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The effect of decentralized services on multidrug-resistant tuberculosis care in sub-Saharan Africa: a systematic review

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Title: The Effect of Decentralized Services on Multidrug-resistant Tuberculosis Care in Sub-Saharan Africa: A Systematic Review

Abstract

Introduction

MDR-TB is tuberculosis caused by *Mycobacterium tuberculosis* strains which are resistant to the main anti-TB drugs, rifampicin and isoniazid. Potential approaches for MDR-TB care exist, i.e. centralized and decentralized approaches. A centralized approach is one whereby, MDR-TB patients are treated as inpatients (i.e. remaining over night or more than one night in hospitals) in designated, specialized DR-TB treatment facilities. Decentralized MDR-TB care, on the other hand, is defined as management (treatment and care) of MDR-TB provided at the community where the patient resides. The two approaches allow different levels of accessibility to MDR-TB services by patients. However, there are few data available examining the levels of accessibility between the two approaches. Accessibility of services can be measured in terms of utilization and cost of these services. This study aims to examine the effect of decentralizing MDR-TB care on the accessibility (utilization and cost) of services and patient treatment outcomes in sub-Saharan Africa through a systematic synthesis of literature.

Methodology

A systematic review of published studies conducted within sub-Saharan Africa (SSA) where nine out of thirty high MDR-TB burdened countries are located was conducted. Inclusion criteria were observational studies (cohort, case-control and cross-sectional) or interrupted time series conducted between 2011 and 2021. These studies had to compare the utilization and/or cost of MDR-TB services and/or treatment outcomes (treatment success, loss to follow up, death and treatment failure) between decentralized and centralized approaches to MDR-TB care. Five databases (PubMed, Cochrane library, Global health, Scopus and Global Index Medicus (WHO)) were searched using keywords to identify studies for inclusion. Quality assessment of included studies was conducted using the Effective Public Health Practice Project (EPHPP) tool for observational studies and the CHEERS checklist for economic evaluation studies. Study selection and quality assessment was conducted by two reviewers (Principal Investigator and a second reviewer).

Results

Twelve studies met the eligibility criteria for inclusion. Four studies were cohort studies, five were cost-analyses, two were interrupted time series and one was a cross-sectional study. Findings from this study have demonstrated that decentralization of MDR-TB care in SSA has improved accessibility of patients to the services through increase in utilization of MDR-TB services. The volume of patients utilizing both diagnostic and treatment services has increased in all countries represented by the studies. Decentralizing MDR-TB services has also improved accessibility of MDR-TB services through the reduction of MDR-TB treatment cost. Increased successful treatment as well as reduction in patients who are lost to follow up have also been shown to be outcomes of decentralizing MDR-TB treatment services within sub-Saharan Africa.

Conclusion

Decentralizing MDR-TB services enables more MDR-TB patients to utilize diagnostic and treatment services. This approach is also related to lower service delivery costs than a centralized approach, which is beneficial in resource limited settings such as those in SSA. Countries in SSA can achieve and maintain high MDR-TB treatment success when using decentralized approaches than centralized approaches. This is also true to the retention of MDR-TB patients in care.