



# How well do public and private health facilities adhere to Integrated Management of Childhood Illnesses (IMCI) guidelines?

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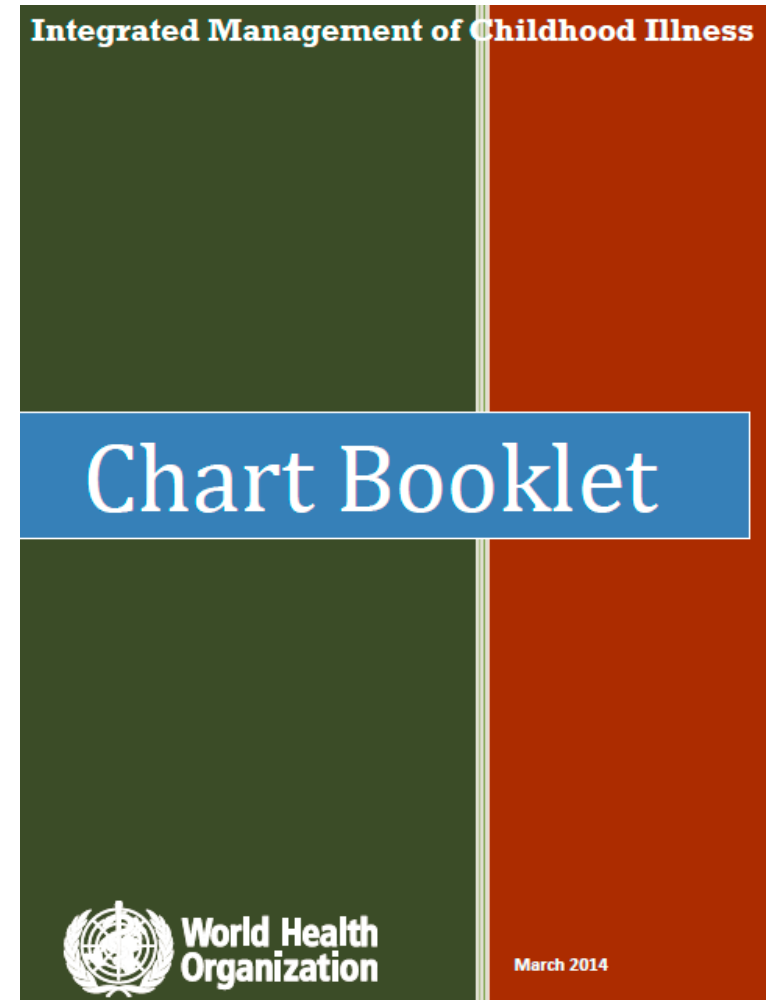
## Please Note

- The data in this presentation are preliminary
- Please contact Sarah Bradley  
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# Why Integrated Management of Childhood Illnesses (IMCI) matters

- WHO introduced IMCI guidelines to improve the integration and quality of health care services at community and health facility levels
- Following the IMCI protocol enhances case management and improves childhood survival
- Since 1996, more than 100 countries have adopted IMCI
- Providers' IMCI adherence and variations by sector remain unknown





# Research Questions

1. How well do public and private facilities adhere to IMCI guidelines for sick children and young infants?
2. Where are the largest gaps in adherence to the IMCI algorithm? Do these differ by sector?



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**THEN ASK ABOUT MAIN SYMPTOMS:**

**Does the child have cough or difficult breathing?**

**If yes, ask:**

- For how long?

**Look, listen, feel\*:**

- Count the breaths in one minute.
- Look for chest indrawing.
- Look and listen for stridor.
- Look and listen for wheezing.

CHILD MUST BE CALM

**If wheezing with either fast breathing or chest indrawing:**

Give a trial of rapid acting inhaled bronchodilator for up to three times 15-20 minutes apart. Count the breaths and look for chest indrawing again, and then classify.

**If the child is:**

2 months up to 12 months	<b>Fast breathing is:</b> 50 breaths per minute or more
12 Months up to 5 years	40 breaths per minute or more

**Classify  
COUGH or  
DIFFICULT  
BREATHING**

<ul style="list-style-type: none"> <li>• Any general danger sign or</li> <li>• Stridor in calm child.</li> </ul>	<p><b>Pink:</b> SEVERE PNEUMONIA OR VERY SEVERE DISEASE</p>	<ul style="list-style-type: none"> <li>■ Give first dose of an appropriate antibiotic</li> <li>■ Refer <b>URGENTLY</b> to hospital**</li> </ul>
<ul style="list-style-type: none"> <li>• Chest indrawing or</li> <li>• Fast breathing.</li> </ul>	<p><b>Yellow:</b> PNEUMONIA</p>	<ul style="list-style-type: none"> <li>■ Give oral Amoxicillin for 5 days***</li> <li>■ If wheezing (or disappeared after rapidly acting bronchodilator) give an inhaled bronchodilator for 5 days****</li> <li>■ If chest indrawing in HIV exposed/infected child, give first dose of amoxicillin and refer.</li> <li>■ Soothe the throat and relieve the cough with a safe remedy</li> <li>■ If coughing for more than 14 days or recurrent wheeze, refer for possible TB or asthma assessment</li> <li>■ Advise mother when to return immediately</li> <li>■ Follow-up in 3 days</li> </ul>
<ul style="list-style-type: none"> <li>• No signs of pneumonia or very severe disease.</li> </ul>	<p><b>Green:</b> COUGH OR COLD</p>	<ul style="list-style-type: none"> <li>■ If wheezing (or disappeared after rapidly acting bronchodilator) give an inhaled bronchodilator for 5 days****</li> <li>■ Soothe the throat and relieve the cough with a safe remedy</li> <li>■ If coughing for more than 14 days or recurrent wheezing, refer for possible TB or asthma assessment</li> <li>■ Advise mother when to return immediately</li> <li>■ Follow-up in 5 days if not improving</li> </ul>

\*If pulse oximeter is available, determine oxygen saturation and refer if < 90%.

\*\* If referral is not possible, manage the child as described in the pneumonia section of the national referral guidelines or as in WHO Pocket Book for hospital care for children.

\*\*\*Oral Amoxicillin for 3 days could be used in patients with fast breathing but no chest indrawing in low HIV settings.

\*\*\*\* In settings where inhaled bronchodilator is not available, oral salbutamol may be tried but not recommended for treatment of severe acute wheeze.



## IMCI Assessments examined for children 2-59 months old

1. Check for general danger signs
2. Does the child have cough or difficult breathing?
3. Does the child have diarrhea?
4. Does the child have fever?
5. Then check for acute malnutrition
6. Then check for anemia
7. Then check for HIV infection
8. Then check the child's immunization status

### CHECK FOR GENERAL DANGER SIGNS

#### *Ask:*

- Is the child able to drink or breastfeed?
- Does the child vomit everything?
- Has the child had convulsions?

#### *Look:*

- See if the child is lethargic or unconscious.
- Is the child convulsing now?



## IMCI Assessments examined for children 2-59 months old with symptoms of cough, diarrhea, and/or fever

1. Check for general danger signs
2. Does the child have cough or difficult breathing?
  - a) **If yes, assess and treat**
3. Does the child have diarrhea?
  - a) **If yes, assess and treat**
4. Does the child have fever?
  - a) **If yes, assess and treat**
5. Then check for acute malnutrition
6. Then check for anemia
7. Then check for HIV infection
8. Then check the child's immunization status

If child has cough, diarrhea, and/or fever symptoms, they require different assessments, so examined separately.

Denominator: children with symptom reported by caregiver and mentioned during visit



## IMCI Assessments examined for young infants 0-2 months old

1. Check for very severe disease and local bacterial infection: ask about difficulty feeding and convulsions
2. Check for jaundice (pallor)
3. Does the young infant have diarrhea?
  - a) If yes, assess and treat
4. Then check for HIV infection
5. Then check for feeding problems or low weight-for-age
6. Then check the child's immunization status

**Limitation:** SPA sick child observation tool designed for all children U5, so it does not include many assessments relevant to young infants:

- Examination of umbilicus
- Look for skin pustules





## Data: Service Provision Assessment (SPA) surveys

- 7 recent SPAs with sick child visit observation data:
  - Afghanistan 2018-19, DR Congo 2017-18, Haiti 2017-18, Malawi 2013-14, Nepal 2015, Tanzania 2014-15, Senegal 2018-19
  - Provider-sick child interaction observations (examinations performed, diagnosis, treatment)
    - Providers know they are being observed
- Compared with 2014 IMCI chartbook



# Methods

- Pooled data: each country weighted equally in averages (N=15,581 sick children 2-59 months)
  - Presenting country-level results only when  $N \geq 100$
  - Differences between sectors highlighted when statistically significant
- For children  $< 2$  months,  $N = 821$ . No results shown at country level
  - 68 children  $< 2$  months with diarrhea. Results shown in (parentheses), interpret with caution
- Urgently referred children are excluded from analysis (in alignment with DHS team analysis)



## Representative data from public and private facilities

SPAs include either a census or nationally representative sample of clinical health facilities in each country

<b>Public sector</b>	<b>Private sector</b>
<ul style="list-style-type: none"><li>• Hospitals</li><li>• Clinics</li><li>• Health posts</li></ul>	<ul style="list-style-type: none"><li>• Private clinics, hospitals, and clinicians</li><li>• Nongovernmental and faith-based organizations</li></ul>

# Adherence to IMCI guidelines for sick children 2-59 months old



# An overall picture of adherence for children 2-59 months

What percentage of children  
received all IMCI screening  
questions and checks?

**0 to 0.1 percent**





Module for children 2-59m	Denominator	% children assessed correctly, pooled data		
		Public facilities	Private Facilities	Total
1) Check for general danger signs	All children	4%	2%	3%
2) Does the child have cough or difficult breathing?*	All children	67%	66%	66%
2A) If yes, asses and treat child correctly	Children with cough*	56%	77%	64%
3) Does the child have diarrhea?*	All children	43%	38%	41%
3A) If yes, asses and treat child correctly	Children with diarrhea*	19%	30%	23%
4) Does the child have fever?*	All children	80%	77%	79%
4A) If yes, asses and treat child correctly	Children with fever*	44%	52%	47%
5) Check for acute malnutrition	All children	5%	4%	5%
6) Check for anemia	All children	14%	14%	14%
7) Check for HIV infection+	All children+	4%	3%	4%
8) Check the child's immunization status	All children	48%	38%	44%

\* Provider asked about symptom or caregiver mentioned +Excludes Afghanistan and Nepal

Adherence to IMCI guidelines for  
young infants 0-2 months



# An overall picture of adherence for young infants

What percentage of young infants received all IMCI screening questions and checks?

**0 percent**



© Jim Holmes, AusAID

Module for children 0-2m	Denominator	% children assessed correctly, pooled data		
		Public facilities	Private Facilities	Total
1) Check for very severe disease and local bacterial infection	All children	4%	2%	3%
2) Check for jaundice	All children	36%	32%	34%
3) Does the child have diarrhea?*	All children	30%	36%	32%
3A) If yes, asses and treat child correctly	Children with diarrhea*	n/a	n/a	(28%)
4) Check for HIV infection+	All children	7%	4%	6%
5) Check for feeding problem and low weight for age	All children	17%	21%	18%
6) Check the child's immunization status	All children	58%	46%	53%

\* Provider asked about symptom or caregiver mentioned +Excludes Afghanistan and Nepal (n<100)

# Exploring the gaps in IMCI adherence for children 2-59 months





# 1. Danger Signs: Did provider ask if child was unable to drink/breastfeed, vomits everything, and has convulsions?

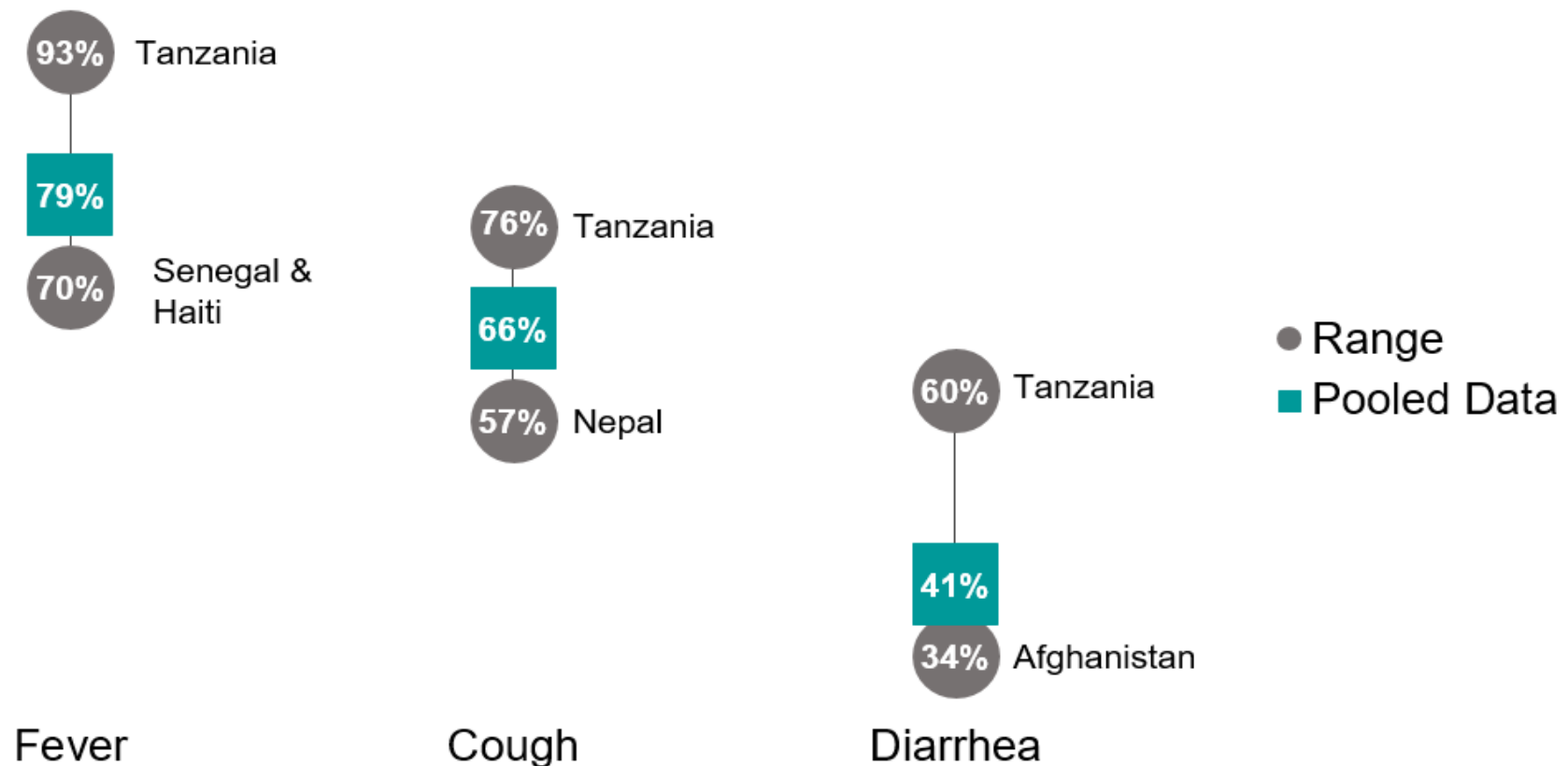
Only 3% of providers ask about all three danger signs





# Main symptoms: Did providers inquire about or did the caretaker mention each symptom during the visit?

Fever is the symptom most frequently asked about or mentioned



Public providers are more likely to ask or be told about diarrhea (**43%** vs. **38%** private)



## 2. Assessment and treatment of children with cough

- **Assessed & treated correctly: 64%**
  - 12% breaths counted, diagnosed with pneumonia, and given antibiotic
  - 52% breaths counted, not diagnosed with pneumonia
- **Not assessed & treated correctly: 36%**
  - 36% did not have breaths counted
  - 1% of kids diagnosed with pneumonia but not given antibiotic



## Correct cough assessment and treatment by sector

- **Treated correctly:** 56% public vs 77% private
- **Treated incorrectly:** 44% public vs 23% private
  - Public: 43% breaths not counted; 1% diagnosed and no antibiotics
  - Private: 22% breaths not counted; 1% diagnosed and no antibiotics



## Correct cough assessment and treatment by sector

- **Treated correctly:** 56% public vs 77% private
- **Treated incorrectly:** 44% public vs 23% private
  - Public: **43%** breaths not counted; 1% diagnosed and no antibiotics
  - Private: **22%** breaths not counted; 1% diagnosed and no antibiotics





### 3. Assessment and treatment of children with diarrhea

- **Treated correctly: 23%**
  - 14% diagnosed with diarrhea or dehydration and prescribed fluids and zinc
  - 8% assessed with no diagnosis
- **Treated incorrectly: 77%**
  - 69% not checked for dehydration
  - 8% diagnosed with diarrhea and NOT prescribed fluids and zinc
- Results are similar by sector



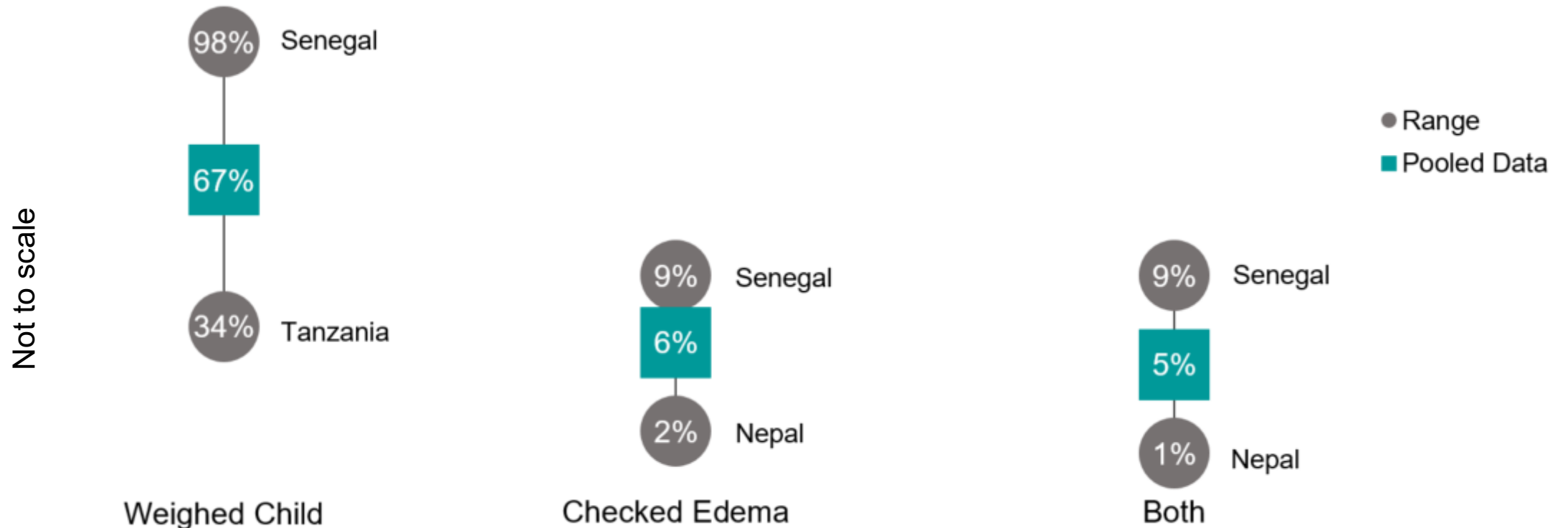
## 4. Assessment and treatment of fever

- **Treated correctly: 47%** (Range: 21% DRC to 69% Senegal)
  - 2% diagnosed with malaria, prescribed antimalarial
  - <1% diagnosed with fever, prescribed paracetamol
  - 45% temperature taken, no diagnosis
- **Treated incorrectly: 53%**
  - 19% no temperature taken
  - 34% diagnosed with malaria, fever, or measles and did not check for a stiff neck
- Correct treatment higher in private (**52%**) than public sector (**44%**)



## 5. Acute Malnutrition: Was child weighed and checked for edema?

Most children are weighed, but few children have edema checked

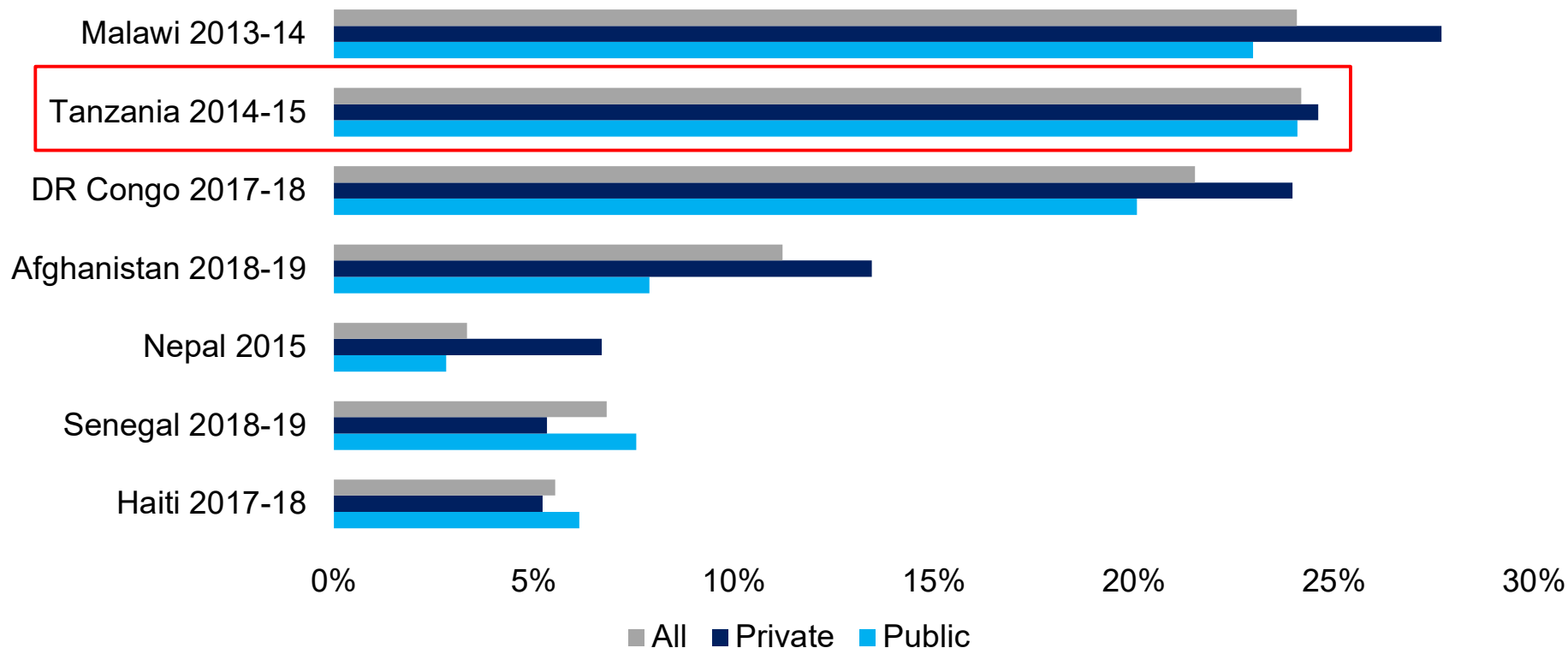


Private providers more likely to weigh sick children (**61%** public vs **78%** private)  
Public providers more likely to check for edema (**7%** public vs **5%** private)



## 6. Anemia: Did provider look at palms for pallor?

Providers in Malawi, Tanzania, and DR Congo most likely to check for pallor



Overall **14%** of providers checked for pallor, no consistent differences by sector



## 7: Did provider ask about mother's HIV status\*

- Overall: **4%** (Range: 1% in DRC and Senegal to 7% in Malawi and Tanzania)
- No substantial differences by sector
- Highest is 9% in Malawi private facilities



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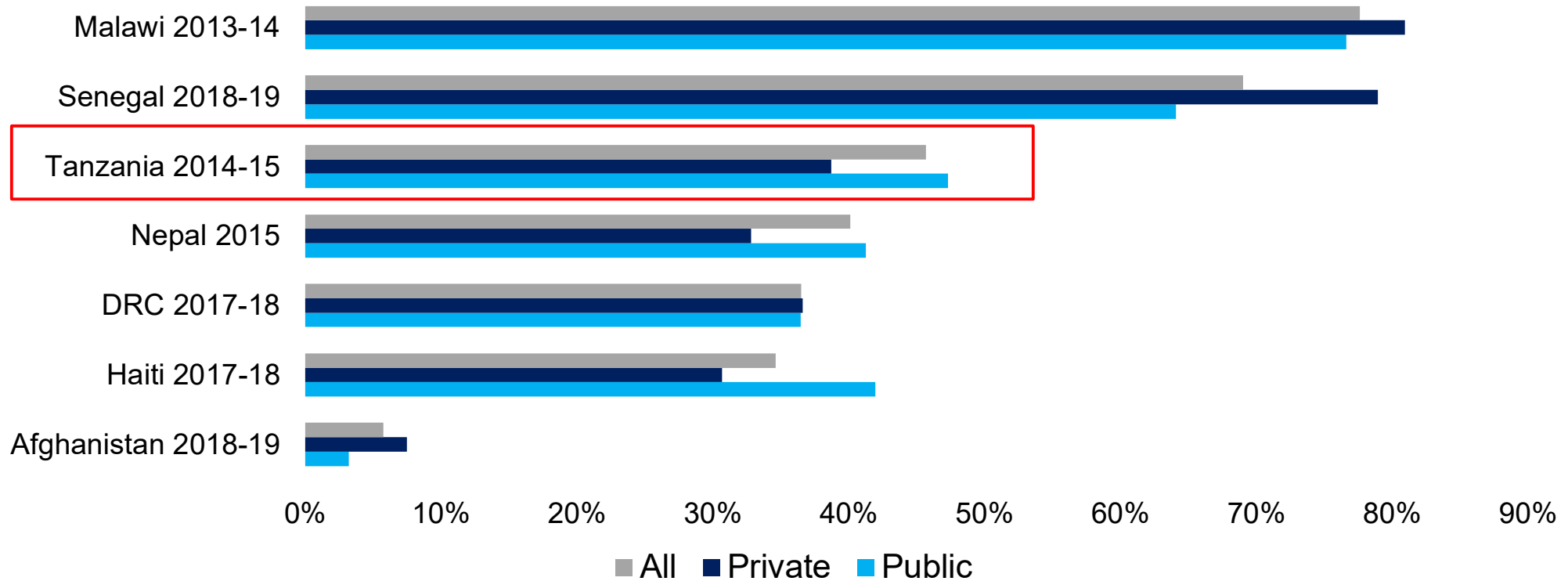
\* Note that HIV is not asked about in Afghanistan nor Nepal





## 8: Was immunization history checked?

Malawian and Senegalese providers most likely to check immunization history



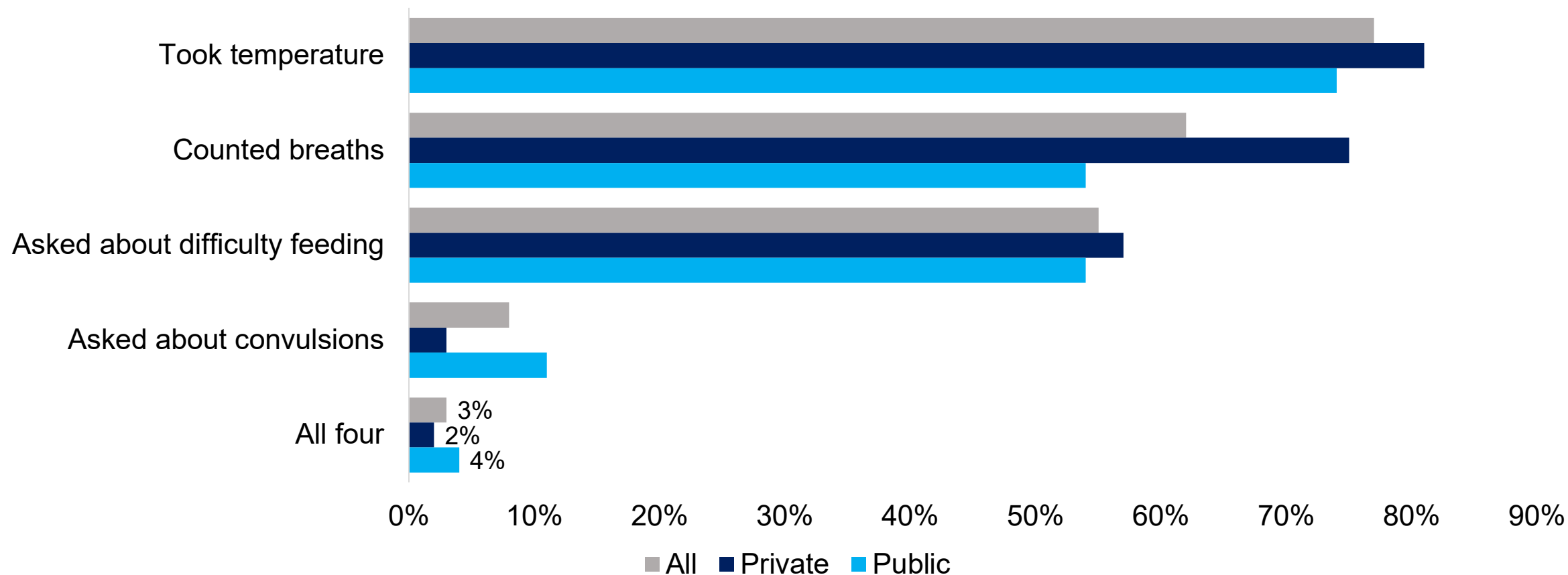
More public (**48%**) than private providers (**38%**) checked vaccination status

# Exploring the gaps in IMCI adherence for young infants



# 1: Very severe disease and local bacterial infection

Less than 5% of public and private providers checked for very severe disease and local bacterial infection





## 2: Assessing Jaundice

- 34% of providers checked young infants for jaundice
  - Check for pallor by looking at palms OR
  - Check for pallor by looking at conjunctiva
- Similar by sector





### 3. Among young infants with diarrhea (n=68)

- **Treated correctly: (28%)**
  - Checked for dehydration, diagnosed with diarrhea and prescribed fluids or not diagnosed with diarrhea
- **Treated incorrectly: (72%)**
  - Mostly not checked for dehydration; some checked for dehydration, diagnosed with diarrhea and NOT prescribed fluids



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## 4: Mother's HIV Status\*

- 6% of providers asked about the mother's HIV status
- 7% of public providers vs 4% of private providers asked



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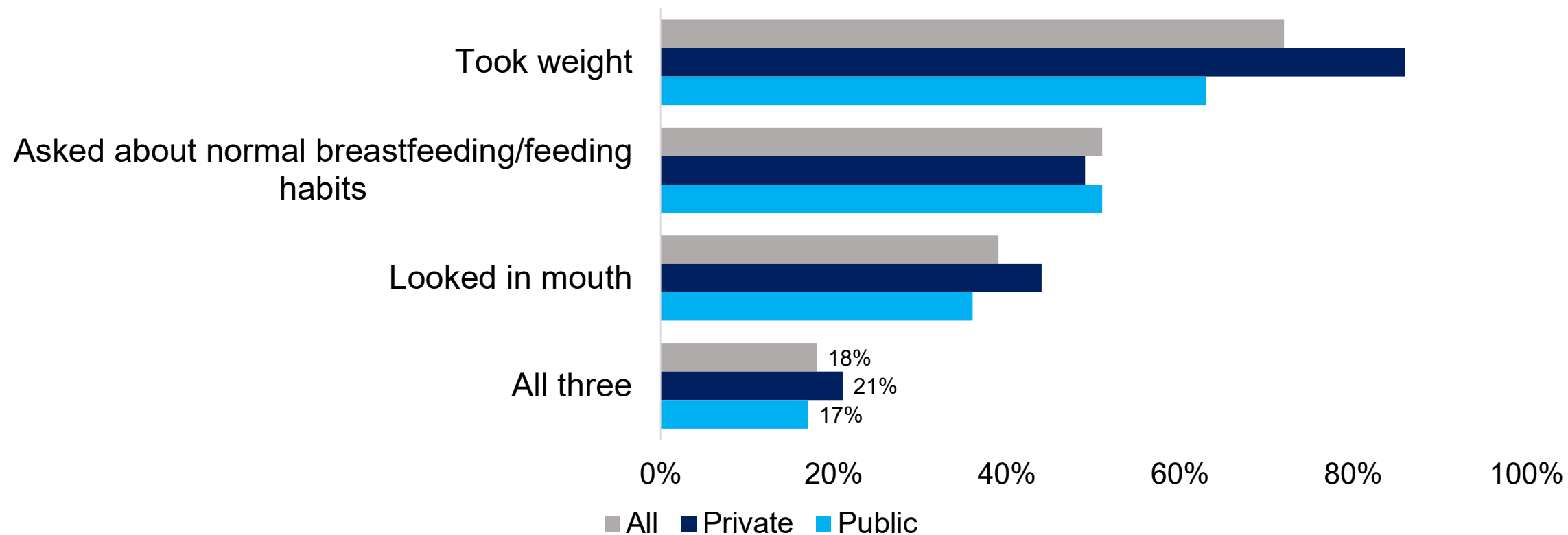
\* Note that HIV is not asked about in Afghanistan nor Nepal





## 5: Feeding problem or low weight for age

**Children more likely to be weighed in private facilities (86% vs. 63%)**





## Module 6: Immunization history

- 53% of providers checked the young infant's immunization history
  - Looked at young infant's health/vaccination card or asked caretaker
- Results are similar by sector



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# Summary and Next Steps



## IMCI adherence – where are the successes?

- Highest adherence levels are:
  - 79% assess if child has fever (2-59)
  - 66% assess if child has cough (2-59)
  - 64% assess and treat cough correctly (2-59)
  - 53% check immunization status (0-2)
- Adherence to all other modules is **below 50%**





## IMCI adherence – where are the gaps?

- Adherence to all modules could be improved
- Primary adherence gaps (<10% adherence):
  - Check for danger signs (2-59)
  - Check for severe disease (0-2)
  - Check for acute malnutrition (2-59)
  - Check for HIV infection (both age groups)



# Key differences by sector

## Private sector higher:

- Correct cough treatment (2-59)
- Correct fever treatment (2-59)

## Public sector higher:

- Asking about diarrhea (2-59)
- Checking immunization history (2-59)



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## Next Steps

- Presenting at Child Health Task Force's Private Sector Engagement and Quality of Care Sub-Group meeting in February
- Potential country deep dives with Missions and MoHs to inform journal article; country briefs
- Journal article forthcoming



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# Tanzania Results

Module for children 2-59m	Denominator	% children assessed correctly, Tanzania		
		Public facilities	Private Facilities	Total
1) Check for general danger signs	All children	11%	10%	10%
2) Does the child have cough or difficult breathing?*	All children	77%	72%	76%
2A) If yes, asses and treat child correctly	Children with cough*	37%	67%	42%
3) Does the child have diarrhea?*	All children	60%	60%	60%
3A) If yes, asses and treat child correctly	Children with diarrhea*	18%	25%	19%
4) Does the child have fever?*	All children	94%	92%	93%
4A) If yes, asses and treat child correctly	Children with fever*	33%	34%	33%
5) Check for acute malnutrition	All children	1%	3%	2%
6) Check for anemia	All children	24%	25%	24%
7) Check for HIV infection+	All children+	8%	7%	7%
8) Check the child's immunization status	All children	47%	39%	46%

\* Provider asked about symptom or caregiver mentioned

Module for children 0-2m	Denominator	% children assessed correctly, Tanzania
1) Check for very severe disease and local bacterial infection	All children	6%
2) Check for jaundice	All children	29%
3) Does the child have diarrhea?*	All children	46%
3A) If yes, asses and treat child correctly	Children with diarrhea*	5%
4) Check for HIV infection+	All children	16%
5) Check for feeding problem and low weight for age	All children	4%
6) Check the child's immunization status	All children	47%

\* Provider asked about symptom or caregiver mentioned