Barriers and solutions to finding rifampicin-resistant tuberculosis cases in older children and adolescents

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Little is known about the barriers to post-exposure management of rifampicin-resistant tuberculosis (RR-TB) in older children and adolescents. We report on implementation lessons from a pilot programme targeting household-exposed individuals aged 6–18 years in Khayelitsha, South Africa. Barriers included misperceptions regarding risk of exposure, multiple research and implementation stakeholders, additional workload for an overloaded healthcare system, logistical issues faced by families, and insufficient human and financial resources. Solutions to these barriers are possible, but creativity and persistence are required. Our experience can guide others looking to roll-out care for children and adolescents exposed to RR-TB.

RESULTS

Only 10% of the eligible contacts participated in the pilot programme. A number of barriers were identified. These included 1) misperceptions by healthcare workers and guardians regarding household exposure risk in older children (risk perceived as low); 2) multiple research and implementation stakeholders in the programme setting, leading to difficult engagement and poor buy-in of healthcare facilities (too many research studies with minimal collaboration between different research teams); 3) additional workload for an already overburdened healthcare system, leading to a lack of endorsement; 4) potential exposure of healthy children to sick individuals in the healthcare facilities (lack of triaging and child-friendly preventive services); 5) logistical issues faced by families in navigating screening and diagnostic pathways (too many steps involved); 6) children and guardians required to miss school and work in order to attend the healthcare facility for TB screening (lack of child-friendly services); and 7) insufficient human and financial resources to ensure pilot programme success.

The real-time problem-solving strategies that were identified included engagement in health promotion and educational activities for the community and medical staff, focusing on the risks of TB among this population; collaboration among the various stakeholders involved in the programme setting to ensure
streamlining of activities; opening of afterhour and/or weekend (mobile) clinics targeted at providing TB screening during hours that are more convenient for older children and adolescents, and their families; employment of community healthcare workers to conduct follow-up screenings at the household level; promotion of and engagement in school-based TB screening initiatives that ensure the strengthening of the links between the Departments of Health and Education in order to encourage school-based TB screening; and advocacy to secure the necessary personnel, equipment and funding for programme implementation to ensure that the model of service delivery is feasible (Table).

MSF is currently working jointly with the Health Departments of the Province of the Western Cape and the City of Cape Town to ensure that this model is adapted to best suit the needs of the population and communities it is meant to serve, while making use of the existing resources. Possible collaboration with other stakeholders in Khayelitsha is being investigated and the possibility of afterhours/weekend clinics for contacts aged 6–18 years is being proposed. Furthermore, health promotion strategies are being devised in order to ensure TB risks in this population are understood.

**CONCLUSIONS**

Urgent implementation of active case finding among persons exposed to RR-TB in their households was challenging due to various barriers to implementation. While what is described here comes from a small population living in an urban township, thus limiting its generalisability to other populations, our findings may help other programmes address similar barriers more rapidly to ensure optimal implementation of case finding activities in this population. Older children and adolescents should be prioritised in RR-TB case finding activities, but tailored strategies are needed to reach this population. It is hoped that our experience in Khayelitsha with this population can guide others looking to roll-out best practices for children and adolescents exposed to RR-TB.

**TABLE** Barriers encountered during the implementation of the rifampicin-resistant tuberculosis active case finding strategy along with possible solutions to overcome barriers

<table>
<thead>
<tr>
<th>Number</th>
<th>Barriers</th>
<th>Involved sector</th>
<th>Possible solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Misperceptions by healthcare workers and guardians regarding household exposure risk in older children</td>
<td>Health system, Community, Individual</td>
<td>Health promotion initiatives and sensitisation of the community and medical staff focusing on the risk of TB among this age group</td>
</tr>
<tr>
<td>2</td>
<td>Multiple research and implementation stakeholders in the programme setting, leading to difficult engagement and poor buy-in of healthcare facilities</td>
<td>Health system, Research community</td>
<td>Collaboration among stakeholders in order to streamline activities</td>
</tr>
<tr>
<td>3</td>
<td>Additional workload for an already overburdened healthcare system</td>
<td>Health system</td>
<td>Afterhours and/or weekend mobile TB screening clinics for contacts aged 6–18 years Community healthcare workers to do follow-up screenings in the contact’s household</td>
</tr>
<tr>
<td>4</td>
<td>Potential exposure of healthy children to sick individuals in the healthcare facilities</td>
<td>Health system, Individual</td>
<td>Afterhours and/or weekend mobile TB screening clinics for contacts aged 6–18 years</td>
</tr>
<tr>
<td>5</td>
<td>Logistical issues faced by families in navigating screening and diagnostic pathways</td>
<td>Health system, Community, Individual</td>
<td>Community healthcare workers to do follow-up screenings in the contact’s household</td>
</tr>
<tr>
<td>6</td>
<td>Children and guardians obliged to miss school and work in order to attend the healthcare facility for TB screening</td>
<td>Health system, Community, Individual</td>
<td>Afterhours and/or weekend mobile TB screening clinics for contacts aged 6–18 years School-based TB screening initiatives Strengthening links between the Departments of Health and Education to promote school-based TB screening</td>
</tr>
<tr>
<td>7</td>
<td>Insufficient human and financial resources to successfully implement the pilot programme</td>
<td>Health system, Programme implementer</td>
<td>Advocate for and secure necessary personnel, equipment and funding for programme implementation Ensure that the model of service delivery is feasible with the given resources</td>
</tr>
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</table>

Post-exposure management for older children and adolescents exposed to RR-TB in their households was challenging due to various barriers to implementation. While what is described here comes from a small population living in an urban township, thus limiting its generalisability to other populations, our findings may help other programmes address similar barriers more rapidly to ensure optimal implementation of case finding activities in this population. Older children and adolescents should be prioritised in RR-TB case finding activities, but tailored strategies are needed to reach this population. It is hoped that our experience in Khayelitsha with this population can guide others looking to roll-out best practices for children and adolescents exposed to RR-TB.

**References**

On connaît mal les entraves à la prise en charge post-exposition de la tuberculose résistante à la rifampicine (RR-TB) chez les enfants plus âgés et les adolescents. Nous rapportons les leçons de la mise en œuvre d’un programme pilote ciblant les individus exposés dans leurs foyers, âgés de 6–18 ans, à Khayelitsha, Afrique du Sud. Les obstacles ont inclus des perceptions erronées à propos du risque d’exposition, la multiplicité des partenaires de recherche et de mise en œuvre, la charge de travail supplémentaire pour un système de santé déjà surchargé, les problèmes logistiques auxquels sont confrontées les familles, et l’insuffisance des ressources humaines et financières. Il y a des solutions possibles à ces obstacles mais elles demandent de la créativité et de la détermination. Notre expérience peut guider ceux qui veulent lancer la prise en charge des enfants et des adolescents exposés à la RR-TB.

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Se conoce poco sobre los factores que obstaculizan la atención después de la exposición a un caso de tuberculosis resistente a rifampicina (RR-TB) en los niños mayores y los adolescentes. En el presente artículo se describen las enseñanzas aprendidas durante la ejecución de un programa piloto dirigido a los contactos domiciliarios expuestos entre los 6 y los 18 años de edad, en Khayelitsha, Sudáfrica. Entre los obstáculos observados se pueden citar las percepciones equivocadas sobre el riesgo de exposición, la multiplicidad de interesados directos en la investigación y la ejecución, la carga de trabajo adicional en un sistema de salud sobresaturado, los problemas organizativos afrontados por las familias y la insuficiencia de recursos humanos y de financiamiento. Las soluciones a estos problemas son posibles, pero exigen creatividad y persistencia. Esta experiencia puede orientar a otros equipos que intenten poner en marcha la atención de los niños y los adolescentes expuestos a la RR-TB.

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