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STRENGTHENING CHILDHOOD TB MANAGEMENT IN NEPAL: CHALLENGES, PROGRESS AND LESSON LEARNED

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ABSTRACT

Introduction: Childhood tuberculosis has always been in shadows as Nepal's Tuberculosis Program focused mainly on adults TB resulting in under diagnose with less than 10% of total TB cases notified. Lack of political commitment; absence of guideline and working group, qualified health personnel and diagnostics tool were major implementation challenges.

Methodology: Assessment of childhood TB program was done and critical gap were identified. Childhood TB was prioritized in National TB strategic plan (2016-21). Collaborate with both international and national child experts, public and private organizations to develop guideline, building capacity of health care providers and establishing national working group. Childhood TB focused interventions were implemented in 40 high burden districts since March,2017 focusing on contact tracing, diagnosis, Prevention Therapy, malnourished children in the community and major hospitals.

Results : Political commitment and multi-sectoral involvement, to manage childhood TB was achieved. A total of 93 doctors were trained in the Childhood TB management training and were identified as focal persons to manage childhood TB in their respective regions. Child focused intervention from March 2018-19 resulted in the diagnosis of 521 TB cases among 38,987 malnourished children and 1,764 children were enrolled under TPT after contact tracing of 59,742 family members. With political commitment, prioritization of childhood TB, collaboration of both government and non-government sectors and interventions focusing childhood TB, a significant achievement can be attained in childhood TB management.

Conclusion: Nepal has shown childhood TB management program can be strengthen if NTP prioritizes it, child focused interventions are implemented and collaborate with Child health division, pediatrics association, other government and non-government organizations to increase and strengthen the program.

Keywords: Childhood Tuberculosis, National Tuberculosis Program, Malnourished, Tuberculosis preventive therapy

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INTRODUCTION

Tuberculosis (TB) remains as a major public health problem in Nepal, as it is responsible for ill health among thousands of people each year. TB also ranks as the sixth leading cause of death in the

country. It is estimated that 44,000 new TB cases occur and 5000-7000 deaths each year due to TB.[1] Despite the efforts there is unacceptable low rate of decline in incidence rate of TB.

Childhood tuberculosis has been neglected as Nepal's Tuberculosis Program focused on adult TB, resulting in under diagnose, with less than 10% of total TB cases notified being children (Figure 1). The major gap observed was lack of political commitment, absence of childhood focused NTP.

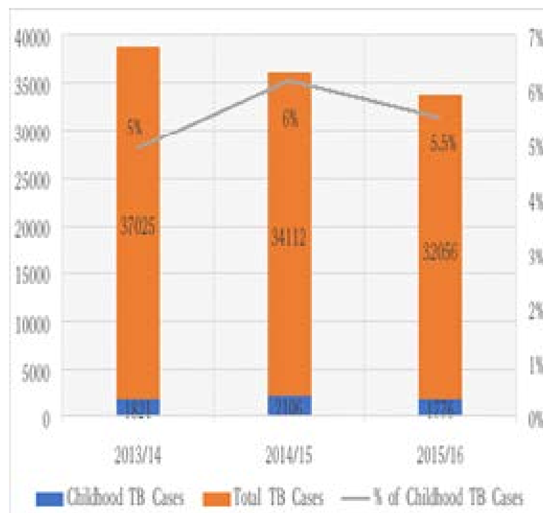

Figure 1: Situation of childhood TB in Nepal [2]

METHODOLOGY

Action taken by National Tuberculosis Program to prioritize Childhood TB management in Nepal are:

2.1 Political commitment and National Priority: The National Strategic Plan for Tuberculosis Prevention and Care (2016-21) has prioritized childhood TB with an objective to increase case notifications among children to at least 10% by 2020.

2.2 Assessment of Childhood TB program: Overall assessment of Childhood TB was done using KNCV Benchmarking Tool for Childhood TB Policies, Practices and Planning. This benchmarking tool is based on the WHO 'Framework for conducting reviews of tuberculosis programmes – Assessing activities to address childhood TB' and the Second Edition of the WHO Guidance for National Tuberculosis Programmes on the management of tuberculosis in children (2014).

The overall findings of the assessment are summarized in the Table below. This assessment was help for nation to prioritize the area and allocate the resource accordingly.

The major gaps identified by the mission were following:

- Evidence of political commitment for childhood TB was partially met
- No active national working group on childhood TB
- No national guidance for childhood TB
- No effective technical assistance for childhood TB
- The childhood TB strategy is not implemented
- National policies does not provides guidance for all providers of Paediatric care are involved in diagnosis, prevention and treatment of childhood TB
- Providers of Paediatric care are not involved in diagnosis, prevention and treatment of childhood TB
- Investigation of child contacts of infectious TB patients is not implemented
- Eligible children does not have access to preventive treatment
- There is not special approaches for diagnosis of DR TB in children are included in the national guidance on TB
- The national treatment guidelines for TB and MDR TB does not have appropriate and specific adjustments for children
- The national treatment strategy of children is not universally accessible for children
- Data on childhood TB are not fully available and used at the NTP
- There is no plan for human resource capacity building for childhood TB

2.3 Development of National first Childhood TB guideline and manual involving NEPAS:

With help of one International Childhood TB expert Nepal developed its first Childhood TB Guideline and Training manual which was in line with WHO recommendation. Both of these documents were finalized with the help of Nepal Pediatrics Associations (NEPAS). This collaboration between NEPAS and NTP is also first time and have brought NEPAS along with their 200 Pediatricians under NTP umbrella.

2.4 Establishing Childhood TB focal person at central level and have NEPAS in National Technical working group for TB management

2.5 Capacity building of health care providers on management of Childhood TB:

There was a clear gap identified among the health care providers to diagnose and treat childhood TB. To address this gap training on childhood TB was panned and based on that training manual and training plan specifically for Childhood TB was developed. The training manual was developed in line with WHO recommendation and in close coordination of NEPAS.

2.6 Training of Health care providers

2.6.1 Masters Training of Trainer for management of TB: As there was a clear capacity gap among health care providers to identify, diagnose, treat and prevent childhood TB so series of training was planned. Initially a group of master trainer was developed by conducting Masters Training of Trainer (mTOT). Twenty one pediatricians from all over the Nepal covering all seven provinces were identified in collaboration with NEPAS and trained. This training have developed group of trainer which will be involved in training other health care providers as well as manager childhood TB.

2.6.2 Regional Level Training: Using the master trainers series of Childhood TB management trainings were conducted at Provincial level. The training was conducted among Pediatricians, General Practitioners (GPs), and Medical officer of referral hospital for management of Childhood TB.

2.7 Childhood TB focused intervention in High TB burden districts:

2.7.1 Contact tracing: Previously National TB program was focused on passive case finding where presumptive TB cases identified in health care setting was further screened for TB. There was no active case finding activities among the contact of bacteriologically confirmed cases. Realizing this gap NTP implemented contact tracing of all household members of PBC (full form??) cases in 38 of the high TB burden districts of Nepal which carries 75% of total TB cases notified (Fig. 2). This intervention was initiated from early 2017. During contact tracing all household members of PBC cases were screened based on symptoms. This also included all the children in those households. Anyone who was found to be symptomatic on screening was then referred for further diagnosis and for those children under 5 years of age who did not have any symptoms was referred for initiation of TB Preventive Therapy (TPT).

Figure 2: Contact tracing districts

2.7.2 Screening among malnourished child:

Wasting (measured by low weight for height compared to the WHO reference population) has remained nearly unchanged over the last decade in Nepal; 11 per cent in 2001, 13 per cent in 2006; and 11 per cent in 2011. As per the WHO decision making criteria, wasting prevalence is at a critical level in Nepal, affecting an estimated 430,000 children under five years of age at any point in time. Nearly, 2.6 per cent or 91,000 under-five year

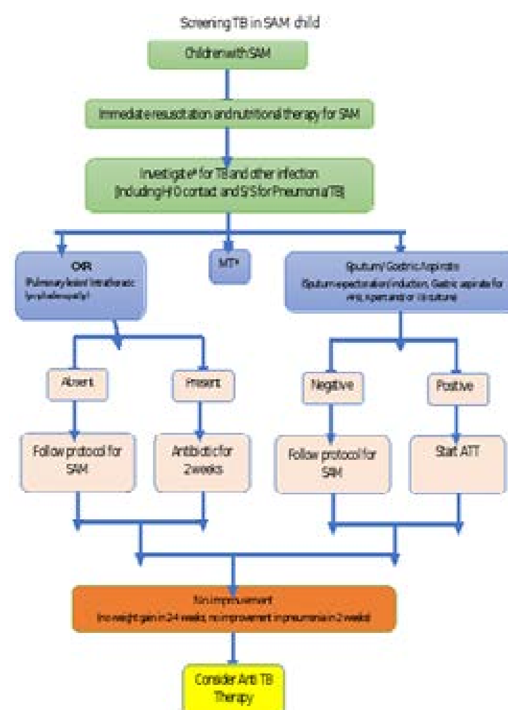

Figure 3: TB screening among SAM children

old children in Nepal are suffering from severe acute malnutrition (SAM). Most of these children are not likely to survive unless they are identified and treated in a timely and effective manner. A further 8.3 per cent, or 290,000 under-five year old children in Nepal, are suffering from moderate acute malnutrition (MAM)[3]. As malnourished child are on high risk of developing TB, as well as one of the sign of TB screening among malnourished children (SAM and MAM) was initiated from early 2017 in 29 high burden districts of both TB and PEM cases. Malnourished children were never screened for TB before. Figure 3 show algorithm to screen TB among SAM children.

2.7.3 Referral cost and diagnostic cost for diagnosis of childhood TB:

Since childhood TB cannot be diagnosed in peripheral health facility where there is no capable human resource as well as instrument, the presumptive TB children cases needs to be referred at hospital where there is a trained health staff. So, NTP have provided referral cost as well as diagnostic cost for all the presumptive childhood TB cases.

2.7.4 Tuberculosis Preventive Therapy:

TPT was also initiated among children under 5 who are contact of PBC cases in districts with contact tracing who are ruled out of having active TB. Figure 4 shows steps to initiate TPT.

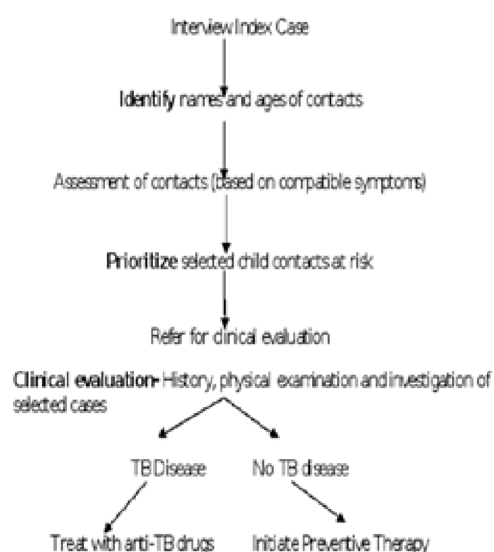

Figure 4. Step to initiate TPT

2.7.5 Procurement of Childhood friendly TB regimen:

New fixed-dose combinations for the treatment of TB in children have been procured. This is an important step in improving treatment and child survival from TB, and slowing the spread of drug resistant TB. Child-friendly medicines improve the daily lives of children and their families struggling with TB. Six months is a long time to take medicine. But the availability of treatment that tastes good and is simple to provide will ease the daily struggles of children, parents, and caregivers alike.

RESULTS

3.1 Status of Gap identified during assessment of Childhood TB program:

Most if the major gaps identified are either fully met or partially met and the current status is shown in the table no1. It is seen that the three gaps which was not met previously have met which include national guidance for childhood TB, investigation of childhood contacts of infectious TB patients is part of the national strategy

Investigation of child contacts of infectious TB patients is fully implemented and special approaches for diagnosis of TB in children are included in the national guidance on TB. Three gaps those are partially met was met fully which are effective technical assistance for childhood TB, national treatment guidelines for TB and MDR TB have appropriate and specific adjustments for children and child friendly formulations are available.

3.2 Development of childhood TB experts:

A total of 93 doctors were trained in childhood TB management training and they became focal persons to manage childhood TB in their respective regions.

3.3 Total achievement of childhood TB focused intervention

Childhood TB focused interventions were introduces in 40 high burden districts of Nepal from

Table 1: Status of Gaps identified during assessment of Childhood TB Program		
Standard	**Gap Identified in Feb 2017**	**Current Status in Feb 2019**
There is evidence of political commitment for childhood TB	Partially Met	Partially Met
There is an active national working group on childhood TB	Not Met	Partially Met
There is national guidance for childhood TB	Not Met	Met
There is effective technical assistance for childhood TB	Partially Met	Met
The childhood TB strategy is fully implemented	Not Met	Partially Met
National policies provide guidance for all providers of Paediatric care are involved in diagnosis, prevention and treatment of childhood TB	Not Met	Partially Met
All providers of Paediatric care are involved in diagnosis, prevention and treatment of childhood TB	Not Met	Partially Met
Investigation of childhood contacts of infectious TB patients is part of the national strategy	Not Met	Met
Investigation of child contacts of infectious TB patients is fully implemented	Not Met	Partially met
The national strategy provides for preventive treatment of eligible children	Partially Met	Partially Met
All eligible children have access to preventive treatment	Not Met	Partially Met
Special approaches for diagnosis of TB in children are included in the national guidance on TB	Not Met	Met
Special diagnostic approaches for TB in children are applied	Not Met	Partially Met
The national treatment guidelines for TB and MDR TB have appropriate and specific adjustments for children	Partially Met	Met
Child friendly formulations are available	Partially Met	Met
The national treatment strategy of children is universally accessible for children	Partially Met	Partially Met
Data on childhood TB are available and used at the NTP	Partially Met	Partially Met
There is a plan for human resource capacity building for childhood TB	Partially Met	Partially Met
The NTP and partners deploy specific initiatives to promote a patient and family centered approach in childhood TB care	Partially Met	Partially Met

Child focused interventions from March 2018-19 resulted in TB diagnosis of 521 TB cases among 38,987 malnourished children, 1,764 children were started on IPT after contact tracing of 59,742 family members. In the year 2018 the childhood TB diagnosed was 5.5% of total case notified.

CONCLUSION

Nepal has shown that childhood TB management can be strengthened when it becomes a priority. Intervention that pay attention on child TB can be implemented in collaboration with the ministry's Child health division, pediatrics association, other government and non-government organizations to increase and strengthen the program. Contact tracing needs to focus on children. Malnourished child needs to be targeted in country like Nepal where there is high burden of malnutrition. Program needs to focus on capacity building of health care providers as diagnosis of childhood TB is challenge

ACKNOWLEDGEMENT

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CONFLICT OF INTEREST

None

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