CATALYZING PEDIATRIC TUBERCULOSIS (CAP TB) PROJECT IN TURKANA COUNTY:
An Elizabeth Glaser Pediatric AIDS Foundation Project in Kenya

THE CATALYZING PEDIATRIC TB PROJECT

The Catalyzing Pediatric TB (CaP TB) project, is a Unitaid-funded project (2017-2021), managed and implemented by the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) in 10 countries, including Kenya. The project aims to reduce pediatric TB morbidity and mortality by developing, implementing, and documenting innovative models of care and catalyzing their wide-scale implementation to improve case detection and treatment. CaP TB is being implemented in Turkana and Homa Bay counties in Kenya. Due to its close and comprehensive work with Kenya’s Ministry of Health in eliminating HIV in pediatric and adult populations, EGPAF is well-positioned to bring innovative solutions to tackle childhood TB in the country. This project will utilize the network built through EGPAF’s expansion of pediatric HIV testing and diagnosis to optimize access to TB case finding, testing, diagnostics and novel and effective treatment among vulnerable and high-risk populations.

In Turkana County, CaP TB began in three facilities within its first two years, with plans to scale-up to 10 facilities by project end. The phased scale-up will inform further ongoing implementation nationally and globally. The project is implemented in four sub-counties: Loima, Turkana West, Turkana North and Turkana Central.
RESEARCH OPPORTUNITIES

Baseline Assessment
A baseline assessment was completed, in May 2018, to determine the gaps in pediatric TB service delivery. EGPAF staff developed a questionnaire and disseminated this survey to implementing staff in 10 health facilities. From the survey, we found limited integration of TB screening in other services, leading to missed opportunities for identification. Further, there appeared to be low case finding and active screening among children under 14 years of age. This may have been due low levels of knowledge among health workers and community volunteers around TB screening, diagnosing, and managing children with TB. The survey also showed a limited health worker capacity to diagnose children using Xpert MTB/RIF, and clinical-radiological evaluation.

There were additional challenges in management of TB cases. There appeared to be suboptimal access to and utilization of pediatric TB services within health facilities and minimum task shifting for lay workers to perform simple tasks like TB screening, enabling clinicians to focus on diagnostic and treatment management. Finally, the community had low awareness of TB: its prevalence and how to identify a sign, or symptom.

Operations Research
Alongside implementation of services, CaP TB will document the effects of innovative screening approaches by implementing a stepwise study, Integrating Pediatric TB services into child health care services (INPUT). The INPUT study will assess integration of pediatric TB services in child health services (compared to standard of care), observing proportion of TB cases diagnosed among children under 5 years of age.

CAP TB SOLUTIONS
Intensifying Case Finding: From April 1, 2019, the three pilot sites began intensified pediatric TB case finding. A pediatric screening tool was developed and disseminated to community health workers. Trained on its use for contact investigation and in-home examinations, the tool links any presumptive cases to clinics for diagnostics and TB preventive therapy or treatment. The tool was also used in maternal and child health (MCH), prevention of mother-to-child HIV treatment (PMTCT) clinics, out-patient departments (OPDs), nutrition clinics, and pediatric wards to broaden case finding. All clinics implementing CaP TB are employing cough monitors: smaller dispensaries employ two, health centers employ three and sub-county hospitals / country referral hospitals employ five to better screen and link identified TB-presumptive patients. Further, the project engaged ten community health volunteers in TB contact investigation and screening at the community level and refer presumptive TB cases for diagnostic work-up.

Improved Diagnostics: Health care workers in all implementing sites were trained on the diagnosis and management of pediatric TB, as well as advance sample collection methods, such as gastric aspiration, sputum induction, nasopharyngeal aspiration and fine-needle aspiration of the lymph nodes (especially useful in diagnosis among children under 5 years old who cannot expectorate). Diagnosis is also enhanced by development and use of a user-friendly pediatric TB algorithm-used by clinicians and radiologists—to enable clearer interpretation of pediatric chest X-rays (CXR). CaP TB also improved laboratory-based diagnosis through the use of Xpert MTB/RIF testing already in existence in facilities where the project was working. Transportation and networking of samples for Xpert MTB/RIF and gastric aspiration testing was strengthened by use of motorbike riders supported by EGPAF’s Timiza90 project.

TB Prevention: CaP TB aims to improve availability of newer and optimized regimens of TB preventive therapy among children. One implementing site is piloting use of shorter preventive regimen (3RH) in children with latent TB infection while the other sites are using IPT for 6 months. Treatment adherence is being enhanced through psychosocial support group to all index clients of bacteriologically confirmed patients and children on TPT, across regimen types.

County Engagement Support and Leadership: The project engaged with county / sub-county health management teams on pediatric TB case finding strategies during county pediatric TB technical working group (TWG) meetings and through monthly mentorship and joint support supervision. During these supportive and mentorship site visits, the CaP TB pediatric case finding tool was assessed, client flow reviewed, CaP TB database entries reviewed and follow-up assistance is provided.
From April to December 2019 the Project:

- Provided **29,864** children with pediatric TB screening services
  - 568 children had presumed TB
  - 250 were tested using Xpert MTB/RIF

- Diagnosed **214** children aged 0-14 years with active TB disease
  - 208 through service delivery points and 6 through HIV TB and contact tracing and
  - 212 of them were initiated on Drug Sensitive TB treatment.

- Initiated **130** children on treatment for latent TB infection, preventing them from developing active TB disease that would otherwise cause morbidity or mortality.

**CAP TB IMPACT IN TURKANA COUNTY**

The project obtained IRB approval to allow the project to start facility based data collection in April 2019. This achievement and report will cover the period from April to December 2019, where by the project has provided 29,864 children with pediatric TB screening services, 568 children had presumed TB, 250 were tested using Xpert MTB/RIF. In total, 214 children aged 0-14 years were diagnosed with active TB disease (208 through service delivery points and 6 through HIV TB and contact tracing) and 212 of them were initiated on Drug Sensitive TB treatment. The other two remaining one initiated on Drug Resistant TB and one died before treatment initiation. The project initiated **130** children on treatment for latent TB infection, preventing them from developing active TB disease that would otherwise cause morbidity or mortality.

**TABLE 1. TB screening and diagnostic cascade by entry points, April-December 2019**

<table>
<thead>
<tr>
<th>Turkana County Health Care Delivery Sites</th>
<th>Outpatient</th>
<th>Maternal, Neonatal and Child Health</th>
<th>Nutrition Wards</th>
<th>In Patient Department</th>
<th>TOTAL</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workload (clinic attendees)</td>
<td>10,524</td>
<td>18,020</td>
<td>3,581</td>
<td>2,087</td>
<td>34,212</td>
<td>—</td>
</tr>
<tr>
<td>Screened for TB</td>
<td>8,849</td>
<td>16,966</td>
<td>2,135</td>
<td>1,494</td>
<td>29,863</td>
<td>86%</td>
</tr>
<tr>
<td>Presumptive TB (n)</td>
<td>337</td>
<td>61</td>
<td>9</td>
<td>125</td>
<td>568</td>
<td>2%</td>
</tr>
<tr>
<td>Confirmed TB</td>
<td>102</td>
<td>20</td>
<td>0</td>
<td>86</td>
<td>214</td>
<td>38%</td>
</tr>
<tr>
<td>% Confirmed TB</td>
<td>29%</td>
<td>33%</td>
<td>0%</td>
<td>69%</td>
<td>38%</td>
<td>—</td>
</tr>
<tr>
<td>Started on TB Treatment</td>
<td>102</td>
<td>20</td>
<td>0</td>
<td>84</td>
<td>212</td>
<td>99%</td>
</tr>
</tbody>
</table>

*Source: CaPTB PowerBi Dashboard (Turkana)*

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1 five children from HIV contact tracing
OUR IMPLEMENTING PARTNERS IN TURKANA COUNTY

With the support of CaP TB project and other implementing partners, EGPAF works with local partners in the county who coordinate HIV/TB activities in the supported health facilities. They include the following:

- **Turkana County MOH**: Support human resources working in all departments where TB screening is ongoing. Gene Xpert machine is hosted by Loping sub-County Hospital and fridges for sample storage in all TB supported sites.

- **Diocese of Lodwar**: Owners of Lowarengak dispensary, an INPUT study site integrating TB activities in all entry points. CaP TB also supports a cough monitor and study nurse.

- **AIC Lokichogio HC**: INPUT study site integrating TB activities in all entry points; CaP TB also supports a cough monitor, study nurse, and placement of genexpert machine.

- **Kakuma Mission Hospital**: INPUT study site integrating TB activities in all entry points; CaP TB also supports a cough monitor and study nurse.

- **Hiring of Laboratory advisor** to coordinate with the County Government to ensure smooth implementation of the CaP TB program including getting county buy in, conducting joint supportive supervision, sharing progress reports with the county and coordinating with other stakeholders and sputum networking, forecasting for cartridges to prevent stock outs.

OUR PARTNERS & DONORS

- Turkana County Government
- Unitaid
- Global Fund AMREF
- Kenya National Tuberculosis, Leprosy and Lung Disease Program
- Center for Health Solutions (CHS-TB ARC II)

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