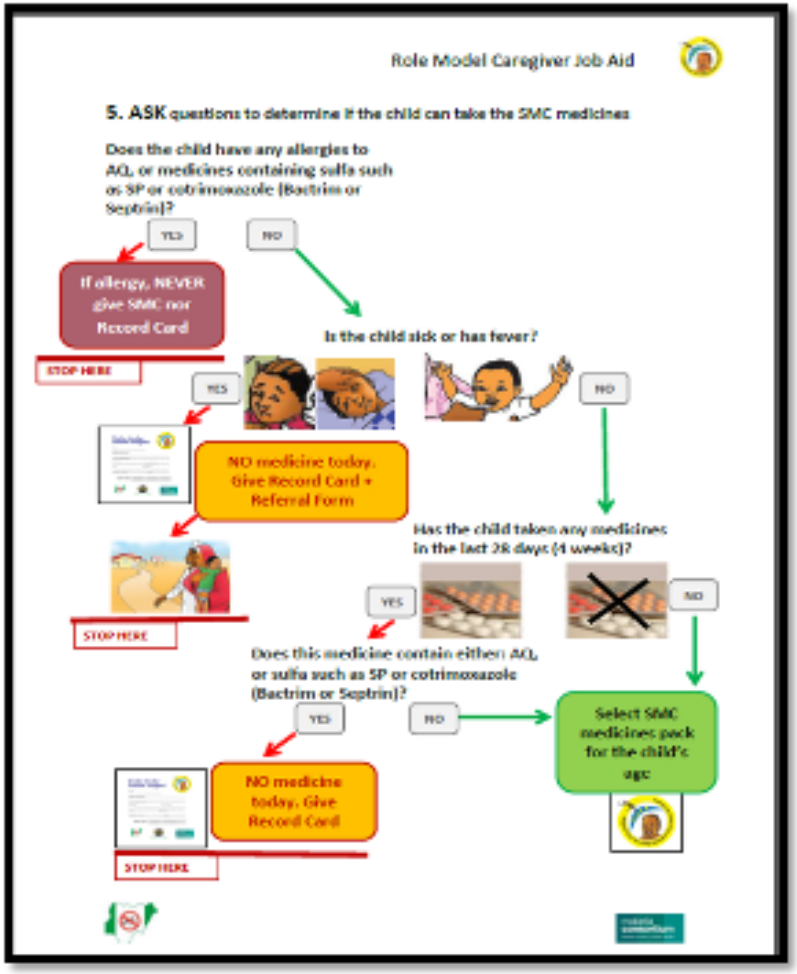

Fixed post delivery

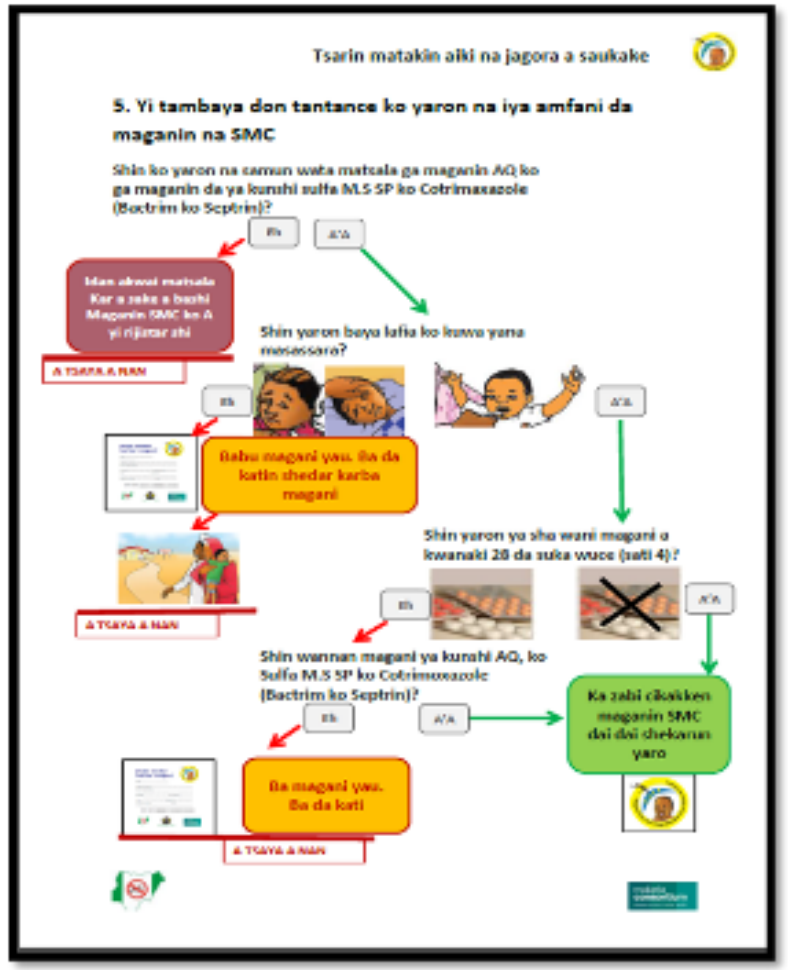
# Process of implementation 2

- Logistics planning including supply chain management
- Development of training plan and tools in collaboration with state health personnel based on formative research; e.g., training materials, fixed-dose packaging and BCC materials
- Selection and training of 2,500 community caregivers (CCGs) and supervisors to deliver the intervention and complete the necessary forms
- Training of health workers on use of pharmacovigilance forms and management of breakthrough cases
- Selection of sentinel sites and training for case control study

# Multiple training materials for various participating groups

# Community Caregiver job aid




**Page 2 of the CCG Job Aid in English and Housa**


Katin shedar karbar magani
Kwanan wata:
Maigida/Uwargida:
Suman yaro/yarinya:
Mace/Namiji:
Shekara:
Karamar hukuma:
Jaha:
Yanki:
Gunduma:
Lambar rijista
malaria consortium
Federal Ministry of Health
RMC Medicine Accountability Form
State:
LGA:
Settlement:
Ward:
Health Facility:
Cycle: ☐1 ☐2 ☐3 ☐4
Receipt:
Number of SMC medicine packets received
Date of receipt dd/mm/yy
A1
A2
3 to 12 months YELLOW packet
12 to 59 months BLUE packet
RMC receiving packets:
RMC signature:
HF staff supplying packets:
HF mobile:
HF staff signature:
End of Cycle RMC Accountability:
Total number of SMC medicine packets received
A = (A1 + A2)
SMC Register for Household-to-Household
Name of RMC responsible:
Name of Supervisor responsible:
LGA:
Ward:
Community Name:
Distribution site Number:
Household 001
Household 002
SMC 1
SMC 2
SMC 3
SMC 4
Registration Number
Child's Name
Age
Sex
Date Given
Reason NOT Given
SE
Refer
SMC/VT/0001
SMC/VT/0002
SMC/VT/0003
D = taken AQ, SP or Sulfa
DNA=did not attend
SMC Referral Form
Name of child:
Household:
Gender: M F
Age:
Ward:
Community:
Date of referral:
LGA:
State:
Name of referral health facility:
Reason for referral:
☐ Fever
☐ Child is sick
☐ Other:
Name of medicines child has taken in the past 28 days:
Name of RMC:
Signature:
Action taken at the health facility:
Name of in-charge:
Signature:
GSM No
Date:
Give the 3rd copy of this form to child's caregiver to give to RM
Ya kamata a Karbi magani sau hudu lokacin damina don kare yara daga cwon zazzabin cizon sauro.
Shekara
Kwanan watan a
Ranar Farkon karba
Ranar Karbe Na Biyu
Ranar Karbe Na Uku
SMC Register for Fixed-Point Delivery
Name of RMC responsible:
Name of Supervisor responsible:
LGA:
Ward:
Communities Covered:
Distribution site Number:
SMC/KT/0001
SMC/KT/0002
SMC/KT/0003
SMC/KT/0004
SMC/KT/0005
SMC/KT/0006
SMC/KT/0007
Code for reason SMC was not given:
A = allergy
S = fever or sick child
D = taken AQ, SP or Sulfa
DNA=did not attend


Community Care Givers (CCGs) completing training

Health facility staff trained in use of RDTs and treatment of malaria cases

# Monitoring and evaluation

- **Coverage:** Registration
- **Efficacy:** Case Control Study
- **Effectiveness:** Post distribution survey to explore issues such as adherence and confirmation of coverage
- **Resistance:** Filter papers collected for PCR for resistance markers
- **Pharmacovigilance:** register details minor side effects. Data collection tools for severe adverse events in all health facilities and training of staff.
- **Acceptability:** community dialogues post distribution

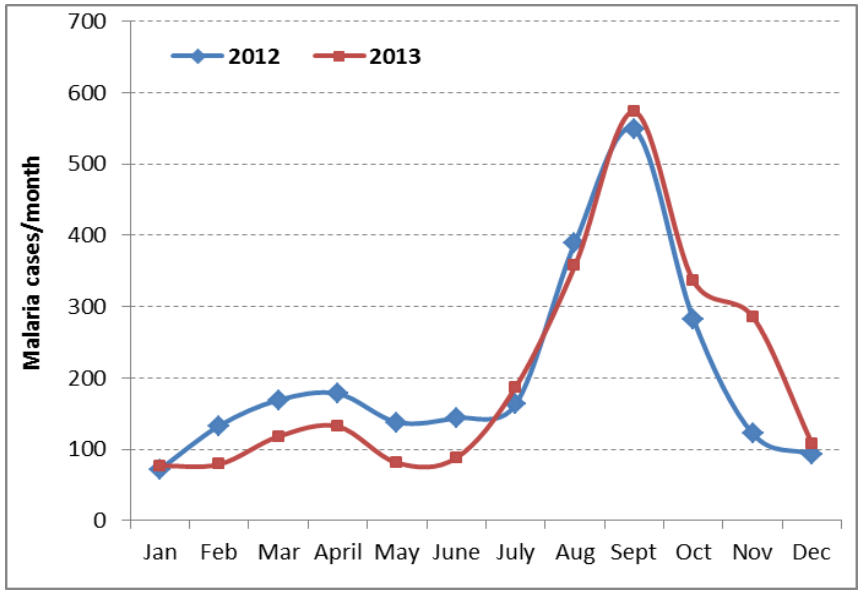
# Results

| Round | Target | Number receiving SMC | Coverage | Referred (%) | Vomiting (%) |
|---|---|---|---|---|---|
| 1st August | 141,842 | 131,227 | 94% | 8,872 (7) | 913 (0.7) |
| 2nd **September** | 141,842 | 177,467 | 127% | 6,001(3.38) | 1,644(0.9) |
| 3rd October | 141,842 | 176,659 | 126% | 3,210(1.8) | 1,052(0.5) |

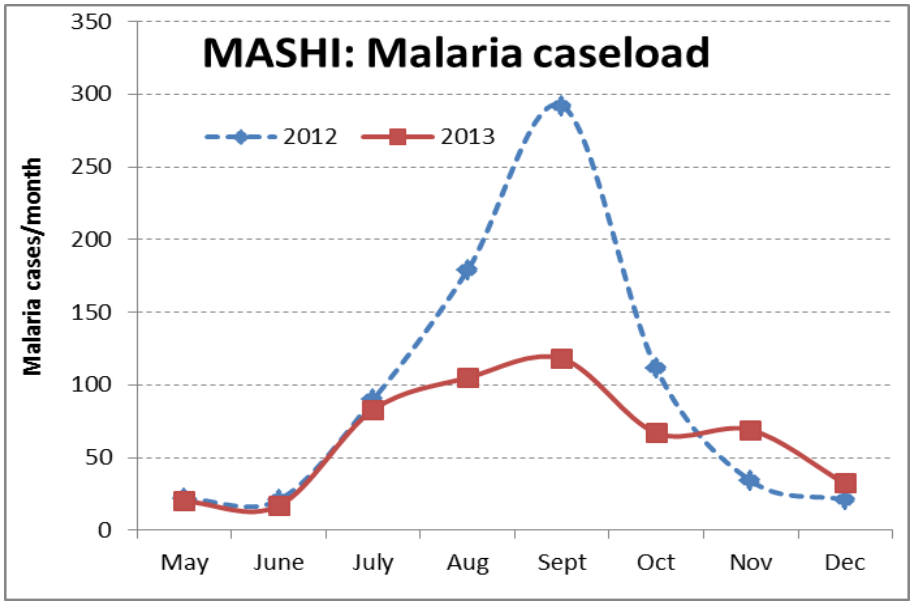
In wards near the border there were consistently higher numbers of children than expected leading to a suspicion of cross border movements

# Analysis of routine sentinel site facility data

## Non-intervention LGA: Sandamu




## Intervention LGA: Mashi




The reduction in expected malaria cases seen in health facilities was around 60% during the peak transmission season in September

A greater reduction might have been demonstrated if drug distribution had been initiated in late July rather than late August

# Scale up plan in Nigeria

- National Malaria Elimination Programme (NMEP): Inclusion of SMC strategy in policy revision and in the new National Strategic Plan
- NMEP to write to drug regulatory agency (NAFDAC) on safety profile of SP-AQ, inclusive of procedures for pharmacovigilance
- Technical expert group set up by the NMEP within the case management sub committee
- Resource mobilisation drive: resources from DFID through the SuNMaP project to extend implementation to Jigawa state on the back of lessons identified

# Scale up – plans and possibilities

**Sahel Region contains 24.2 million children under five years. (Another 10 million in Southern Africa could also be targeted)**

- In Nigeria in 2014 (9.2 million children) Malaria Consortium will target 500,000 children in Katsina and Jigawa state (CHAI will also implement in Kano state if funding can be obtained)
- Countries in the Sahel are planning to include SMC in Global Fund new funding model proposals with support from WARN and CARN (RBM)
- Proposed UNITAID partnership: Malaria Consortium, CRS, MMV, MSH, Speak up Africa will cover 7.6 million children in 7 countries from 2015
- Internal resources within the countries could be mobilised including government and private funding

# Other issues for consideration

- Southern African countries need a different drug combination
- Children under 10 years protected (as in Senegal)?
- How far can SMC be extended before it becomes mass drug administration and what effect will SMC have on transmission if it continues to be confined to children under five ?
- How will the concentration on SMC affect the funding of other more universal interventions such as mosquito net and case management coverage?
- How long will the combination of AQ/SP last before drug resistance develops?

# The future

- Huge planning and funding gaps need to be filled  if SMC is to be implemented in a comprehensive manner which would improve both effectiveness and cost effectiveness
- Attention needs to be paid to Monitoring and Evaluation (M&E)  including maintaining high coverage, pharmavcovigilance (safety) and efficacy (resistance) to make sure optimal results are continued over the years

# Acknowledgements

Our thanks go to:

- Nigeria National Malaria Elimination Programme
- Katsina State Malaria Control Programme
- Katsina State Ministry of Health
- Bill & Melinda Gates Foundation
- Department for International Development/UKaid
- London School of Hygiene & Tropical Medicine
- Malaria Consortium National, Regional and Nigeria teams
- Political, religious and community leaders in Katsina State
- The communities

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Thank you

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