



## Appendix 1: Pediatric Healthcare Delivery Value Chain

	MONITORING / PREVENTION	ASSESSING / DIAGNOSIS	INTERVENING / TREATMENT	MONITORING / MANAGING COMPLICATIONS
<p><b>INFORMING AND ENGAGING</b></p> <p>What do patients need to be educated about and (by whom)?</p>	<p><b>GROWTH &amp; DEVELOPMENT</b></p> <ul style="list-style-type: none"> <li>Nutrition &amp; Feeding (nurse/CHW)</li> <li>Developmental milestones (nurse/CHW)</li> </ul> <p><b>ILLNESS PREVENTION</b></p> <ul style="list-style-type: none"> <li>Counseling on malaria prevention, hygiene, breastfeeding, &amp; vaccines (nurse/CHW)</li> <li>Awareness of illness danger signs and how to access care (nurse/CHW)</li> </ul>	<ul style="list-style-type: none"> <li>Explanation of the illness diagnosis and plan for care (nurse/CHW)</li> <li>Awareness of danger signs and how to access care immediately (nurse/CHW)</li> </ul>	<ul style="list-style-type: none"> <li>Treatment plan and anticipatory guidance to caretaker around supportive care (i.e. encourage fluids, ORS preparation if necessary) (nurse/CHW)</li> <li>Routine follow up plan (nurse/CHW)</li> <li>Education on when to follow-up if not improving on treatment plan (nurse/CHW)</li> </ul>	<ul style="list-style-type: none"> <li>Treatment plan &amp; signs of treatment failures (nurse/CHW)</li> <li>Contingency plans and where to present if not improving (nurse/CHW)</li> </ul>
<p><b>MEASURING</b></p> <p>What measures need to be collected at the patient level?</p>	<p><b>GROWTH &amp; DEVELOPMENT</b></p> <ul style="list-style-type: none"> <li>Nutritional status assessment - Anthropometric measurements</li> </ul> <p><b>ILLNESS PREVENTION</b></p> <ul style="list-style-type: none"> <li>Use of LLIN and reason for not utilizing</li> <li>Completeness of vaccines</li> <li>Access to clean water, Housing / Environmental (TBD)</li> </ul>	<ul style="list-style-type: none"> <li>Presence of danger signs</li> <li>Vital signs (temperature, respiratory rate)</li> <li>Nutritional status (MUAC), (Z scores)</li> <li>Malaria status (mRDT)</li> <li>Dehydration status (mild, moderate, and severe dehydration)</li> <li>Diagnoses</li> </ul>	<ul style="list-style-type: none"> <li>Adherence to treatment plan based on diagnosis</li> <li>Receipt of medicines at the time of diagnosis</li> </ul>	<ul style="list-style-type: none"> <li>Adherence/ Completion of treatment plan based on diagnosis (%)</li> <li>Treatment success</li> <li>Referral success in case of treatment failure</li> </ul>
<p><b>ACCESSING</b></p> <p>Where patients can access care</p>	<ul style="list-style-type: none"> <li>Clinic: Pre-natal visits</li> <li>Clinic: Post-natal visits, routine follow-up</li> <li>CHW: Acute care home visits and well child home visits</li> </ul>	<ul style="list-style-type: none"> <li>CHW: community home visit</li> <li>Clinic visit</li> </ul>	<ul style="list-style-type: none"> <li>CHW: community home visit</li> <li>Clinic visit</li> </ul>	<ul style="list-style-type: none"> <li>CHW: community home visit</li> <li>Clinic visit</li> <li>Tertiary Hospital</li> </ul>



**CARE DELIVERY**  
What activities are performed at each stage and by whom (in parentheses)?

**PROPOSED KPIs**  
Indicators to be used to measure and/or benchmark performance

	<b>GROWTH &amp; DEVELOPMENT</b>	<b>CLINICAL EVALUATION</b>	<b>TREATMENT</b>	<b>FOLLOW-UP</b>
	<ul style="list-style-type: none"> <li>Conduct routine growth monitoring &amp; education regarding feeding/nutrition (nurse/CHW)</li> <li>Provide vitamin supplementation as needed (nurse/CHW??)</li> </ul> <p><b>ILLNESS PREVENTION</b></p> <ul style="list-style-type: none"> <li>Deliver bednets to pregnant woman (nurse)</li> <li>Provide vaccinations on schedule (nurse)</li> <li>Education sessions regarding hygiene (nurse/CHW)</li> </ul>	<ul style="list-style-type: none"> <li>Adherence to clinical algorithms (IMCI protocol) for diagnosis (nurse/CHW)</li> </ul>	<ul style="list-style-type: none"> <li>Adherence to clinical algorithms (IMCI protocol) for treatment (nurse/CHW)</li> </ul>	<ul style="list-style-type: none"> <li>Evidence based follow-up plan with serial reassessments (monitoring) (nurse/CHW)</li> </ul> <p><b>REFERRAL</b></p> <ul style="list-style-type: none"> <li>Provide appropriate referrals if severe or symptoms have worsened (nurse/CHW)</li> <li>Transition care to referral center/ confirm patient attends (nurse/CHW)</li> </ul>
	<ul style="list-style-type: none"> <li><b>KPI 1: Catchment area population (population dans la zone de couverture)</b> = The number of people living in areas served by Integrate Health programs.</li> <li><b>KPI 2: Number of clinics (nombre de formations sanitaires)</b> = The number of public sector health centers that receive Integrate Health's technical and financial support.</li> <li><b>KPI 3: Number of Community Health Workers (CHWs) (nombre d'agents de santé communautaires (ASCs))</b> = The number of trained, equipped, supervised, and salaried CHWs who conduct proactive case finding and provide home-based care to ensure population-level coverage.</li> </ul>	<ul style="list-style-type: none"> <li><b>KPI 4: Rate of attendance for curative services for children under 5 at the health centers (taux de fréquentation des services curatifs pour les enfants moins de 5 ans)</b> = the percentage of children under 5 who have received a consultation at the health center.</li> <li><b>KPI 7: Timeliness of childhood illness treatment during the first 72 hours of symptom onset (Proportion d'enfants évalués dans les 72 heures suivant l'apparition des symptômes)</b> = The proportion of all cases of childhood illness evaluated and treated who are evaluated and treated by CHWs during the first 72 hours following symptom onset</li> </ul>	<ul style="list-style-type: none"> <li><b>KPI 8: Under 5 consultations (Nombre des consultations par les ASCs et formations sanitaires)</b> = Total number of consultations of children under 5 completed by CHWs and at health centers.</li> </ul>	<ul style="list-style-type: none"> <li><b>KPI 9: Effective pediatric referrals (Proportion de références effectives)</b> = Percentage of referrals by CHWs for children under 5 that receive care at a health center.</li> <li><b>KPI 10: Children under 5 deaths (Nombre de décès infanto-juvénile (toutes causes))</b> = Total deaths of children under 5 (all causes).</li> <li><b>KPI 11: Under-five mortality rate (Taux de mortalité des moins de cinq ans)</b> = Probability of dying by age 5 per 1000 live births.</li> </ul>



<ul style="list-style-type: none"> <li>• <b>KPI 5: CHW visits (nombre d'action total des ASC)</b> = The number of visits CHWs make to households, including all types of consultations, educational sessions, and active case finding (can be disaggregated by visit type).</li> <li>• <b>KPI 6: DTP-HepBHib3 vaccine coverage for children 0-11 months old (Proportion d'enfants de 0-11 mois ayant reçu 3 doses de vaccin DTC-HepBHib3)</b> = Proportion of children 0-11 months who received 3 doses of DTC-HepBHib3 vaccine out of estimated children 0-11 months.</li> </ul>			
<p><b>PROPOSED SECONDARY INDICATORS</b> Secondary tier of indicators to provide depth and insight to KPIs</p> <ul style="list-style-type: none"> <li>• <b>Number of households visited (Nombre de ménages visités / touches)</b> = Number of households visited by CHWs.</li> <li>• <b>Household coverage in the past month (Pourcentage des ménages dans la zone de couverture visités pendant le mois)</b> = Percentage of households covered in the catchment area visited. Percent of households visited in the month out of all households in the catchment area.</li> <li>• <b>Household information updated in the past 6 months (Pourcentage de ménages dont le dossier a été mis à jour au cours des 6 derniers mois)</b> =</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Number of sick patients visited by CHWs (Nombre de malades visités au niveau communautaire)</b> = Number of sick patients visited by CHWs.</li> <li>• <b>Malnutrition testing and referral rate (Pourcentage des enfants malnutris dépistés et référés)</b> = Percentage of children under 5 with malnutrition who are tested and referred out of all cases tested. Current data source is IH data.</li> <li>• <b>Confirmed malaria cases (Nombre des cas de paludisme confirmé).</b></li> <li>• <b>Percentage of suspected malaria cases tested (Pourcentage de cas suspects</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Percentage of cases of childhood illness evaluated and treated during the first 72 hours of symptom onset at the health centers (Proportion d'enfants évalués dans les 72 heures suivant l'apparition des symptômes)</b> = The proportion of all cases of childhood illness evaluated and treated who are evaluated and treated at the health centers during the first 72 hours following symptom onset.</li> <li>• <b>Malaria cases treated with artemisinin-based combination therapy (ACT) for children under 5 years old (Nb cas paludisme simple traités avec CTA)</b> = Number of malaria cases</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Percentage of confirmed serious malaria cases (Pourcentage de cas de paludisme confirmés graves)</b> = Percentage of serious malaria cases out of all cases confirmed by microscopy and/or rapid diagnostic test (RDT) at the health center.</li> <li>• <b>Number of cases referred (Nombre de cas referes au niveau communautaire)</b> = Number of cases of children under 5 referred to health center by the CHWs.</li> <li>• <b>Pediatric death audit coverage (Pourcentage de décès audités le trimestre passé)</b> = Percentage</li> </ul>



Percentage of households whose records have been updated in the last 6 months.

- **Medicine availability rate at the health center (Taux de disponibilité des médicaments auprès les USP)** = Percentage of days where tracer medications (n=24) are available at the health center out of the month
- **Number of children under 5 (Nombre d'enfants <5 ans inscrits dans la zone de couverture)** = Total number of children under five in the catchment area.
- **Bed net coverage for children 0-11 months (Proportion d'enfants de 0-11 mois ayant reçu une MILDA)** = Percentage of children aged 0-11 months that received a bed net out of all children who received the oral polio (VPO1) vaccine.
- **Bed net usage for children under 5 (Pourcentage des enfants de moins de 5 ans ayant dormi sous une MILDA la nuit dernière)** = Percentage of children under 5 who slept under a bed net the previous night out of all children under 5 visited.
- **Bed net availability rate at the health center (Disponibilité mensuelle des MILDA)** = Percentage of days where bed

**de paludisme testés)** = Percentage of cases tested for children under 5 out of all suspected cases for children under 5.

- **Rapid diagnostic test (RDT) availability rate at health centers (Disponibilité mensuelle des TDR (%) au niveau des formations sanitaires)** = Percentage of days where RDTs are available at the health center out of the month.

treated by CHWs and at health centers with ACT

- **Percentage of children under 5 years of age with confirmed malaria treated with artemisinin-based combination therapy (ACT) (Pourcentage d'enfants âgés de moins de 5 ans ayant eu le paludisme confirmé et traités avec CTA)** = Percentage of children under 5 with confirmed malaria treated with ACTs by CHWs and at health centers out of all confirmed cases.
- **# of cases of acute respiratory infections treated (Nombre de cas d'IRA traité par les ASC et formations sanitaires)** = Number of acute respiratory infections treated by CHWs and at health centers using antibiotics. Data sources are DHIS2 and IH data.
- **Acute respiratory infection antibiotic treatment by CHW rate: (Pourcentage des enfants de moins de 5 ans avec symptômes d'IRA traités par des antibiotiques par un agent de santé communautaire et suivi à domicile)** = Percentage of children under 5 with acute respiratory infection symptoms treated with antibiotics by a CHW and followed up at home

of pediatric (under 5) deaths audited in the last quarter.



nets are available at the health center out of the month.

out of all acute respiratory infection cases.

- **Cases of diarrhea treated by CHWs (Nombre de cas de diarrhee traites avec SRO/Zinc chez les enfants de moins de 5 ans au niveau communautaire)** = Number of cases of diarrhea treated with ORS/Zinc in children under 5 by CHWs
- **Diarrhea treatment with zinc (Pourcentage enfants de moins de 5 ans avec diarrhée traité avec Zinc)** = Percentage of children under 5 with diarrhea treated with zinc by CHWs out of all cases of diarrhea at the CHW level
- **Artemisinin-based combination therapy (ACT) availability rate at health centers (Disponibilite mensuelle des CTA (%) au niveau des formations sanitaires)** = Percentage of days where ACTs are available at the health center out of the month.
- **Correct treatment pre-referral rate (Pourcentage de traitements pré-référence correctement administrés, si recommandé (observé))** = Percentage of correctly provided treatments (adherence to Integrated Management of Childhood Illness (IMCI) protocol) by CHWs pre-referrals



		<p>out of total treatments by CHWs observed.</p> <ul style="list-style-type: none"><li>• <b>Anti-malarial injectables availability rate at health centers (Disponibilite mensuelle des antipalu injectables):</b> percentage of days where anti-malarial injectables are available at the health center out of the month.</li></ul>	
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