

Assessing for nutritional status among hospitalized patients aged 2 months to 5 years

By Prof Grace Irimu

Department of Paediatric & Child Health, University of Nairobi

CIN Coordinator, KEMRI –Wellcome Trust

On Behalf of CIN Team



KEMRI | Wellcome Trust



Malnutrition in Kenya (KDHS – 2014)

Stunting (height for age)	Wasting (weight for height)	Underweight (weight for age)
26%	4%	11%
	= 300,000 children	

Assessing for acute malnutrition in sick children aged below 5 years



- Assessment of acute malnutrition (from 2013)

- Mid Upper Arm Circumference
 - Weight/height (length) Z score
 - +/-Edema of kwashiorkor
- } OR



- Identification of severe acute malnutrition is a priority because:
 - Risk of death is higher
- Identification of acute malnutrition is important
 - contributes to increased morbidity,
 - impaired physical and cognitive development,
 - associated with micronutrient deficiencies .

A Journey....

1977	NCHS/WHO growth standards developed
1999	WHO defined severe malnutrition as weight/height Z score below -3SD and/or presence of oedema*
2005	Mid upper arm circumference recommended as an independent diagnostic criteria.
2006	New WHO growth standards developed. Cut-off for severe acute malnutrition increased to less than 115mm (MUAC <115mm; specificity of >99% over the age group 6-59months.)
2013	Admission & Discharge of SAM criteria based on MUAC OR weight height Z score established
2013	The MoH Basic Paediatric Protocol revised to include MUAC OR weight height Z score as independent

Rationale

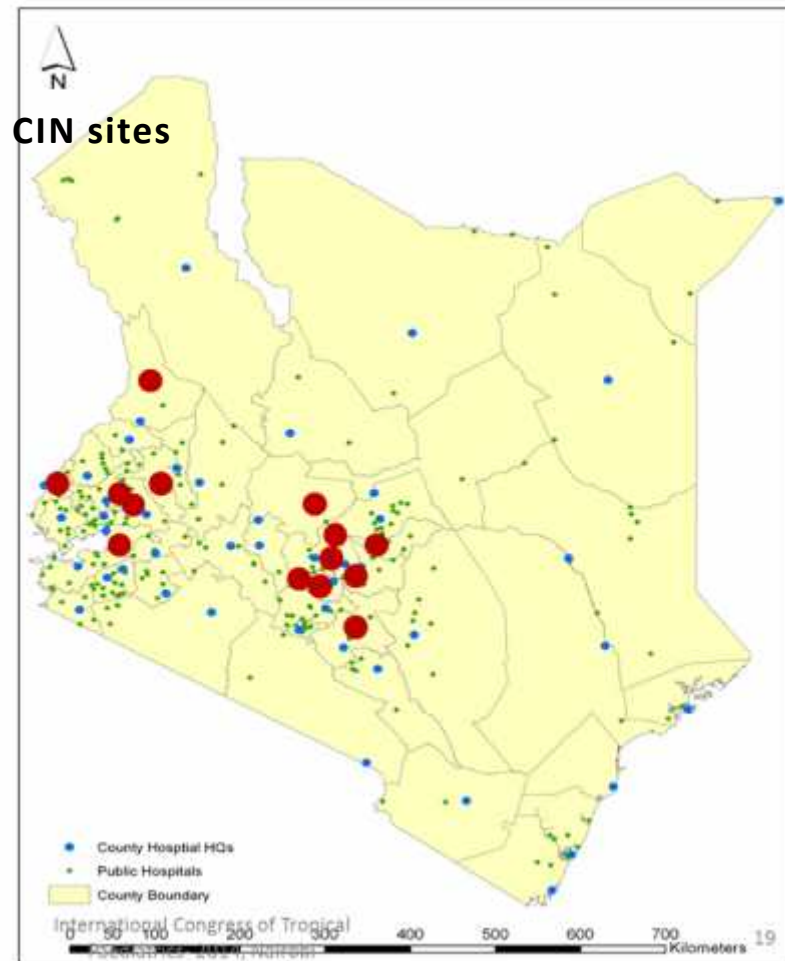
Assessment of MUAC or Weight /Height (Length) Score among children aged 2-59months admitted in the Clinical Information Network hospitals (14 hospitals across the country) was very low.

In March 2014, only 757/2505 (30%) were assessed for acute malnutrition MUAC tapes available since May 2014.

Objectives

- To describe the effect provision of MUAC tapes and audit feedback has on documentation of nutritional status (MUAC or Weight/height(length) Z score for children aged 2-59months admitted in the CIN hospitals.

Methods



- Study site – 14 hospitals

- Study period – March 2014-March 2016

Inclusion criteria :

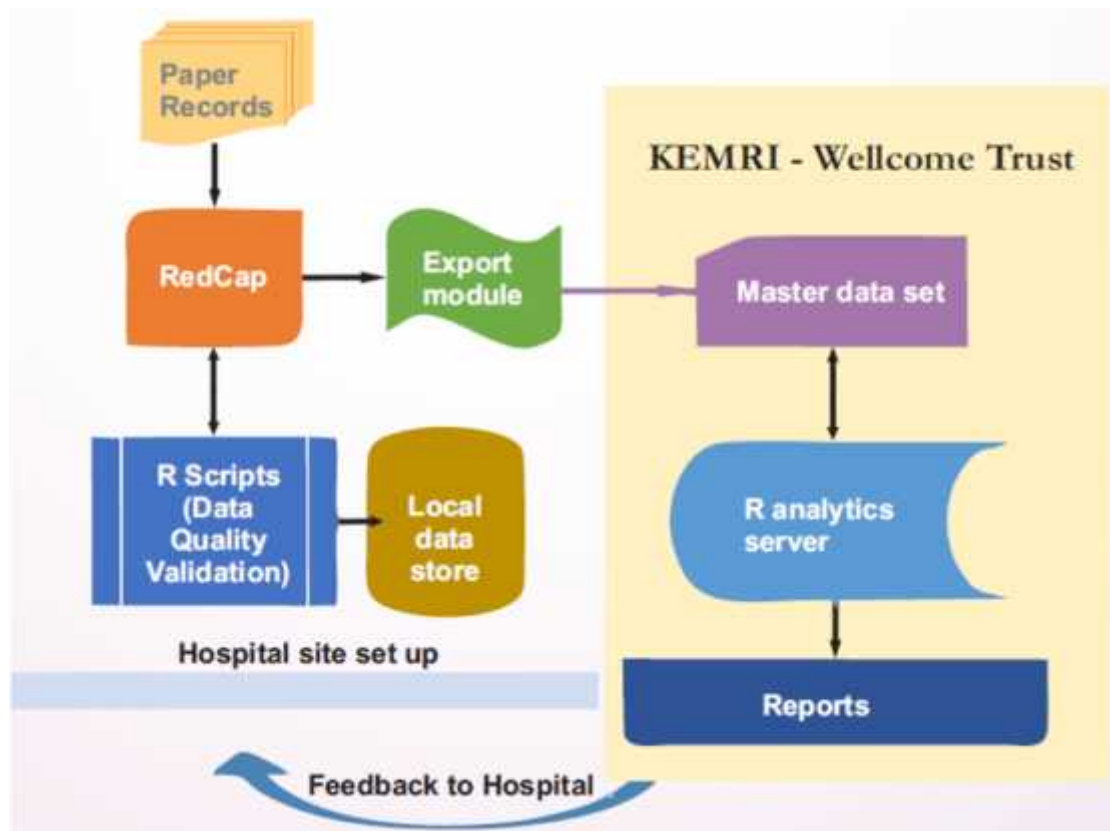
All medical records of patients aged 2 -59months admitted in the paediatric wards

Exclusion:

All surgical, burns

Data analysis: Hospital level analysis

Study procedures



Data collection – by data clerk from medical records upon patient’s discharge

Data collected on whether acute wasting was documented at any time during the admission and follow-up on the ward :

- MUAC or
- Weight /height (length) Z score

Data quality

- By data clerk
- In the master data site
- Re-entry of randomly selected records.

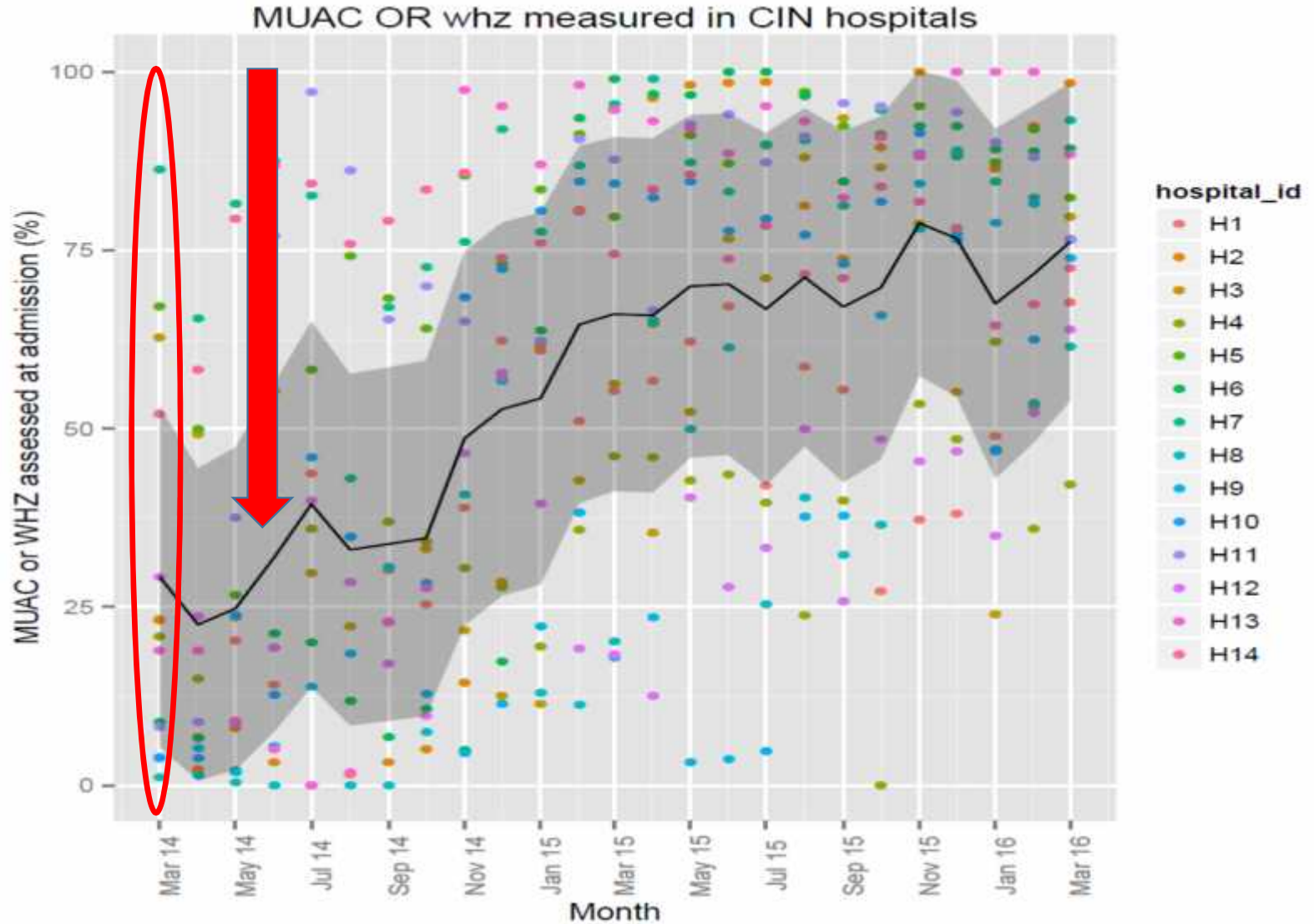
RESULTS

Number of eligible medical records

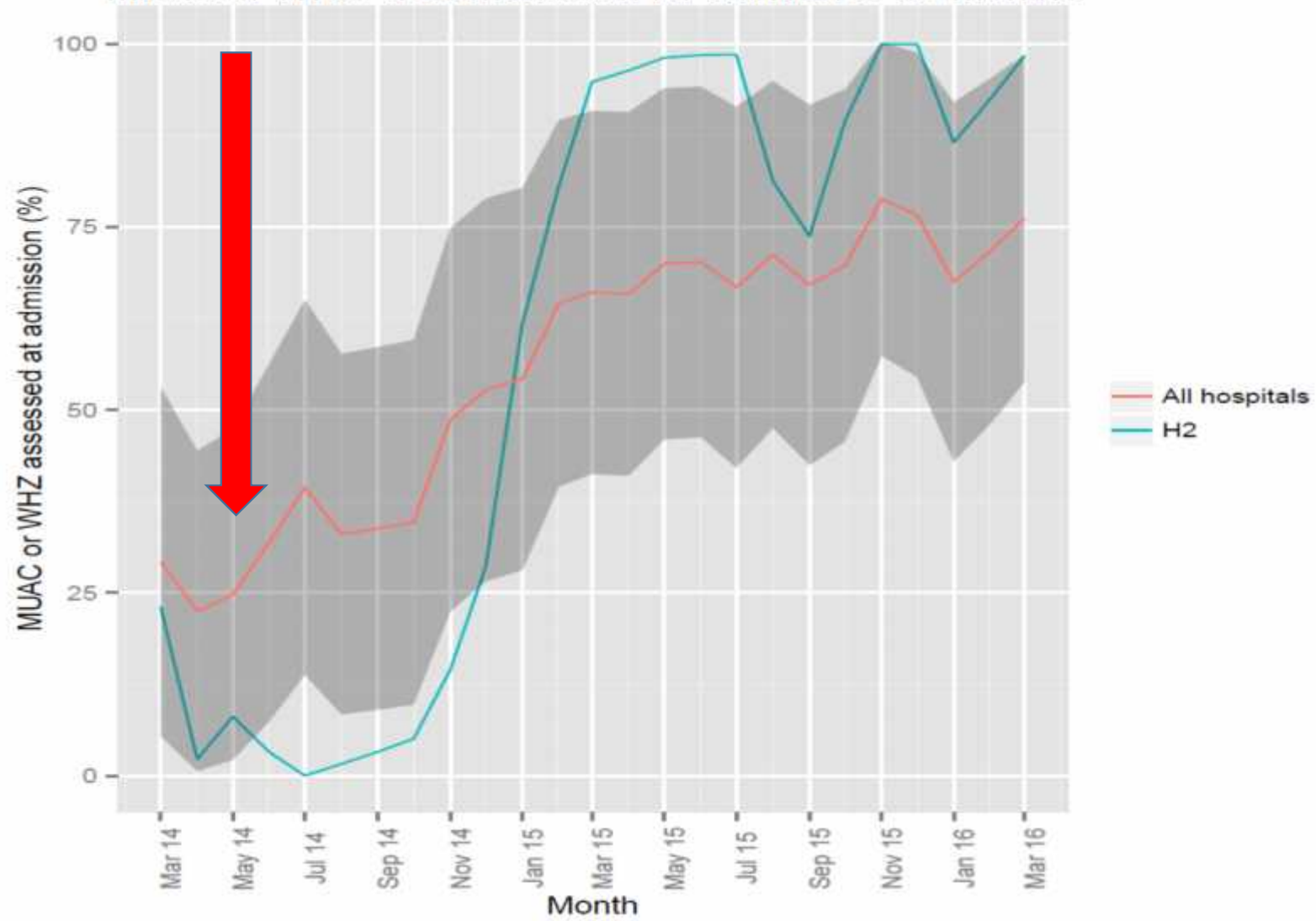
= 40,077

Duration of study

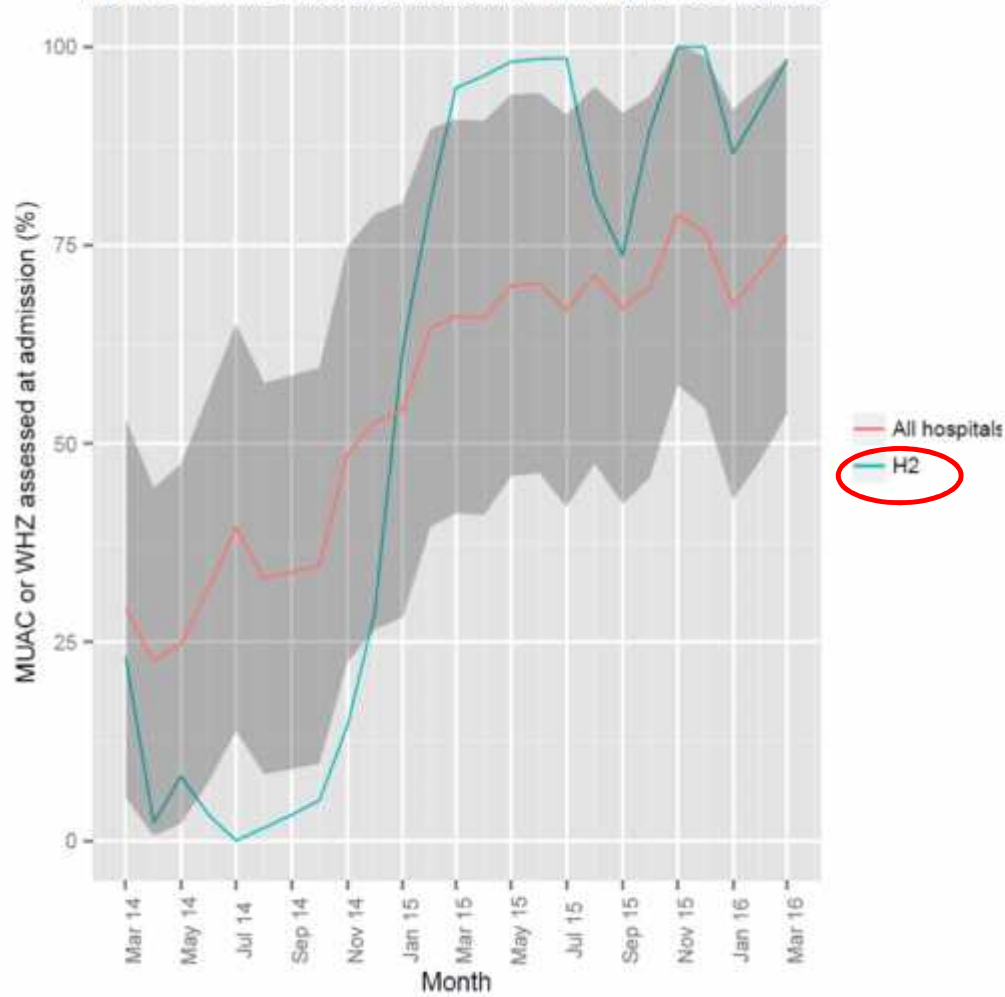
March 2014 to March 2016



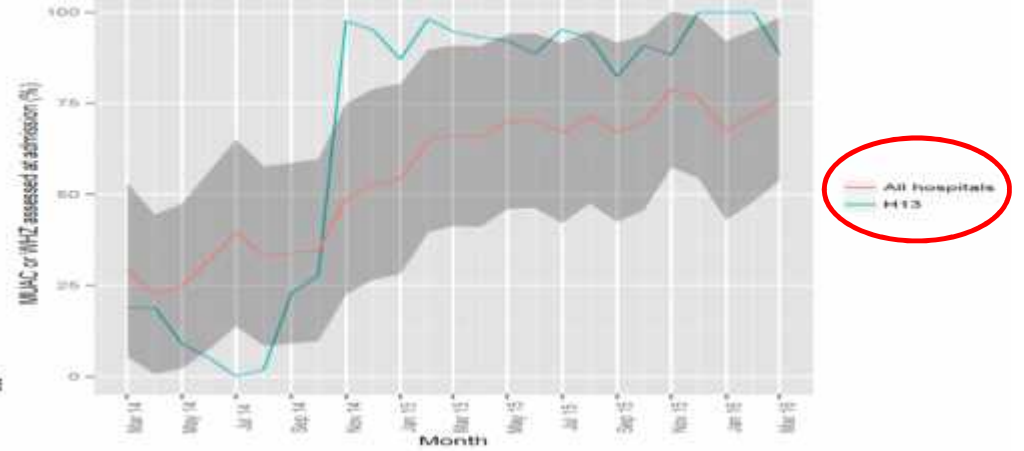
MUAC or WHZ documentation for children 2–59 months



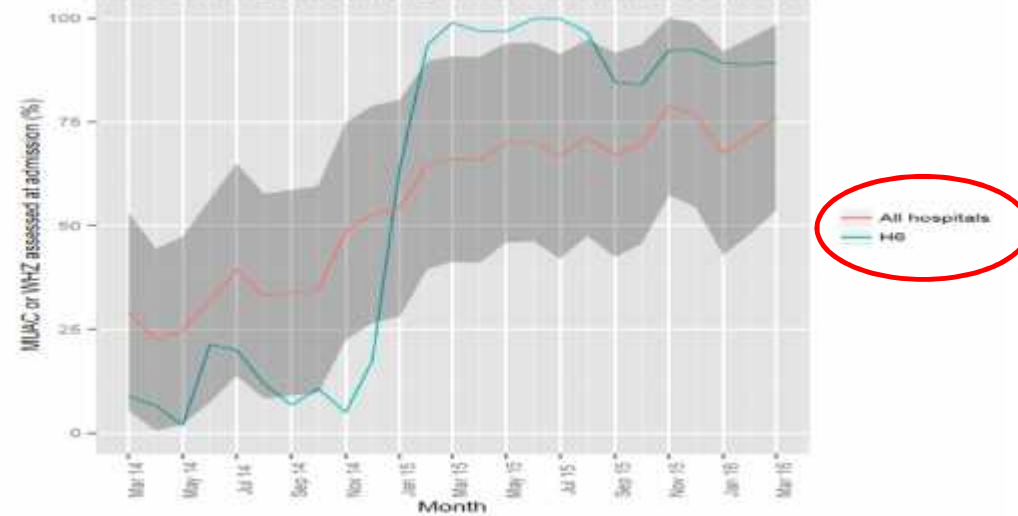
MUAC or WHZ documentation for children 2–59 months



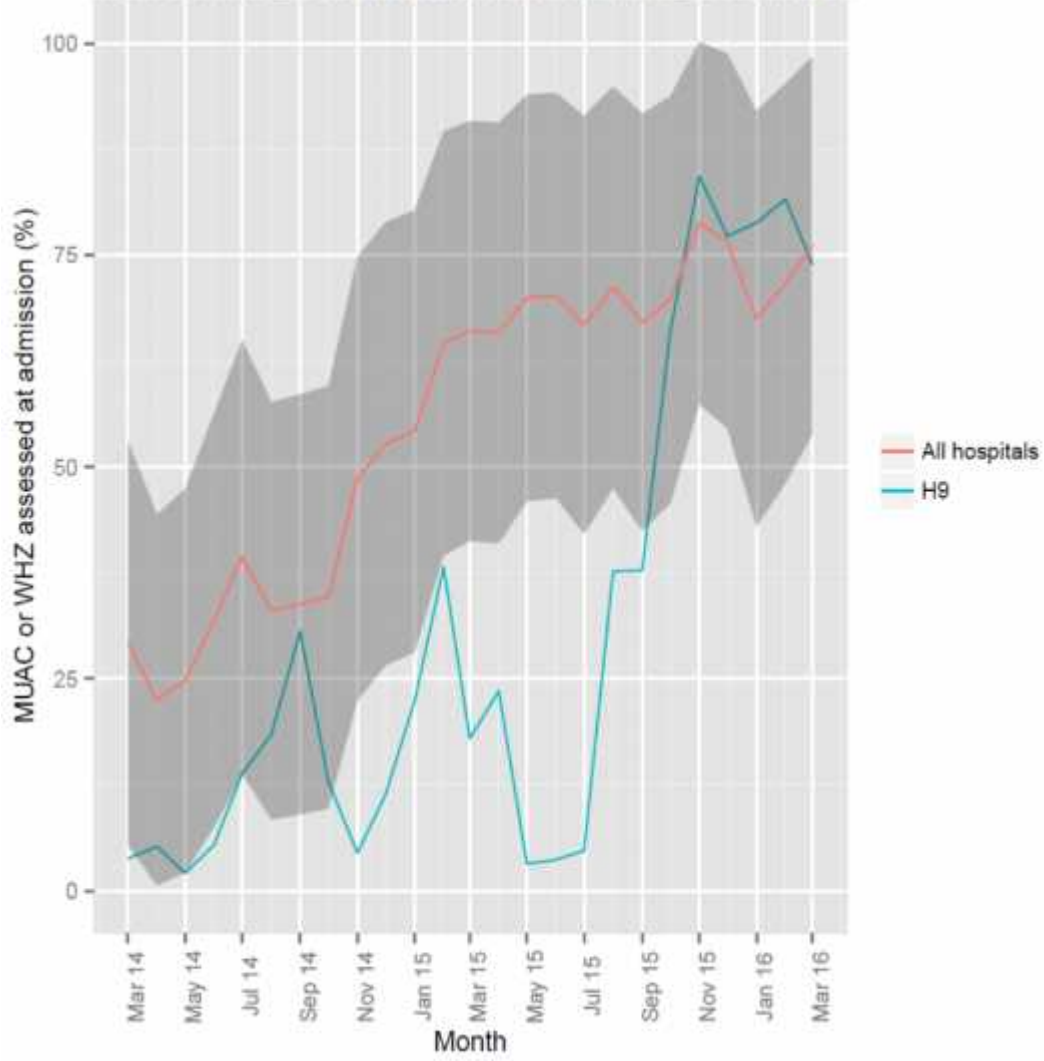
MUAC or WHZ documentation for children 2–59 months



MUAC or WHZ documentation for children 2–59 months



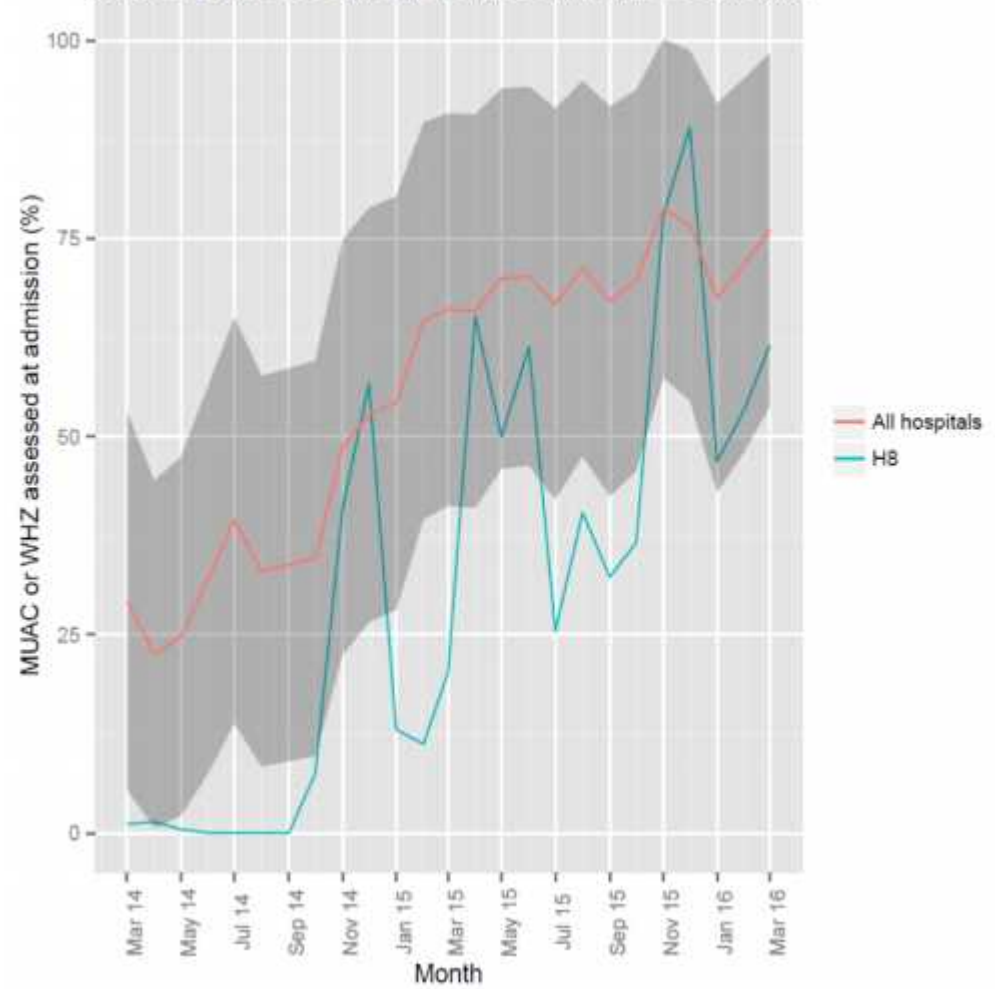
MUAC or WHZ documentation for children 2–59 months

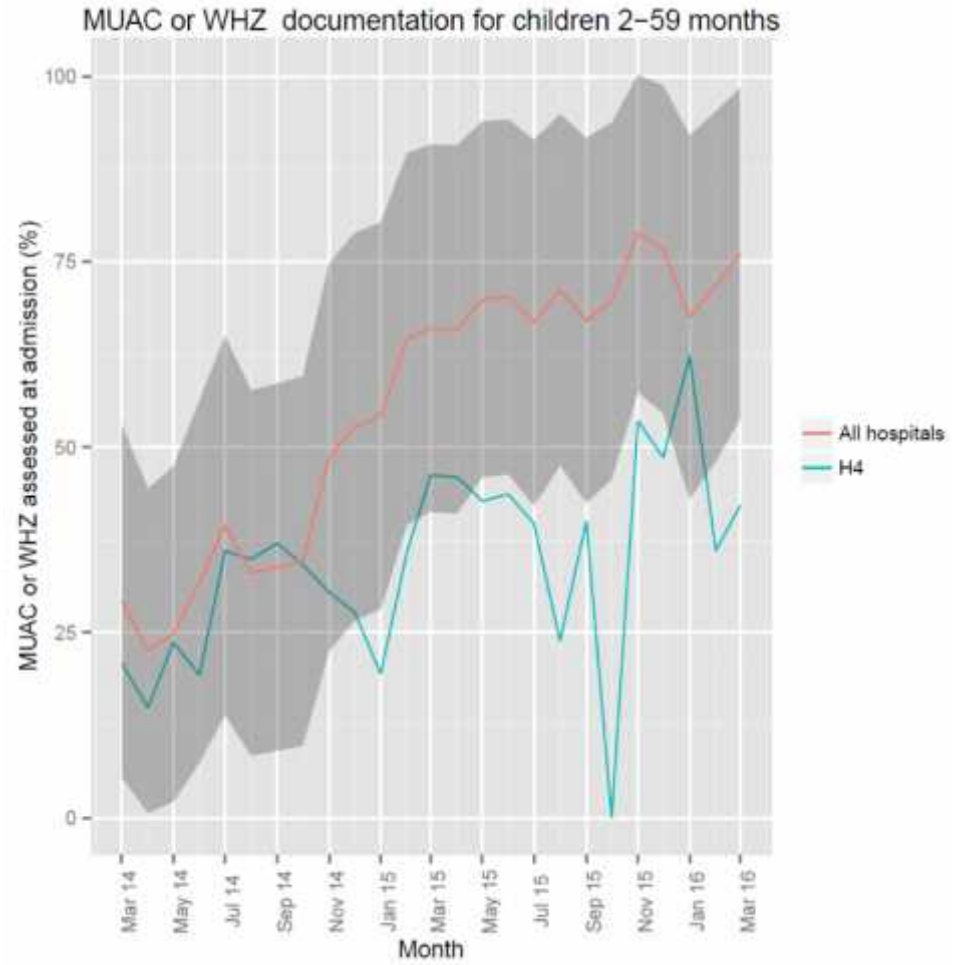
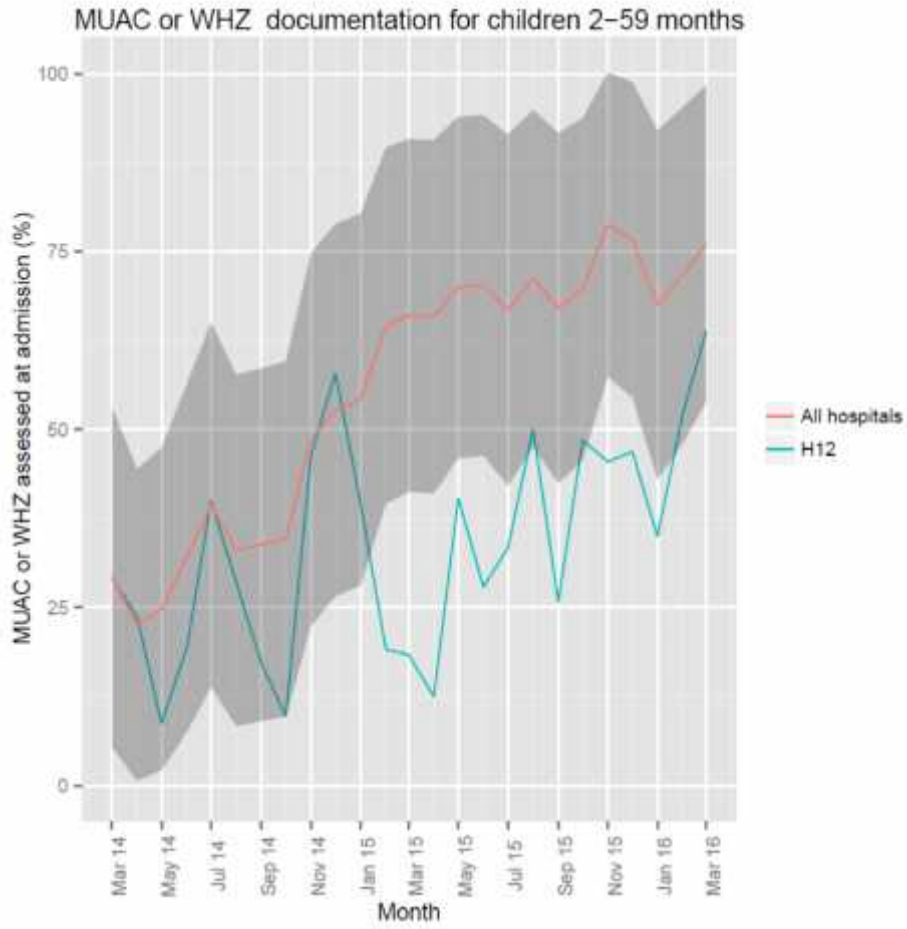


MUAC or WHZ documentation for children 2-59 months

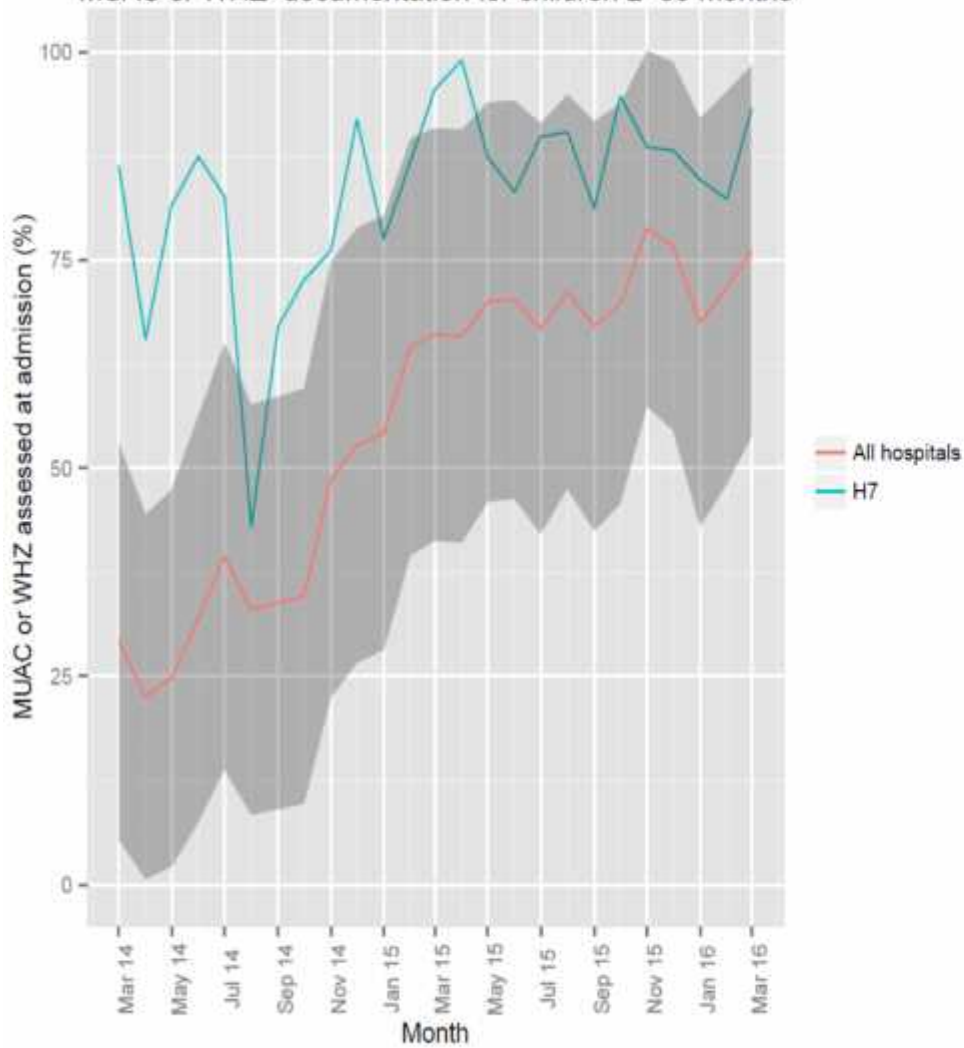


MUAC or WHZ documentation for children 2-59 months

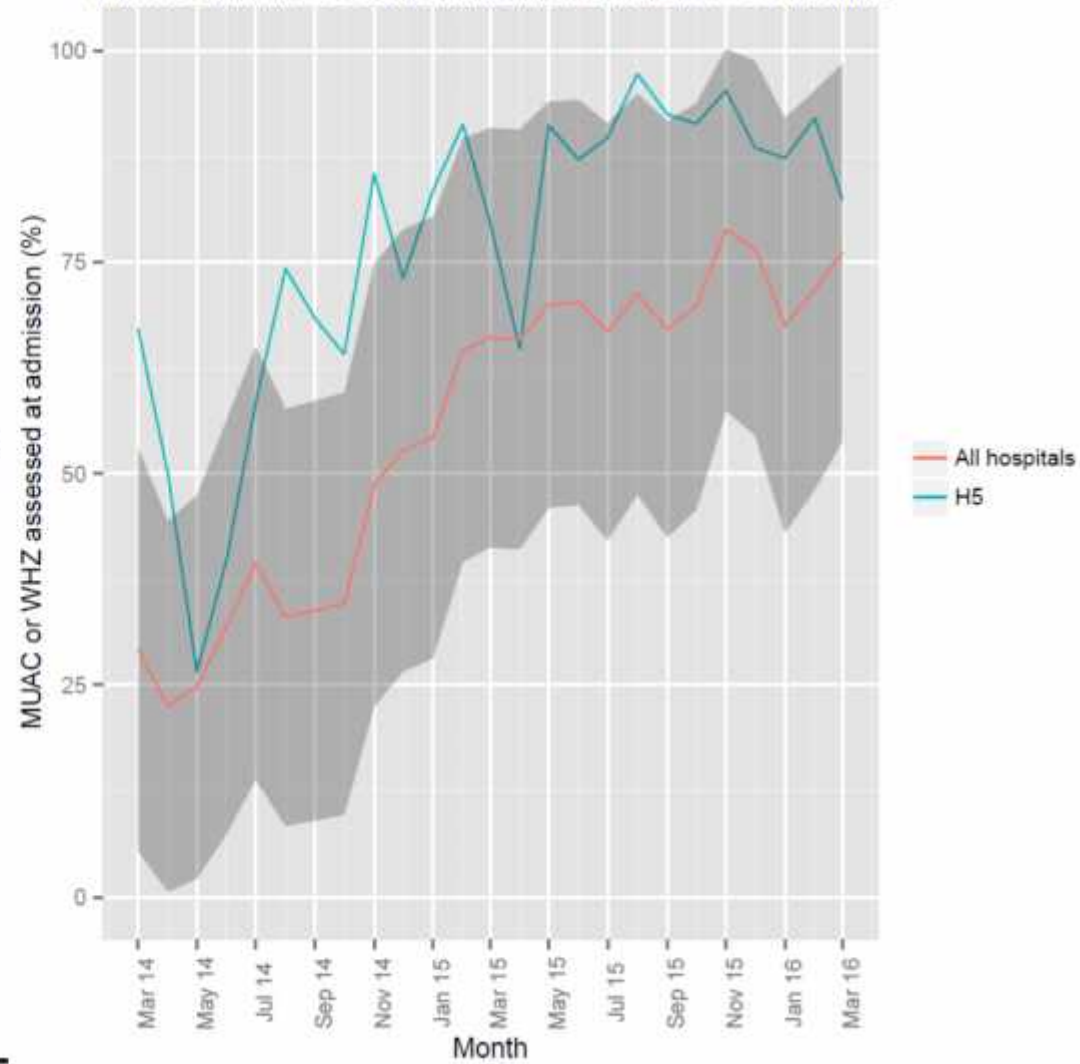




MUAC or WHZ documentation for children 2–59 months



MUAC or WHZ documentation for children 2–59 months



Summary

- Summary performance may be deceptive
- Variable performance across time and hospitals
- Variable time of adoption
- Availability of a tool and provision of feedback performance does not necessarily translate to better practice
- Need to understand context to interpret the data and plan for implementation
 - Leadership
 - New interns

Recommendations

- Need to inculcate culture of best practices in everyday clinical work.
- Need to determine at the Pre-service and in-service level
 - Core knowledge/practice - essential
 - Advanced knowledge/practice – application in case management
 - Innovative knowledge /practice –
- Creating a supportive structure

Paediatric Admission Record – Paediatric Ward

Name					IP No.			Ward		
Contact (Tel)				Relation			DOB	dd/mm/yyyy		
Admission Date	dd /mm / yyyy		Sex	M <input type="checkbox"/> / F <input type="checkbox"/>		Age	years	months	days	
Referred to hospital?	Y <input type="checkbox"/> N <input type="checkbox"/>		<i>If yes from facility (name):</i>		Re-admission to <u>this</u> hospital?	Y <input type="checkbox"/> N <input type="checkbox"/>		Discharged <1 month ago	Y <input type="checkbox"/> N <input type="checkbox"/>	
Presenting Complaints										
History & Examination										
Weight	Kg	Height / Length	cm	WHZ score		MUAC (cm)		Head Circum (cm)		

**Paediatric Discharge Diagnoses – Select ONE primary diagnosis
diagnoses (tick 2) indicate level of severity or type of disease if**

Malaria	1 <input type="checkbox"/>	2 <input type="checkbox"/>	<input type="checkbox"/> Severe	<input type="checkbox"/> Non-severe
Pneumonia	1 <input type="checkbox"/>	2 <input type="checkbox"/>	<input type="checkbox"/> Severe	<input type="checkbox"/> Non-severe
Diarrhoea	1 <input type="checkbox"/>	2 <input type="checkbox"/>	<input type="checkbox"/> Non-bloody	<input type="checkbox"/> Bloody (dysentery)
Dehydration	1 <input type="checkbox"/>	2 <input type="checkbox"/>	<input type="checkbox"/> Shock	<input type="checkbox"/> Severe <input type="checkbox"/> Some
HIV	1 <input type="checkbox"/>	2 <input type="checkbox"/>	<input type="checkbox"/> Positive <input type="checkbox"/> Negative	<input type="checkbox"/> Exposed/PMTCT+ <input type="checkbox"/> Declined test
Malnutrition	1 <input type="checkbox"/>	2 <input type="checkbox"/>	<input type="checkbox"/> Kwash <input type="checkbox"/> Moderate malnutrition	<input type="checkbox"/> Marasm <input type="checkbox"/> M. Kwash
TB	1 <input type="checkbox"/>	2 <input type="checkbox"/>	<input type="checkbox"/> PTB <input type="checkbox"/> Millitary	<input type="checkbox"/> CNS <input type="checkbox"/> other organs

Acknowledgement

Clinical Information Network Team:

CIN Hospital Teams

Samuel N'gar N'gar (**Vihiga County Hospital**), Nick Aduro (**Kakamega County Hospital**), Loice Mutai & David Kimutai (**Mbagathi County Hospital**), Caren Emadau, Cecilia Mutiso & Celia Muturi (**Mama Lucy Kibaki County Hospital**), Charles Nzioki (**Machakos County Hospital**), Francis Kanyingi & Agnes Mithamo (**Nyeri County Hospital**), Margaret Kuria (**Kisumu East County Hospital**), Sam Otido & Anne Kamunya (**Embu County Hospital**), Alice Kariuki (**Karatina County Hospital**), Peris Njiiri (**Kerugoya County Hospital**), Rachel Ingina & Melab Musabi (**Kitale County Hospital**), Barnabas Kigen (**Busia County Hospital**), Grace Akech & Lydia Thurania (**Kiambu County Hospital**).

Kenya Paediatric Association

Dr David Githanga & Prof Fred Were

Ministry of Health

Dr Rachel Nyamai

KEMRI-Wellcome Trust Research Programme);

Morris Ogero; Thomas Julius; Boniface Makone; Mercy Chepkirui; Wycliffe Nyachiro & James Wafula



KEMRI Wellcome Trust

