

MODULE: INTRODUCTION TO PUBLIC HEALTH
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1.0 INTRODUCTION

The public's health in the UK is still seriously threatened by the deadly infectious disease tuberculosis (TB), which is caused by the *Mycobacterium tuberculosis* bacteria. To lower the prevalence of TB, a variety of methods and strategies have been attempted, including early diagnosis and treatment, contact tracing, screening programmes, and vaccine (Nafade, et al., 2018). The number of TB cases reported in England in 2020 decreased by 21%, based on the data that is currently available (Wingo et al., 2020). In the UK, the prevalence of TB has decreased during the past ten years. However, TB still represents a significant health concern for other populations, including those who were not born in the UK and those who reside in low-income areas (Glaziou et al., 2018). Continuous work is needed to measure, track, and restrict the spread of the disease in order to totally eradicate it in the UK.

2.0 EVALUATION OF STRATEGIES USED IN THE UK TO MEASURE TUBERCULOSIS INCIDENCE

The UK has put in place a number of initiatives to track the prevalence of tuberculosis (TB) among the populace.

1. Tuberculosis Surveillance System: The UK has a recognised national TB surveillance system that gathers information on the number of cases, demographics, and other pertinent data (WHO 2021). This approach aids in identifying TB risk factors and tracking trends. The fact that this strategy depends on healthcare professionals to record cases, and not all cases may be reported, should be noted (Tweed and Nunn 2018). This might cause the true incidence of TB to be underestimated.
2. TB Screening Programmes: According to Pareek et al. (2016), the UK has introduced focused screening programmes for high-risk populations, such as those who were born in nations with a high TB burden and those who were in close proximity to TB cases. Such efforts have been successful in finding fresh cases and curtailing the spread of TB. However, some high-risk populations might not be reached by these programmes, and other people might opt out of screening, which would result in missed cases.
3. Contact Tracing: In accordance to the Joint Tuberculosis Committee of the British Thoracic Society (2000), contact tracing is a crucial component of TB control and entails locating and testing people who have had frequent contact with TB cases. In order to find new cases of TB and stop its spread, the UK has a well-established contact tracing system (Glaspy et al., 2021). However, contact tracing can be time- and resource-consuming, and some contacts might get lost in the process.

4. Laboratory diagnostics: According to Migliori et al. (2020), there is a network of public health laboratories in the UK that provide TB diagnostic testing. To diagnose TB, these laboratories employ a variety of techniques, such as nucleic acid amplification and culture. However, these tests' sensitivity and specificity can differ, and false negatives or positives can happen.

3.0 ANALYSIS OF UK STRATEGIES USED TO MONITOR THE INCIDENCE OF TB IN THE UK

The UK has put in place a number of measures to track the prevalence of tuberculosis (TB) among the populace. A review of some of these tactics is provided here:

1. National Tuberculosis Register: The UK keeps a database of all diagnosed cases of TB called the National Tuberculosis Register (Gafar et al., 2019). As stated by Gafar et al. (2019), this register offers data on demographics, disease features, and treatment outcomes. However, not all cases may be included in the register, particularly those diagnosed outside of the NHS, and some cases may be incomplete or incorrectly categorised.

2. Sentinel Surveillance: The UK monitors TB cases in particular regions or groups as part of sentinel surveillance (Cragg and Rudge 2018). This strategy can offer more thorough details on the epidemiology of TB in certain regions or populations. Sentinel sites may not be fully representative, and data may not be transferable to a larger population (Richardson et al., 2022).

3. Molecular Epidemiology: The UK looks into the spread of TB using molecular epidemiology methods including DNA fingerprinting (Tümmler 2020). This method can be used to spot TB outbreaks and monitor their spread (Tümmler, 2020). However, these methods need a lot of resources and might not be available everywhere (Smith et al., 2021).

4. Drug Resistance Surveillance: Based on Lan et al. (2019), the UK monitors drug-resistant tuberculosis by testing TB isolates for drug resistance. Using this strategy, treatment choices can be guided and the formation of drug resistance can be monitored. Drug resistance testing, however, might not be accessible for all TB cases, particularly those in high-burden or low-income environments (Zürcher et al., 2019).

4.0 ANALYSIS OF THE UK'S STRATEGIES FOR CONTROLLING THE INCIDENCE OF TB IN THE UNITED KINGDOM

The UK has put in place a number of measures to reduce the prevalence of tuberculosis (TB) among the populace.

1. Early TB Diagnosis and Treatment: Preventing the spread of the disease requires early TB diagnosis and treatment. The UK has put into practise recommendations for diagnosing and treating TB, including quick tests and the supply of suitable treatment regimens (WHO 2021). Ongoing TB transmission, however, can result from delays in diagnosis and treatment, particularly in high-risk populations.

2. Addressing Social Determinants: According to Duarte et al. (2020), migration, poverty, and overcrowding are all social determinants of health that are directly related to TB. By addressing these underlying causes, TB incidence might be decreased. This includes actions like enhancing housing quality, lowering economic inequality, and offering assistance to vulnerable groups (Hayward et al., 2019).

3. Immunisation: According to Maltezou et al. (2019), the UK provides vaccine against TB to high-risk populations such as infants and healthcare workers. The BCG vaccination has a low efficacy against pulmonary TB in adults, but it has been demonstrated to be beneficial in avoiding severe forms of TB in children (WHO 2018). Additionally, some groups might not have optimal vaccination coverage.

4. Increasing Healthcare Worker Training: According to Sima et al. (2019), proper diagnosis, treatment, and management of TB cases are essential for TB control. The UK offers healthcare professionals training and education on TB management and infection control strategies (Tan et al., 2020).

5.0 CONCLUSION

The incidence of tuberculosis in the UK has been measured, monitored, and controlled using a variety of methods and tactics. Early diagnosis and treatment, contact tracing, screening initiatives, and vaccination are a few of these. Although the incidence of TB has significantly decreased over the past ten years, it is still a serious public health concern in some groups. Therefore, ongoing initiatives are required to eradicate this illness in the UK.

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