Integrated Community Case Management (iCCM) and the role of pneumonia diagnostic tools

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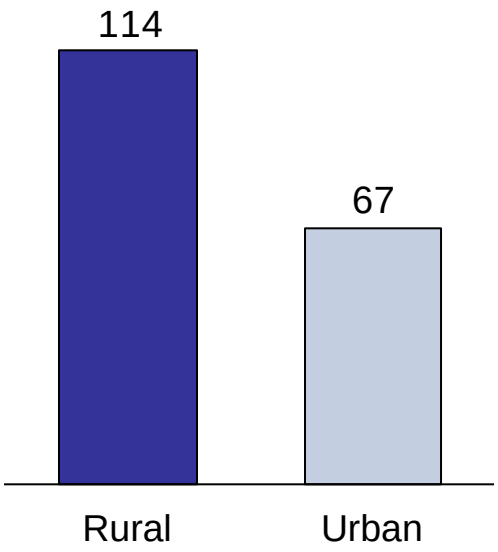
(on behalf of Mark Young)

Strong need for community-based delivery to reach the most vulnerable

Distance is a real problem

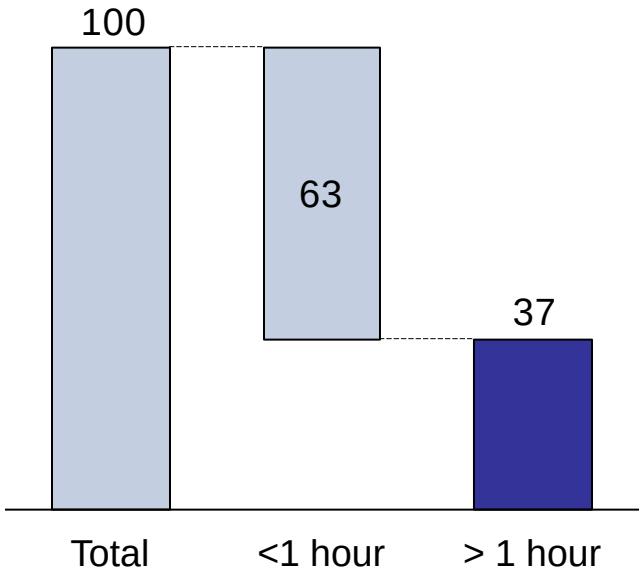
Mortality is driven by rural areas

U5 mortality rate, by residence[1]



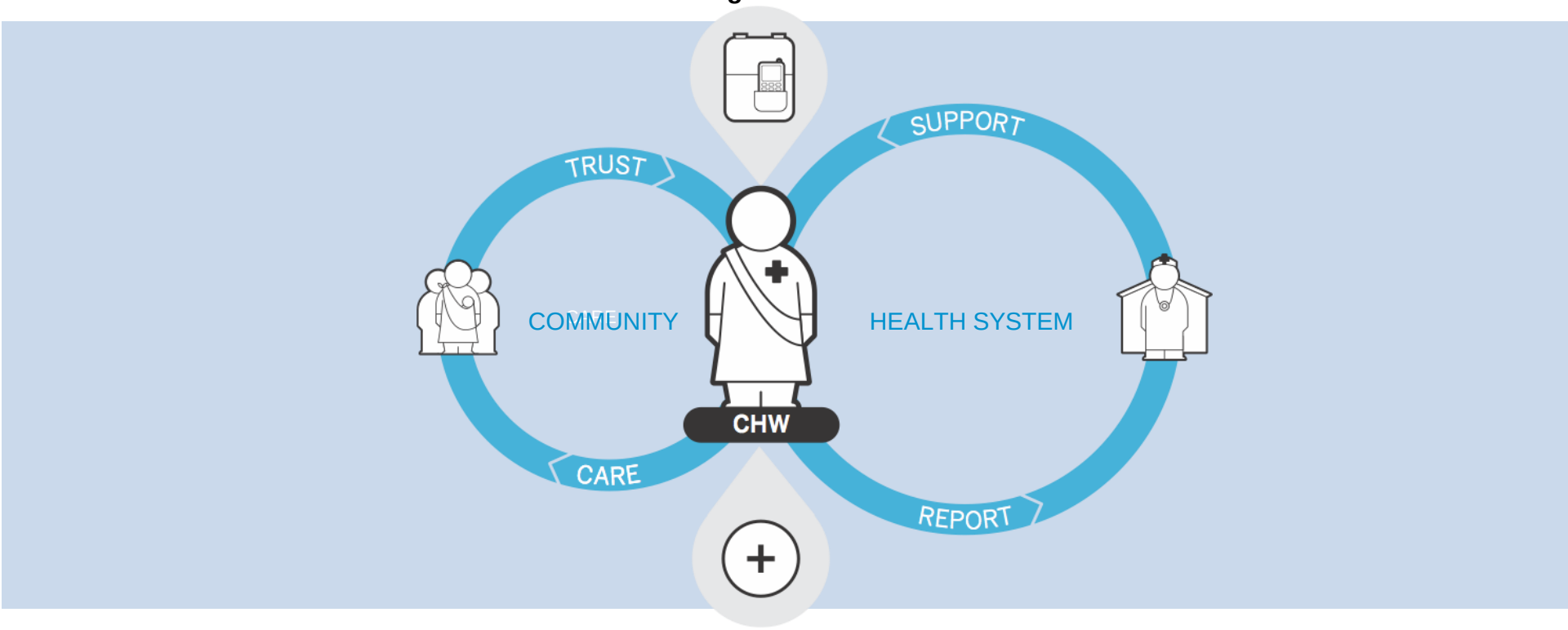
Because many are not able to access care

Distance travelled to closest health center
Kenya - % of population



- **Countries need to bring care closer to where mothers and children are (and where most deaths occur)**
- **Need to increase equity & access**
- **key strategies: campaigns or outreach or through CHW**

(1)Source: Inter-Agency Group for Child Mortality Examination (IGME) analysis utilizing DHS data from 45 countries
Definitions of rural and urban are country specific
(2)Modelling distances travelled to government health services in Kenya



Putting CHWs at the center: CHWs are crucial links connecting the communities they serve and the health system.

To be empowered and activated CHWs need to be provided and regularly resupplied with commodities, medicines, diagnostic devices, information and other job aids

To be empowered and activated CHWs need to be provided with a well-orchestrated set of activities and services that support them all along their journey, from the moment they are recruited and trained to the day-to-day service they deliver to their communities, to the incentives and growth plans that are meant to keep them motivated.

integrated Community Case Management (iCCM) What is iCCM ?

A strategy that provides programmatic support :

- to assess, classify and treat sick children (2mo. to 5yrs)
- for *all three* of the 3 main child killers: pneumonia, malaria and diarrhea
- ***in the community preferably, but not necessarily with CHWs***

Children often affected by multiple diseases:

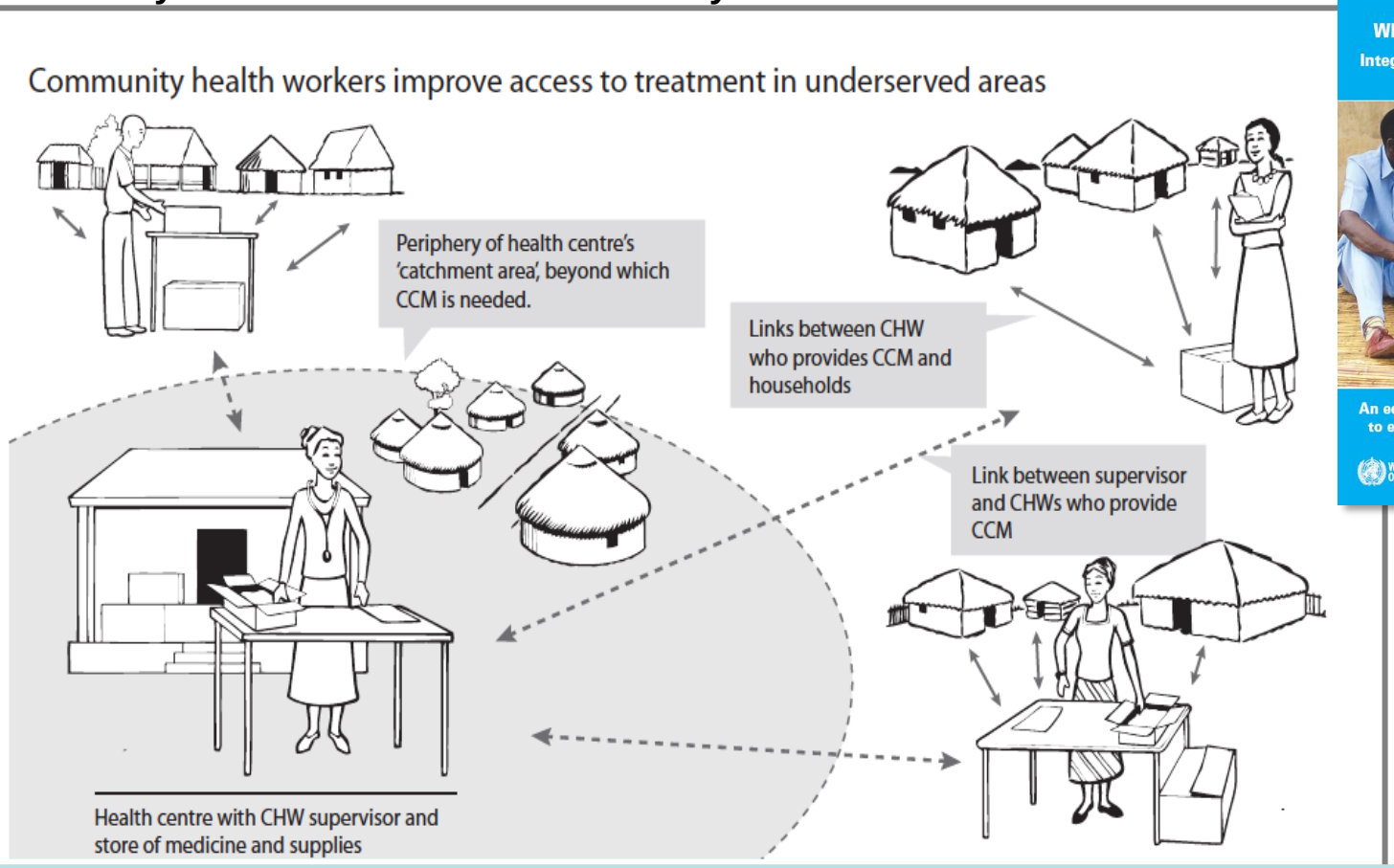
- significant *overlap in the clinical profile* of childhood pneumonia and malaria, and often simultaneous with diarrheal disease

Basic package consists of:

- RDTs and ACT
- Respiratory timers and dispersible amoxicillin
- Low osmolarity ORS and zinc

iCCM is an effective strategy for scaling up treatment of the main killers of children (pneumonia, diarrhea & malaria) at community level

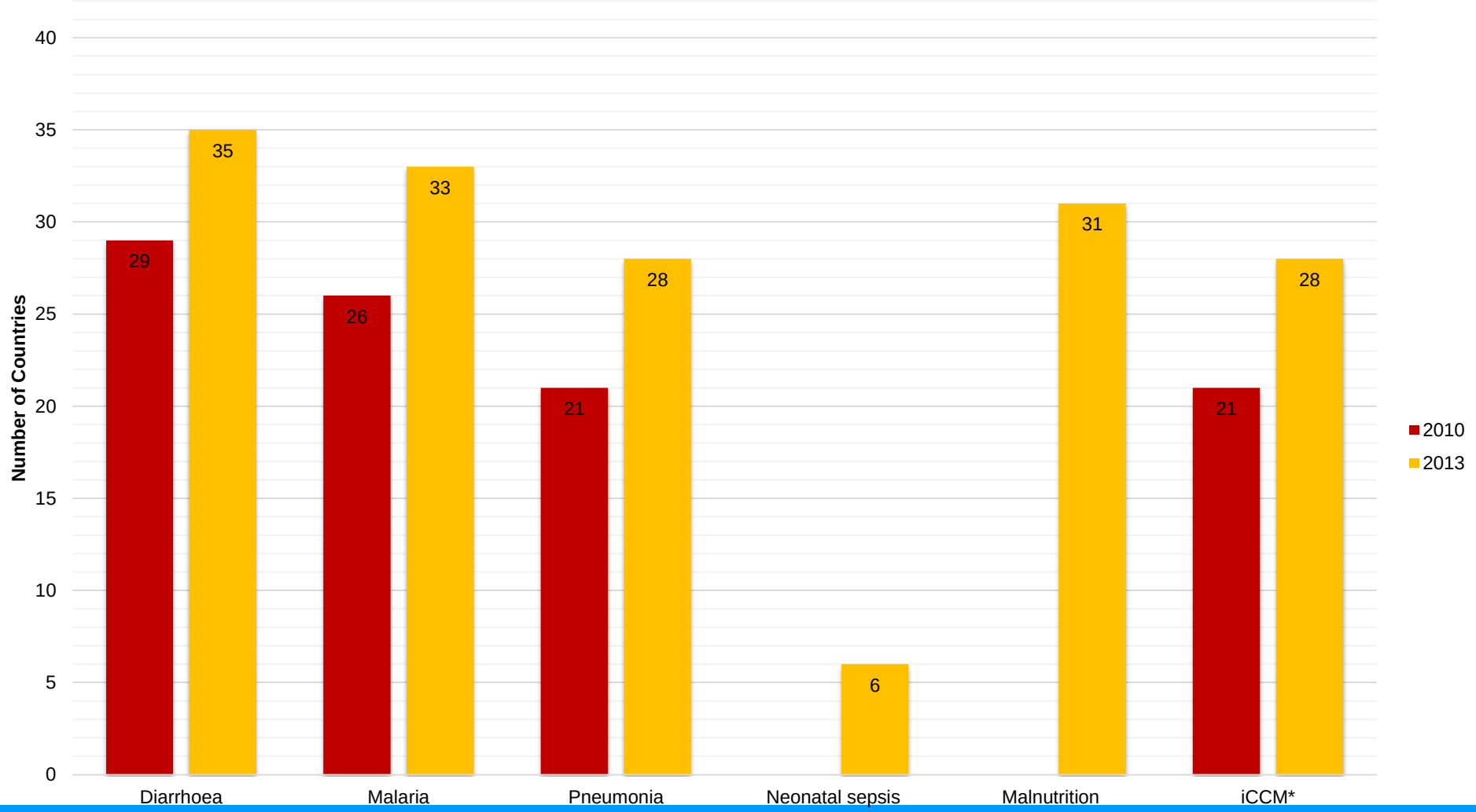
iCCM – key set of interventions delivered by CHW



- **Joint WHO/UNICEF Statement defines key program features for iCCM**
- **Strategy to provide programmatic support to CHWs to assess & treat for all 3 child killers**
- **Aiming to increase coverage for those ~40% that cannot easily access any care**

Integrated Community Case Management Evidence Review Symposium, Ghana March 2014

Implementation of Community Case Management of Diarrhoea, Malaria, Pneumonia, Neonatal Sepsis and malnutrition in Africa



unite for children

Notes: *iCCM refers to services for diagnosis and treatment for pneumonia, diarrhoea and malaria are provided together.
There was no data for neonatal sepsis and malnutrition in the 2010 survey.

unicef

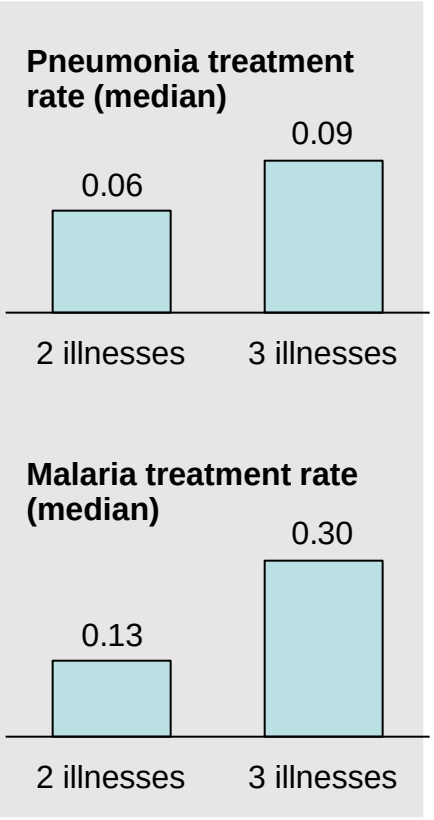
The Ghana iCCM Evidence Symposium highlighted the potential impact of iCCM when effectively designed and managed

Role of government

- Government leadership is essential
- iCCM must be a national priority, well embedded in national health sector plan, and costed with a clear budget provision

Program design

- There is **no single model** of human resource management for community based interventions, e.g. programs that pay CHWs or use volunteers can work, provided there is clear leadership and support
- **Charging fees** decreased utilization
- **High supervision rate** increased utilization
- Fewer stock outs increased utilization
- **Providing treatments for 3 illnesses actually increases utilization for each illness**
- Using RDTs decreased malaria and pneumonia treatments suggesting improved quality of treatment

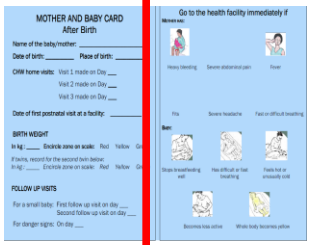


Source: ICCM Evidence Symposium, Ghana, UNICEF

WHO-UNICEF training package for community health workers

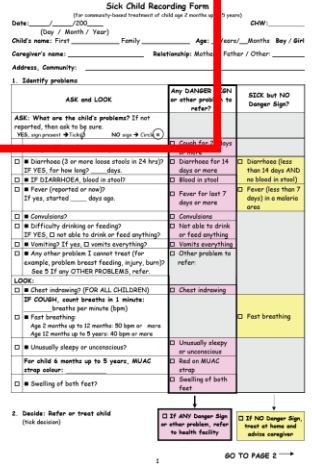
Caring for the newborn at home

- Promotion of ANC and skilled care at birth
- Care in first week of life
- Recognition and referral of newborns with danger signs
- Special care for low-birth-weight babies



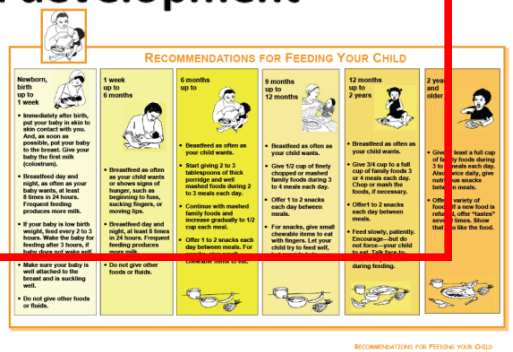
Caring for the sick child in the community

- Referral of children with danger signs and severe acute malnutrition
- Treatment in the community
  - Diarrhoea
  - Fever (malaria)
  - Pneumonia



Caring for the child's healthy growth and development

- Care-giving skills and support for child development
- Infant and young child feeding
- Prevention of illness
- Family response to child's illness



Caring for the sick child in the community

- **Identify signs of illness**
  - Diarrhoea
  - Fever
  - Chest indrawing
  - Fast breathing
  - Severe malnutrition

- **Refer child with danger signs (or other problems) and begin treatment**
- **Treat diarrhoea** at home (ORT and zinc)
- **Treat fever** (antimalarial) and **fast breathing** (antibiotic) at home

Duration of Training: 6 days, includes 2 inpatient and 5 outpatient clinical practice sessions

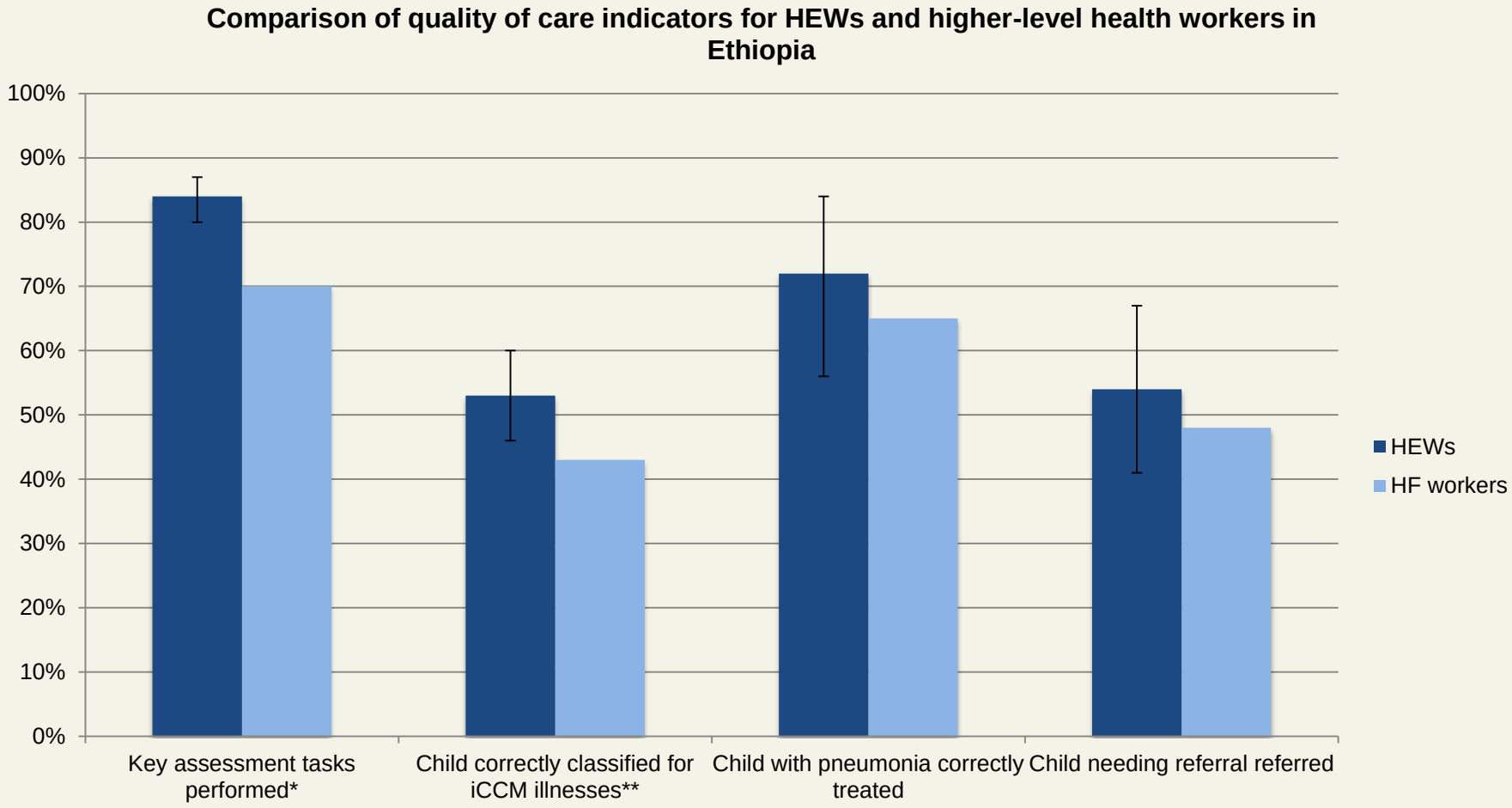
Guidelines for assessment and management of suspected pneumonia at community level by CHWs

	Classification	Treatment	Danger Signs for Immediate Referral
Pneumonia	History of cough or difficulty breathing Observation of fast breathing and counting of breaths with Respiratory Rate Timers: Age 2 months - 12 months RR of **50 or more (per min)** Age 12 months - 5 years RR or **40 or more (per min)**	Appropriate first-line oral antibiotic: **Amoxicillin dispersible tablet—250 mg**, give twice daily for 5 days. Age 2 months - 12 months **1 tablet** (total 10 tabs) Age 12 months - 5 years **2 tablets** (total 20 tabs)	Cough for 21 days or more Chest indrawing Not able to drink or feed anything Vomits everything Unusually sleepy or unconscious

Diagnosis and management by CHWs in Homa Bay, Kenya – KEMRI (2014)

Indicator	value
All pneumonia cases seen by CHW (Fast Breathing)	15690
All pneumonia cases seen by CHW (Chest In-drawing)	1316
Concordance rate Between CHW and Clinicians	**0.81**
Fast breathing Concordance Rate	**86.7%**
Chest in drawing Concordance Rate	**74.5%**
Total number of treatment failures (pneumonia)	28
Total number of diarrhoea cases	22644
Total number of children referred for immunization	3388
% CHW who can use antibiotics rationally	**82%**
Total number of treatment failures (pneumonia)	28

Quality of Care – Ethiopia HEWs



*HEWs: 9.2 out of 11 key assessment tasks measured. HF workers: 7 out of 10 key assessment tasks measured

UNICEF Timer

- In use for many years by front-line health workers for counting of respiratory rate
- One minute timer, with ‘beep’ at 30 sec.
- But associated with a number of challenges

Challenges related to the timer	Challenges related to diagnosis
The ticking sound generated by the timer confuses CHWs	CHWs have difficulty counting irregular breathing
CHWs often count the ticks and not the breaths	Restless children often distract CHWs
The 30 second alarm scares children, patients and confuses CHWs	The need to appease scared children often interferes with diagnosis
The timer cannot synchronise the start of the breath count and timer	Parents / guardians are not convinced by a negative reading as there is no result indicator
The timer does not show an elapsed time or what it is counting	CHWs experience difficulty to accurately count irregular breathing due to a stressful environment and time pressure.
The ARI timer is not automated	The lack of light / electricity is a challenge to general diagnosis
CHWs cannot identify whether a timer is faulty and use it regardless	Fear of contracting pneumonia distracts a CHW's attention on proper diagnosis
CHWs refer to the malaria rapid diagnostic test (RDT) as a good example of communicating the need to "treat or not to treat"	Lack of adequate knowledge and training on preventative care is a limitation
	Hesitation of CHWs to refuse treatment due to cultural pressure and expectations, accentuating misuse of antibiotics

Source: Synovate / UNICEF Research 2011.

Target Product Profile for 'Acute Respiratory Infection Diagnostic Aid' (ARIDA)

- Together with partners, UNICEF Supply Division and Programme Division have identified a need for improved tools to support CHWs with the diagnosis of pneumonia.
- To address this, UNICEF has compiled a ***"Target Product Profile (TPP)"*** in order to convey some of the vast experience and knowledge accumulated within UNICEF and its partner organizations to potential developers and suppliers to enable the availability of improved tools.

This TPP will be released on November 12th 2014 'World Pneumonia Day'

Key Parameters for Selection

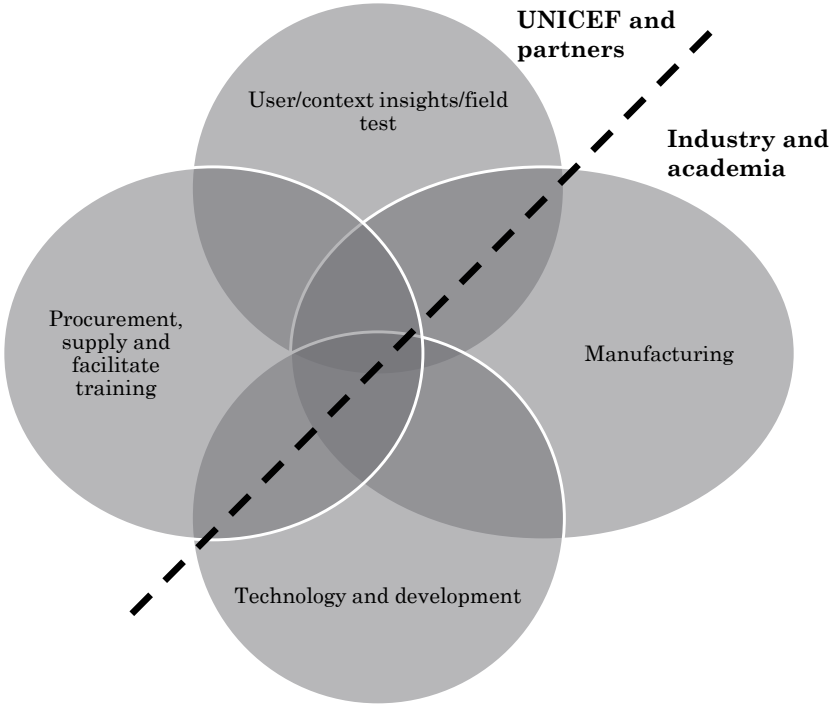
- The TPP is based on a series of key parameters – - *especially targeted at front-line community health workers (CHWs) involved with delivery of iCCM services* - that should inform the development of the ARIDA and aid in the selection, trade-off and evaluation of technology, concept and design;

- It is anticipated that a second forthcoming TPP will define devices to be fully developed over a longer-term period that could ideally differentiate between viral and bacterial pneumonia.

Key Parameters for CHWs	Description
Usability - ease of use	Easy for operator to use the device, e.g. can apply it appropriately, switch on the device, select the correct settings, & get the correct result
High level of decision support/automation of diagnosis	Allows the operator to detect the symptoms of pneumonia and provide diagnosis, without the need for decision making from them. e.g. automatically detects breathing rate, applies age specific fast breathing threshold
No or little literacy and numeric literacy required	The device only requires a very low level of literacy and/or numeric literacy to be operated by the operator
No or little training required	The operator only requires minimal amounts of training to be able to use the device effectively to detect symptoms of pneumonia
No or little familiarity with technology required	The operator does not need any prior familiarity with technology to operate the device effectively to detect the symptoms of pneumonia
Long operational life in the field – e.g. more than 2 years	The device will have an long operational life while being used by operator, e.g. of more than 2 years
Does not require charging (solar, battery, grid)	The device does not require charging to be used by the operator to detect the symptoms of pneumonia
Does not require replaceable parts (battery, consumables)	The device does not require replaceable parts such as non-rechargeable batteries and/or consumables throughout its functional life in the field
High durability/mechanical robustness	The device will not break during normal use, transportation or storage by the operator in the detection of the symptoms of pneumonia
Requires little or no maintenance	The device does not require any maintenance throughout its operational life when used by the operator to effectively detect the symptoms of pneumonia
High caregiver acceptability of diagnosis	The readings provided by the device help and support the caregiver/parent in accepting the diagnosis offered by the operator
Easy to maintain hygiene	The device is hygienic and easy to maintain in this regard and hygiene can be maintained using locally available resources – e.g. no special cleaning procedures
Low price	The annualised device cost is low

UNICEF ARIDA TPP project summary

- Communicate the context, needs and constraints for a diagnostic aid to be used for the diagnosis of pneumonia by a CHW in a resource limited setting.
- Target audience is potential suppliers and manufacturers of devices that can be used to assess fast breathing.
- The scope is limited to work with current iCCM and IMCI guidelines
- **This TPP will be released on November 12th 2014 'World Pneumonia Day'**



Estimates of CHWs and front-line HWs across sub-set of 10 high burden pneumonia countries – potential demand for pneumonia diagnostics

Country	Total # CHWs in country	CHW type	front-line providers (facility)
India	894,525	ASHAs	2,170,000
Nigeria	85,000	CHWs (CHOs, CHEWs, JCHEWs)	252,635
DRC	2,286	Community Relais	
Ethiopia	34,000	Health Extension Workers	2,249
Kenya	59,810	CHWs	33,688
Pakistan	110,000	Lady Health Workers	205,264
Bangladesh	97,000	Shasthyo Sebikas	21,700
Niger	3,500	Community health agents	2,676
Uganda	83,000	VHTs	59,000
Tanzania	12,110	HBC community volunteers	11,946
Total	**1,381,231**		**2,759,159**

Thank you








http://www.unicef.org/supply/

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