Impact of decentralisation of childhood TB diagnosis to district hospitals and primary health centers; Example from Uganda

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Background

Childhood tuberculosis is underdiagnosed at low-level healthcare settings because of poor access to specimen collection, rapid molecular testing, clinical evaluation and chest radiography. Decentralizing childhood tuberculosis diagnosis at district hospital (DH) and primary health centre (PHC) levels could improve case detection.

Methods

TB-Speed decentralisation is an operational research using a pre-post intervention cross-sectional design in 12 DHs and 47 PHCs of 12 districts in Cambodia, Cameroon, Côte d'Ivoire, Mozambique, Sierra Leone and Uganda. The intervention included a comprehensive childhood tuberculosis diagnosis package consisting of systematic tuberculosis screening for all under-15-year-old sick children, clinical evaluation, Xpert Ultra-testing on one nasopharyngeal aspirate (NPA) and stool samples, and chest radiography for children with presumptive tuberculosis, using either PHC-focused or DH-focused decentralization approaches. We collected aggregated and individual data for children whose parents consented. We present the comparison of the proportion of tuberculosis case detected pre-intervention from August 2018 to Nov 2019 versus post-intervention from March 2020 to September 2021, overall and by decentralization approach, and the uptake and acceptability of the diagnostic package in Uganda.

Findings

In Uganda, 52233 and 46035 children attended care pre-intervention versus post-intervention respectively. 26/52233 (0.05%) and 42/46035 (0.09%) children were diagnosed with tuberculosis pre-intervention and post-intervention respectively, p-value=0.114. In DH-focused district, it was 10/24208 (0.04%) and 23/17914 (0.1%) pre-intervention and post-intervention respectively, and 16/28025 (0.06%) and 19/28121 (0.1%) for PHC-districts, respectively. The uptake of TB screening was 43104/46035 (93.6%) overall, among the 732 enrolled children 724/ and 532 had a valid Ultra result using NPA and stool, respectively. Health care workers overall experienced decentralized childhood TB diagnostic as acceptable, with NPA and stool sample collection feasible both at DH and PHC.

Conclusion

Decentralizing innovative childhood tuberculosis diagnosis can increase tuberculosis case detection with limited impact when using the PHC decentralization approach.

Although decentralizing childhood TB diagnosis is acceptable, overcoming feasibility issues may improve the effective implementation and scale-up of such interventions at low levels of care.