

Table 1: Clinic sites included in each study group.

Study Group	Clinic Site 1	Clinic Site 2	Clinic Site 3	Clinic Site 4	Clinic Site 5
<i>Control (2016)</i>					
<i>Control (2019)</i>					
<i>Intervention 1 (IMCI-only)</i>					
<i>Intervention 2 (IMCI/pulse oximetry)</i>					
<i>IMCI = Integrated Management of Childhood Illnesses</i>					

Table 2: Clinical officers and nurses present for the pulse oximeter training course from each clinic site.

	<i>Clinical Officer</i>	<i>Nurse</i>
Clinic Site 3		   
Clinic Site 4		  
Clinic Site 5		   

Table 3: Demographic data for all U-5 patients presenting with NMF in each study group.

Variable	Control (2016)	Control (2019)	IMCI	IMCI + PO	p-value
Sex					
Male	938 (47.9%)	260 (45.5%)	86 (48.3%)	378 (47.5%)	p = 0.80
Female	1022 (52.1%)	311 (54.5%)	92 (51.7%)	417 (52.5%)	
Age					
<1 month	11 (0.6%)	7 (1.2%)	2 (1.1%)	15 (1.9%)	p <0.05
2-12 months	679 (34.6%)	198 (34.7%)	48 (27.0%)	242 (30.4%)	
1	473 (24.1%)	164 (28.7%)	55 (30.9%)	211 (26.5%)	
2	345 (17.6%)	67 (11.7%)	34 (19.1%)	149 (18.7%)	
3	258 (13.2%)	64 (11.2%)	19 (10.7%)	83 (10.4%)	
4	195 (9.9%)	71 (12.4%)	20 (11.2%)	95 (11.9%)	
Clinic Site					
1	216 (11.0%)	306 (53.5%)	--	--	
2	410 (20.9%)	265 (46.4%)	--	--	
3	129 (6.6%)	--	178 (100%)	--	
4	643 (32.8%)	--	--	506 (63.6%)	
5	563 (28.7%)	--	--	289 (36.4%)	
Total	1,960 (55.9%)	571 (16.3%)	178 (5.1%)	795 (22.7%)	

IMCI = Integrated Management of Childhood Illnesses; PO = pulse oximeter

Table 4: Provider quotes related to their perceived benefits from IMCI course participation.

<i>Benefits from IMCI course participation</i>	<i>Illustrative Quote</i>
<i>Improved illness classification</i>	"So, if they say that the patient is coughing, we check the type of breathing the child is having. Is it fast? Is it slow? Is the child having breath weakness? Is the child having hoarse voice? Is the child sucking? If the child is not sucking, is the child eating? Is the child having diarrhea? And is the child malnourished? So, we have to check the child holistically." "IMCI it does help, especially with classification, because we do not just diagnose now. Now we classify the illness. So, we start with symptoms, we take each step to see what the symptoms are and how severe each symptom is. Then, we can come to the conclusion of what the child is suffering from."
<i>Enhanced awareness of antibiotic resistance</i>	"There is no test for antibiotic resistance. But it exists. We know that it exists because already we are being told by the Ministry of Health, and we learned in the [IMCI] training, that certain antibiotics do not work in young patients, patients under five, because resistance already exists for those antibiotics."
<i>Increased provider confidence</i>	"I think the IMCI course helped me to be more confident when I meet a patient. When I know the patient has these symptoms, I can be more certain when he does need medication, or when he just needs to rest at home to feel better. I do not feel that I am guessing about the child's condition."

Table 5: Provider quotes related to their perceived benefits of pulse oximeter utilization.

<i>Benefits from pulse oximeter use</i>	<i>Illustrative Quote</i>
<i>Improved detection of pneumonia cases</i>	"It has helped quite a lot in terms of reaching the right diagnosis, especially pneumonia, because it is very easy to miss a child with pneumonia. They can present with normal breathing, normal temperature, normal lung sounds, and so we might think it is a minor infection. We might send them home with the wrong medications. But now, we can see that their oxygen saturation is low, below 95% concentration, and we know that they do have pneumonia and do need antibiotics immediately."
<i>Reduced unnecessary antibiotic prescription</i>	"Previously, we would often prescribe antibiotics after hearing the history from the mother. We would go into the field and if we saw a child that was having difficulty breathing, he was coughing severely, and we would think maybe it would be pneumonia, we would just prescribe antibiotics. But now, when you use the pulse oximeter and see normal oxygen levels, you are indeed sure that this is not pneumonia, just an upper respiratory tract infection."
<i>Increased confidence of caretakers</i>	"Yes, the pulse oximeters have increased our confidence greatly, but also the confidence of the caregivers. You explain to them that this is medical equipment to assess if the child has pneumonia. Then, when you tell them that this is just the common cold or an upper respiratory infection, they will believe you, because you have used the instrument rather than just saying to them that their child just has the common cold. They can see the results right there and it helps them to feel that their child is safe, that they are receiving proper care."