

The UK's response to global tuberculosis



**All-Party Parliamentary Group on
Global Tuberculosis**

Report of the All-Party Parliamentary Group on Global Tuberculosis's inquiry into the UK's role in controlling TB worldwide

This report was written by the APPG on Global Tuberculosis's Coordinator, Mike Smith, in close consultation with the APPG Chair and other Officers. Results UK (a charity) is funded by Genus Pharmaceuticals Ltd to independently act as the group's secretariat.

The photograph on this front cover was kindly supplied by Target TB. It features as part of the 'Hope: Stories from India' exhibition.

Foreword



Andrew George MP
Chair, APPG on
Global Tuberculosis

Tuberculosis (TB) is a global disease which despite being preventable, treatable and curable, every year kills 1.7 million people. Rates of TB are falling at a frustratingly slow pace and due to population growth there are now more than 9 million new cases of TB each year.

TB is most likely to affect people during their economically productive years and is both a cause and a consequence of poverty. Poor nutrition and cramped living conditions are major risk factors in becoming sick with TB. Morbidity and death means not only personal physical suffering but also the loss of work and income.

Nearly a quarter of all HIV-related deaths are due to tuberculosis. As HIV weakens the immune system, TB is most often the infection which if untreated results in death. In southern and eastern Africa more than 50% of TB patients are estimated to be infected with HIV. One of the leading causes of mortality in women of reproductive age, TB causes the death of 700,000 women each year. Worryingly, the last few decades have seen the emergence of hundreds of thousands of cases of multi-drug resistant tuberculosis each year, which is much more costly and difficult to treat.

This report identifies the main challenges facing the world in controlling TB and makes constructive recommendations for how the UK can best focus its efforts. Progress is being made, and DFID has played an important part in this. With a renewed effort, focussed on key areas where the biggest impact can be made, the UK can make a significant contribution to international targets to halve TB deaths by 2015.

Tuberculosis is an issue of global proportions and is directly related to many of DFID's priorities around women's health and focussing efforts on the poorest people and the poorest countries. The suffering caused by the global TB pandemic is preventable. This report outlines some of the ways that the UK can best play its part in international efforts to control this disease.

A handwritten signature in blue ink, appearing to read 'Andrew George'.

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Executive summary of recommendations

This report seeks to identify the major challenges to tackling global tuberculosis and the way the UK Government can respond to this. It makes five key recommendations for how Britain could most effectively use its resources to support global efforts towards TB control. The five key recommendations are:

Recommendation 1A:

Develop and promote models of community and patient-centred TB care and control, built around strong health systems

DFID sees system-wide strengthening of health as an area in which it has a comparative advantage. The Department currently funds operational research projects on community level programmes. DFID should continue to support the development of appropriate models of community level programmes for TB control, and promote these successful models to governments and other development partners.

Developing models of TB care and control which empower communities and better support individuals are important. However, a patient-centred approach to TB control goes beyond the point of patient care. Integrating patient-centred approaches across all levels of TB control from the front-line to strategic planning could bring real benefits to TB control. DFID should consider the role it can play in promoting a patient-centred approach at all levels.

Recommendation 1B:

Promote integration of TB control within wider health services

DFID should encourage integration of TB control into HIV, maternal health, and other relevant programmes with appropriate attention and investment in infection prevention.

The Department should also include TB control measures in all relevant policy papers they produce. For example, The Choices for Women Framework for Action published by the Department in December clearly places strengthening women's and maternal health within a framework of broad health system strengthening. Within this, it is important that TB is seen as a priority and progress towards its control is adequately measured. TB does not feature in the Monitoring and Evaluation Framework for the report.ⁱ

DFID should also continue to fund operational research on integration, especially considering how TB control can effectively be integrated with wider health services.

Recommendation 2:

Priority investment in research for new tools

DFID currently supports research and development for a number of tools to tackle TB and has a strong record in funding operational research. Its record in this area is generally respected and funding should continue.

DFID provides £5m for the Foundation for Innovative New Diagnostics (2009 – 2014) and £14m for the WHO Special Research Programme in Tropical Disease Research (2008 - 2013). Given the issues surrounding low diagnosis rates, DFID should continue and consider expansion of its funding for diagnostics, especially on funding research into point of care diagnostic tests.

The UK has contributed over £35million for the period 2005 – 2016 for operational research which includes, but is not limited to, TB services. The revised Global Plan to Stop TB 2011 – 15 calls for \$400million of international funding for operational research during this five year period. DFID should continue and expand funding for operational research. Findings from operational research could be disseminated through the WHO/ Stop-TB Partnership's Research Movement.

Recommendation 3:

DFID annual assessment of its contribution towards TB control

The next six months will be an important time for DFID to consider the structures they will use to ensure TB receives sufficient resources and attention within wider health policy. The WHO revised Global Plan to Stop TB 2011 – 2015 was published in October 2010 and DFID has stated in its 2011 – 2015 Business Plan that it will set out its objectives on restricting the spread of major diseases like TB by May 2011.ⁱⁱ Including an annual assessment of the UK's contribution towards TB control in this Business Plan will allow better assessment of progress towards these targets.

Recommendation 4:

Coordination of TB advocacy

DFID financially supports the work of the Stop TB Partnership.ⁱⁱⁱ This support should continue and DFID should consider commissioning work looking at ways the Partnership can enhance its effectiveness, especially by strengthening links with country-level advocates. Such an investment is likely to be cost effective as by supporting better TB advocacy, greater resources and more effective policies are likely to follow.

By focussing its efforts on promoting community-level models of TB control, DFID could also have an impact of enhancing grassroots' demand for TB services. This in turn should address many of the issues associated with the relatively low profile and lack of attention TB appears to suffer from in many high-burden countries.

Recommendation 5:

Address HIV-TB co-infection

DFID officials recognise the need to enhance the co-ordination of TB-HIV services in their programmes,^{iv} and progress is being made. The Department has funded studies on the integration of TB and HIV services.¹ A greater effort is needed to ensure that this research is translated into practice and acted on by DFID country offices, donor and recipient governments and international agencies implementing programmes on the ground.

¹ For example the Evidence for Action on HIV treatment and care systems work on integrating TB and HIV services.

This is an opportune time for DFID to make serious changes to the way it builds TB into its HIV strategies. As DFID considers its objectives for controlling these two diseases by May 2011, it should ensure these are integrated as far as possible, including the expansion of TB preventative therapies among people living with HIV.

About this report

Aims

This report outlines challenges to tackling tuberculosis (TB) in high TB burden countries and considers ways the UK Government should respond to this pandemic. It seeks to make constructive recommendations to enhance policy and contribute to the debate about how the UK can most effectively work to prevent the unnecessary loss of 10 million lives to TB by 2015.^v

Methodology

The APPG conducted a two-stage inquiry from mid to late 2010. During the first stage, a call for written evidence was put out to a number of experts, practitioners and advocacy groups to gain a wide range of opinion and evidence on TB control and the UK Department for International Development's (DFID) approach to this issue. The second stage involved four oral inquiry hearings where experts were invited to give their views on the areas covered in the written call for evidence. Oral evidence was given at the hearings by TB researchers, representatives from international institutions (such as the Global Fund to Fight AIDS, Tuberculosis and Malaria), NGOs working on TB and representatives from DFID². In addition, articles and reports were consulted to complement the inquiry's work³. This evidence informed the five main recommendations outlined in this report. These recommendations are those of the APPG and are based on the evaluation of the evidence received.

² See Annex 2 for details

³ See references throughout this report

The UK's response to global tuberculosis

Introduction: Why TB should be a priority for the UK

Scale of the TB pandemic

Tuberculosis (TB) is a curable disease, yet it continues to kill 1.7million people every year^{vi}; over 4,500 people every day. There are over 9million new cases per year^{vii} and roughly 3 million people currently fail to access quality TB care each year.^{viii}

Economic benefits of tackling TB

National economic benefits

High rates of TB hinder economic development. A report in 2007 by the World Bank found that benefits of TB control exceeded costs by a factor of 15 in the 22 countries with the highest burden of TB.^{ix} It is no surprise that a disease which kills and debilitates so many working age adults has a dramatic economic impact, making it tougher for countries to escape poverty.

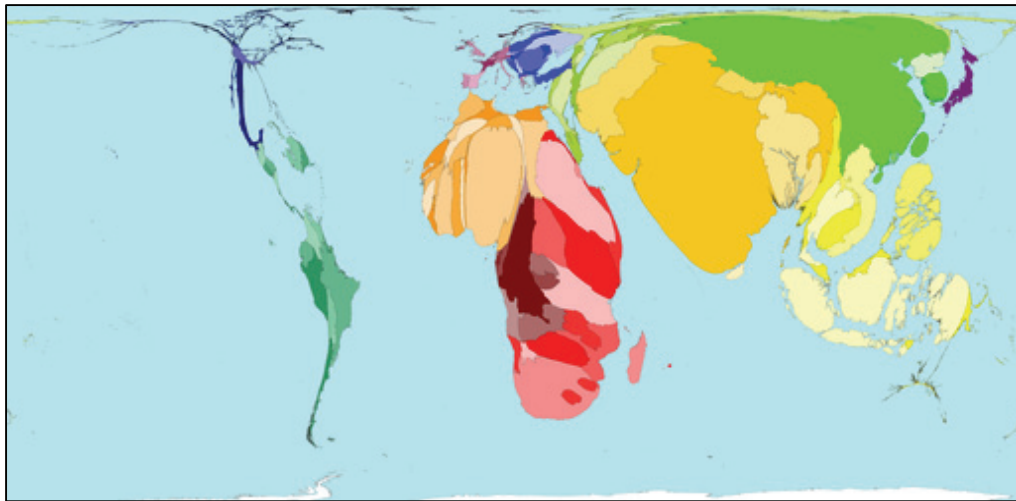
Local economic benefits

The economic impact of high rates of TB on individuals, families and communities is equally severe. The death of a family member is emotionally devastating, but also has a drastic impact on household earning capacity. TB is a chronic disease. Someone with active TB typically suffers a persistent cough, fatigue and weight loss rendering them unable to work. If parents are sick with TB, children will often drop out of school to care for them, limiting their future prospects.

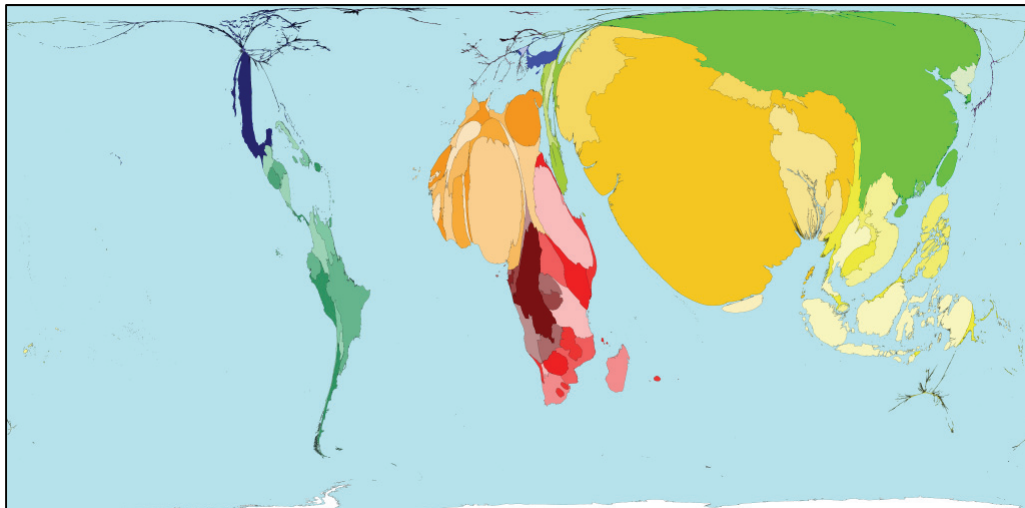
Impact on the poorest

TB is not just a cause of poverty; it is also a consequence of poverty. TB rates are highest in some of the poorest regions in the world, typically in Africa and south Asia. Within poorer countries it is often the poorest and most vulnerable individuals and communities who are most likely to suffer from the disease.⁴ Lack of nutrition, a weakened immune system and poor and overcrowded housing are all risk factors associated with TB. As can be seen from the map opposite, the countries with the highest burden of TB are typically also those with the highest numbers of people living on less than \$2 per day.

⁴ This is because TB risk factors, such as poor and overcrowded housing or malnutrition, are more likely among poorer communities. TB Alert website <http://www.tbalert.org/worldwide/TBbandpoverty.php>



Map illustrating global cases of TB ⁵



Map illustrating the number of people living on less than \$2 per day⁶

The threat of drug resistance

The majority of the 9 million new cases of TB each year are treatable with a six month course of standard antibiotics, which can cost as little as \$20. However, multidrug-resistant TB (MDR TB) and extensively drug-resistant TB (XDR TB) have now become a major challenge for TB control. MDR TB is vastly more difficult and costly to treat than drug sensitive TB, requiring up to two years of treatment. XDR TB occurs when TB is resistant to even second-line MDR TB treatments.^x There are

⁵ Â© Copyright SASI Group (University of Sheffield) and Mark Newman (University of Michigan), accessed via <http://www.worldmapper.org/>

⁶ Â© Copyright SASI Group (University of Sheffield) and Mark Newman (University of Michigan), accessed via <http://www.worldmapper.org/>

severely limited treatment options for a patient with XDR TB^{xi}. The threat of MDR TB and XDR TB make controlling the disease even more important for efforts to improve global health.

TB-HIV co-infection

TB is the largest killer of people infected with HIV. The UK invests around £150 million each year on bilateral HIV/AIDS services,^{xii} yet with inadequate investment in TB programmes HIV/AIDS services are at risk of being undermined. If international donors are to make real progress in the fight against AIDS, effective TB control is also essential.

TB and women's health

DFID is committed to putting women and girls at the heart of its global health strategy.^{xiii} Addressing maternal health, and women's health more broadly, requires strong TB control. TB is a major cause of death among women, particularly women of reproductive age. Better diagnosis and treatment of TB during pregnancy are important for both maternal and child health, contributing to efforts to achieve MDGs four and five, as well as six.^{xiv} In addition, there are serious gender inequalities in accessing TB services. For example, women are particularly affected by stigma and discrimination, meaning they may be reluctant to be tested and treated for TB.

Health system strengthening

DFID places an important emphasis on strengthening health systems and services in the Department's approach to global health.^{xv} Health system strengthening and TB control are mutually reinforcing. TB is best addressed in strong health frameworks and health systems are strengthened by investment in TB control.^{xvi} The recommendations in this report acknowledge this link and are designed to ensure that TB investment strengthens the wider health system while also addressing TB directly.

TB impacts on the UK

TB control is a strong example of how promoting development abroad has a direct benefit to Britain. TB rates in the UK are rising, largely due to globalisation, increased international travel and immigration. During the 20th century cases of TB in the UK were vastly reduced but, partly because rates remained high in the developing world, rates in Britain are now rapidly increasing. There are around 9000 new cases of TB in the UK each year,^{xvii} making a compelling domestic case for supporting global efforts to control TB.

Challenges to TB control

Several factors frustrate efforts to control TB and addressing these is crucial to stopping the disease. Despite limited gains, at present we do not have the tools to 'crack' TB nor the right implementation process^{xviii}. The Revised Global Plan to Stop TB 2011 - 2015 states that elimination by 2050 is only possible if we radically change the way TB is diagnosed, treated and prevented. This is only possible with greater levels of TB research.^{xix} However, more can also be done in the fight against TB with the tools that are currently available.

Diagnosis

Diagnosis is a prerequisite to receiving treatment. However, the current case detection rate for TB is only 63 per cent^{xx}. Failure to diagnose TB (and a failure to diagnose early) is a risk not only to the individual, but also restricts infection control. Poor diagnosis rates are attributable to a number of factors including: limited access to health services due to distance to travel, costs to the individual (both direct costs of paying for testing as well as indirect costs such as travel), fear of stigma, and a lack of diagnostic services due to poorly functioning health systems and inadequate diagnostic tools^{xxi}.

Diagnostic techniques typically available in poorer countries involve sputum samples being examined in a laboratory. This process often fails to detect the disease and cannot test for drug resistance, meaning that testing for drug resistance only occurs after standard treatment fails - a risk to the patient and onward transmission. This also means that diagnosis must be done in a laboratory environment, rather than in the field, making diagnosis more difficult to access and a time consuming process.

Drugs and challenges to treatment completion

A major issue in TB control is the failure to complete the course of treatment. The drugs currently used to treat TB were developed 40 years ago. The standard course of treatment lasts for 6 months (and far longer for MDR TB).

The recommended treatment process for TB is DOTS – Directly Observed Treatment Short-course. DOTS involves giving the standard course of treatment under direct and supportive observation. Failure to complete this long, demanding regimen is a threat not only to the patient and infection control, but can also result in drug-resistant TB forming and spreading, which has the potential to further undermine global efforts control TB.

Vaccines

The BCG TB vaccine was developed almost 90 years ago. It offers limited protection against paediatric TB. However it is unreliable for preventing pulmonary TB and is not recommended for use in infants with HIV^{xxii}. A new, more effective vaccine is needed.

Operational research

Operational Research is necessary to develop the best models of TB services in resource poor settings^{xxiii} and can also stimulate a culture of asking questions pertinent to TB control and using routinely collected data to answer those questions^{xxiv}. This is particularly needed around the community and patient-centred treatment, and health system strengthening, approaches called for in this report.

Stigma and discrimination

TB's association with HIV means that in many regions where the burden of both diseases is high, individuals may not seek diagnosis for TB for fear a positive diagnosis will also indicate they are HIV positive^{xxv}. The spread of MDR and XDR-TB mean that fear of TB diagnosis itself is also increasing. The fear of MDR TB and XDR TB can be so acute that even health workers are often afraid of contracting TB from those they are treating^{xxvi}.

The infectious nature of TB and its association with poverty means that many people, particularly women, may be discriminated against by family members and their community. In many cases if a woman is diagnosed with TB, she will often be forced to leave her family.^{xxvii}

TB-related stigma can have a devastating impact on the individual concerned, and also on the diagnosis and treatment seeking behaviour of those displaying TB symptoms. Addressing issues of stigma and discrimination are therefore important in order to improve TB control.

An example of the personal experience of stigma

People are scared of me; they don't talk to me because of my drug-resistant TB, and it makes me feel terrible and so lonely. For instance, in Lavumisa, where Doctors Without Borders/Médecins Sans Frontières (MSF) rented a one-room flat for me, one of the tenants went to the landlady and told her I have a dangerous TB which is not curable and that something must be done about me. He spread the news to the rest of the tenants. They started avoiding me and I felt like dirt.

Nikiwe, 30 years old, was diagnosed in early 2009 with drug-resistant tuberculosis (TB).

Extract taken from Médecins Sans Frontières, 'Voice from the field'

<http://www.doctorswithoutborders.org/news/article.cfm?id=4032&cat=voice-from-the-field>

Profile and political priorities

It is often argued that TB has a lower public profile than other major diseases and there is a lack of political will to fight the disease⁷. This is often reflected in the set-up of national health services and donor country offices⁸, disease funding⁹ and even in the Millennium Development Goals¹⁰. Many

⁷ This issue was raised several times during the oral evidence sessions held during the inquiry

⁸ Written evidence from Professor Anthony Harries suggested that in many countries TB loses out as the office of TB control is seen as a lower priority than, for example, HIV. Oral evidence from Target Tuberculosis noted that there are often in-country representatives for HIV but not for TB.

reasons have been mooted for why this may be the case including: the long-term nature of TB illness, the fact that TB most heavily impacts the poorest and most vulnerable in society, the lack of effective high-level and grassroots advocacy, and even the fact that TB has been present for thousands of years and so ‘what is the rush’ in dealing with it. Many are concerned that TB will continue to be a ‘neglected disease’ if it does not receive the public and political attention the scale of the pandemic requires.

Multidrug-resistant (MDR TB) and extensively drug-resistant TB (XDR TB)

There were an estimated 440,000 MDR TB cases worldwide in 2008, resulting in 150,000 deaths. Yet only 7 per cent of cases are currently identified and reported and only 20 per cent of those are treated to WHO standards. MDR and XDR TB make treatment more difficult and have a higher rate of mortality.^{xxviii}

MDR-TB rates can be reversed but this requires wide efforts to prevent new cases and manage existing cases of M/XDR TB. This should include preventing both acquired drug-resistance and the transmission of drug-resistant TB, better diagnosis of M/XDR TB¹¹, developing new treatments, and improving programmes and health system capacity.^{12xxix}

HIV-TB co-infection

As previously discussed, many countries with a high burden of TB, particularly in sub-Saharan Africa, also suffer from high levels of HIV. In these settings the HIV and TB epidemics are interrelated. Worldwide, nearly a quarter of all HIV-associated deaths are caused by TB. People co-infected with TB-HIV are 20-30 times more likely to develop active TB than those without HIV.^{xxx}

Despite these strong links between TB and HIV, services too often operate in isolation of each other. This duplicates work, wastes resources and frustrates efforts to diagnose, treat and support patients. Services will often test or treat patients for one disease and not the other, resulting in missed opportunities for treatment and infection control. In 2008 only 5 per cent of people with HIV worldwide were screened for TB^{xxxi}. The rate for those testing positive for TB is much higher but is still far too low given the inter-related nature of the diseases.^{xxxii} Access to preventative therapies is also insufficient. The number of people living with HIV who have been started on isoniazid preventative therapy (IPT) is less than 1 per cent of the total number of people living with HIV worldwide.^{xxxiii}

Funding

Global TB control lacks the funding needed to reach WHO targets for reducing incidence. The revised Global Plan to Stop TB 2011 – 2015 calls for \$47billion over the current 5 year period, including \$37billion for implementation of the Plan and \$10billion for Research and Development. The Plan

⁹ The Revised Global Plan to Stop TB 2011 – 2015 (p.22) notes that while \$2.8bn is needed for TB control from international donors (a significant increase) every year, around \$8.5bn was spent in 2008 by international donors on HIV prevention, treatment and care.

¹⁰ Millennium Development Goal 6 is ‘to combat HIV/AIDS, malaria and other diseases’. TB falls under ‘other diseases’.

¹¹ for example expending lab capacity and developing new tests.

¹² for example enhanced reporting systems.

calls for \$14billion of funding to come from international donors. On an annual basis this is six times the level of donor funding for TB in 2010 and equivalent to \$2.8billion per year. By comparison, donor funding for HIV prevention, treatment and care in 2008 alone was about \$8.5billion.^{xxxiv}

Recommendations

Recommendation 1A:

Develop and promote models of community and patient-centred TB care and control, built around strong health systems

Community and patient-centred treatment has an important role to play in complementing and extending existing National TB Programmes. This approach has the potential to help overcome many of the barriers to improving TB control including diagnosis rates, treatment completion, stigma and advocacy.

A patient-centred approach to TB care and control puts the patient at the centre of all strategic planning from the development of new drugs and diagnostics to point of care service delivery. Overcoming many of the barriers to TB control taking account of the circumstances in which patients access services at all stages^{xxxv}. Community activities in TB control include education in community groups, improvement and extension of community health worker programmes, and diagnosis being brought closer to affected communities. This in turn allows patients to take greater responsibility for their health including adherence to treatment, organising TB patients into groups and clubs and helping patients and former patients to use advocacy to improve policies and mobilise resources for TB control in their own communities. Community initiatives play an important role in supporting patient-centred approaches on the ground.

Community health workers

Community health workers can be a crucial additional resource to support TB patients in or closer to their own homes, particularly during the six month course of drugs required to treat TB. This is most effective when the cases they are treating are managed by a skilled nurse, able to support the community health worker as well as the patient. Adequate training and equipment of community health workers is also vital. One excellent example is the Eastern Deanery AIDS Relief Programme (which also deals with TB co-infection) in eastern Nairobi where there is a strong and effective relationship between the nursing team and the community health workers. Importantly, the entire programme has been developed around the needs of patients.^{xxxvi}

Community activities and groups

Community-level activities and involving community groups in TB services can have a significant impact in improving case detection, and on ensuring completion of treatment. Studies, such as those carried out by the Zambart Project in Zambia and South Africa, have shown that 'Enhanced Case Finding' using community-based techniques can have a positive impact on TB control^{13xxxvii}.

¹³Enhanced case finding techniques used by the Zambart project include local access to sputum collection points, education in schools, and greater dissemination of information at a community level.

Patient needs and treatment

A more patient-centred approach to TB control can improve the likelihood of adherence to drug regimens and reduce the costs and barriers for patients associated with TB treatment.

Activities which can improve adherence to treatment include peer support^{14 15}, enabling patients to take more responsibility for their health^{16 xxxviii} as well as organising patients into groups and clubs^{xxxix}. These approaches can increase patient motivation to complete treatment, and also reduce financial and other costs for the patient.

Education, empowerment and stigma

Stigma is a major barrier to individuals seeking diagnosis and treatment. Education, at the community and at the individual level, is an important intervention to address stigma and create wider demand for TB control programmes at a grassroots level.^{xl}

Removal of barriers to treatment for patients

The removal of barriers to treatment¹⁷ increases the demand for TB services. This in turn should help to direct additional resources at national and international levels toward TB control and help ensure TB is integrated in other health services, including maternal health and HIV. This demand can be complemented by encouraging grassroots advocacy.¹⁸

Reduction in costs for programmes

Patient care should be the primary motivation for developing and promoting these TB control models. However, there may also be significant cost saving benefits in pursuing these initiatives. For example, according to one WHO paper, the costs associated with community-based DOTS was typically 40-50 per cent lower than health facility-based care. This approach should complement and extend existing National TB Programmes.^{xli}

The need for strong health systems

The definition of a strong health system varies according to the context but will include 'a robust financing mechanism; a well-trained and adequately paid workforce; reliable information on which to base decisions and policies; well-maintained facilities and logistics to deliver quality medicines and technologies'.^{xlii} Investment in TB control and developing strong health systems can and should be mutually reinforcing. Investment in each should be done in a way to complement the other.

¹⁴ This can be either from other TB patients or former patients who are now cured.

¹⁵ For example, in Katutura, Namibia patients are part of a 'buddy system' where a person designated by the patient can collect their medicine and perform DOTS at home when the patient cannot attend. Empowerment and involvement of tuberculosis patients in tuberculosis control: documented experiences and interviews, WHO and Stop TB Partnership, 2007: 8

¹⁶ For example removing financial barriers or introducing 'DOTS points' where patients come together to take treatments

¹⁷ Including financial, time and stigma

¹⁸ Further information contained in the advocacy section of this report.

Examples of mutual benefits for TB control and health system strengthening

Health workers

DOTS involves six months of observed treatment, requiring adequate numbers of well-trained health workers (including community health workers). There is currently a shortage of health workers in many high TB burden countries, weakening overall health systems and limiting the ability for effective TB treatment. As a recent WHO report notes, “Countless lives could be saved, and many life-threatening conditions prevented or managed, through inexpensive, low-tech interventions by skilled health-care providers. Yet by far the largest group of those providers – the nursing and midwifery workforce – remains understaffed, undertrained and poorly deployed.”^{xliii}

Approaches such as expanding and improving training and education for community health workers can contribute to TB control, as is seen in examples from Pakistan and Ethiopia.^{xliv19} In India, the national government via the Revised National TB Control Programme supplies funding to fill gaps in the health workforce at district and state level and by training all health staff and community volunteers on national guidelines for TB control. Community volunteers receive financial incentives related to the successful completion of treatment for every patient.^{xlv} Expanding quality community health worker schemes should therefore benefit TB control while also strengthening the wider health system.

Case reporting infrastructure

Most countries have implemented TB case reporting as modules within their national health information systems. Often TB reporting is one of a national health information system’s strongest elements, with support for this provided by the WHO.^{xlvi} Therefore, there is a clear mutual benefit for TB control and a health system as a whole from establishing and maintaining robust case reporting infrastructure which can be used for TB reporting, but also benefits control of other diseases.

DFID

DFID sees system-wide strengthening of health as an area in which it has a comparative advantage. The Department currently funds operational research projects on community level programmes. DFID should continue to support the development of appropriate models of community level programmes for TB control, and promote these successful models to governments and other development partners.

Developing models of TB care and control which empower communities and better support individuals are important. However, a patient-centred approach to TB control goes beyond the point of patient care. Integrating patient-centred approaches across all levels of TB control from the front-line to strategic planning could bring real benefits to TB control. DFID should consider the role it can play in promoting a patient-centred approach at all levels.

¹⁹Expansion of public-private partnerships can also be beneficial in enhancing the health worker component in health system strengthening.

Recommendation 1B:

Promote integration of TB control within wider health services

TB services should, where possible, be integrated into other health services. This is particularly important where there is a link between TB and other health issues, such as in TB-HIV co-infection and the risks TB poses during pregnancy. Integration of TB into wider health programmes is also important.

Integration of services provides better health outcomes for a population while also preventing duplication of infrastructure and services. The benefits of integration occur at both a health systems and clinical outcomes level. For example, TB-HIV integration can improve health systems through cost efficiency and access to services, such as co-location of services on one site, and will also improve patient outcomes, such as greater cure rates among TB patients.^{xlvii}

Strengthening a country's health infrastructure

TB integration should ideally not just occur with one other health issue, but with wider health services to help strengthen a country's entire health structure. For example, one suggestion made to the inquiry was for the co-location of not just TB and HIV services but all other chronic conditions. Since these medical conditions require long-term treatment they should benefit from similar approaches^{xlviii} to diagnosis, treatment, care and monitoring and reporting²⁰.

Examples of the benefits of integration

HIV and TB services

Integrating TB control with HIV programmes is the most cited example of where integration of services is beneficial for health systems and patient outcomes. Traditionally, diagnosis and treatment services have often operated in parallel with separate clinics often treating the two diseases, increasing cost and time associated with receiving treatment. Screening of HIV patients for TB and vice versa is also often carried out separately. The statistic that only 5 per cent of those worldwide with HIV have been tested for TB^{xlix} illustrates that greater progress in this area is still needed.

While there is still progress to be made in integrating TB and HIV control, where TB and HIV services have been effectively integrated the lessons learnt from this process could also be applied to integrating TB control into other health services.¹

Maternal and women's health

Maternal and women's health is another area where the integration of TB screening, treatment and care could have a major impact. Inclusion of TB diagnosis and treatment in maternal health programmes are important interventions for both maternal and child health,^{li} as well as TB control. The heavy burden of TB on women, including 700,000 deaths each year^{lii} and the gender dynamics of

²⁰ Appropriate consideration of and investment in infection prevention measures will also be important here.

the disease (for example gender-specific stigma) mean that TB screening and treatment should be incorporated into maternal health strategies and services.

Integration at national level

To be effective, integration of TB control is needed at all levels of health care. To achieve this, leadership and guidance is needed at national level. National TB Programmes need to work closely with a country's Ministry of Health so that TB control features heavily throughout their priorities and policies to ensure that TB control features in other programmes^{liii}.

DFID

DFID should encourage integration of TB control into HIV, maternal health, and other relevant programmes with appropriate attention and investment in infection prevention.

The Department should also include TB control measures in all relevant policy papers they produce. For example, The Choices for Women Framework for Action published by the Department in December clearly places strengthening women's and maternal health within a framework of broad health system strengthening. Within this, it is important that TB is seen as a priority and progress towards its control is adequately measured. TB does not feature in the Monitoring and Evaluation Framework for the report.^{liv}

DFID should also continue to fund operational research on integration, especially considering how TB control can effectively be integrated with wider health services.

Recommendation 2:

Priority investment in research for new tools

DFID should support investment in research to find new diagnostic tools, drugs and vaccines, as well as operational research. The introduction of more effective tools to prevent, treat and diagnose TB could bring a step change in efforts to control the disease. There is no way to eradicate TB without new tools, for example without an effective vaccine able to treat latent TB.^{lv} Developing new diagnostic tools and operational research are of particular importance because of the low rates of diagnosis, and the need to develop better ways to deliver care in the field.

The need for better diagnostics

Diagnosis rates for TB are a major concern. Developing new, more effective diagnostic tools is an area where a significant return on investment can be made. In 2008, case detection was estimated at 61 per cent^{lvi}. Only 5 per cent of HIV infected people have been tested for TB and only 12 per cent of MDR TB cases are notified^{lvii}. TB treatment success rates have been shown to be steadily improving, but case detection rates are levelling off in many areas.^{lviii} Delayed diagnosis of TB has detrimental consequences for the prognosis of the patient and for onward transmission.^{lix}

A new point of care TB test

There have been advances in diagnostics in recent years but they have often not been designed to help those most in need in resource poor settings, typically requiring laboratories and bio-safety infrastructure.^{lx} The lack of a cheap, effective test which can be easily administered at the point of care is a major obstacle to improving diagnosis. This exacerbates social and financial barriers to people seeking diagnosis, such as costs associated with travelling to a clinic. It has been estimated that a 100 per cent accurate single visit diagnostic test could save 625,000 lives per year.^{lxi}

Operational research

Operational research has generally been neglected by funding agencies, although DFID's significant contribution to operational research was noted by many during the inquiry. Additional operational research is needed to further increase the effectiveness of existing tools and strategies to control TB. Support for this research complements earlier recommendations for the development and support of community and patient-centred models of care, health system strengthening and integration of TB and other health services.^{lxii} Operational research may bring particular benefits to TB control in high burden, low resource settings as it improves the efficiency of health care and the use of existing tools and resources.

UK Research

UK-based researchers at a wide range of universities across the country are leaders in the field of TB research. Supporting their efforts will not only contribute to global efforts to control TB, but will also build on the UK's science base in an area where researchers have world class expertise but receive comparatively little funding. The fact that TB impacts most heavily on the poorest is perhaps one of the reasons that commercial funding is often difficult to secure.^{lxiii} There is therefore a role for DFID and other UK Government departments, such as the Department for Business, Innovation and Skills, to play in supporting this TB research.

DFID

DFID currently supports research and development for a number of tools to tackle TB and has a strong record in funding operational research. Its record in this area is generally respected and funding should continue.

DFID provides £5m for the Foundation for Innovative New Diagnostics (2009 – 2014) and £14m for the WHO Special Research Programme in Tropical Disease Research (2008 - 2013).^{lxiv} Given the issues surrounding low diagnosis rates, DFID should continue and consider expansion of its funding for diagnostics, especially on funding research into point of care diagnostic tests.

The UK has contributed over £35million for the period 2005 – 2016 for operational research which includes, but is not limited to, TB services.^{lxv} The revised Global Plan to Stop TB 2011 – 15 calls for \$400million of international funding for operational research during this five year period. DFID should continue and consider expanding funding for operational research. Findings from operational research could be disseminated through the WHO/ Stop-TB Partnership's Research Movement.

Recommendation 3:

DFID annual assessment of its contribution towards TB control

DFID should produce an annual assessment of its contribution towards TB control. This should include brief, clear annual statements from each country office on the TB status of each country and the impact of DFID's work on TB in that country. This assessment should be available for public scrutiny.

TB within DFID's health portfolio

DFID is focusing on certain health objectives including maternal and newborn health, malaria control and polio eradication within its health programmes.^{lxvi} These are worthy and welcome priorities. However, TB is also a major preventable cause of death, especially in young adults, and the UK should also work to reduce deaths from this disease.

TB services are best provided in an integrated health system. However, evidence received during the inquiry demonstrated concern that policy makers, even in countries with a high burden of TB, often do not give TB control the attention that the severity of the disease deserves. Conducting an annual assessment of TB control should encourage better integration of TB within DFID's other health priorities.

Why annual assessments?

Annual assessments will ensure DFID offices at a national level evaluate their contribution to TB services and will hopefully focus attention on the disease, ensuring it is fully integrated into other health system strengthening programmes and specific priorities such as maternal health. These assessments should also improve transparency of the Department's operations, enhancing both internal and external accountability.²¹

DFID representatives acknowledged during the inquiry that TB advocates needed to do more to put their case to the UK government and wider audiences on why TB should be a health priority.^{lxvii} By including this level of transparency and objectives, the ability of advocates to understand DFID's work on this issue will be significantly enhanced.

DFID

The next six months will be an important time for DFID to consider the structures they will use to ensure TB receives sufficient resources and attention within wider health policy. The WHO revised Global Plan to Stop TB 2011 – 2015 was published in October 2010 and DFID has stated in its 2011 – 2015 Business Plan that it will set out its objectives on restricting the spread of major diseases like TB by May 2011.^{lxviii} Including an annual assessment of the UK's contribution towards TB

²¹As mentioned earlier in the report, DFID's recently published Maternal Health Framework for Action (December 2010), has a focus on strengthening health systems and providing an integrated approach to healthcare. However, TB, which is a major killer of women, is mentioned a handful of times and screening for TB is not included in the monitoring and evaluation indicators.

control in this Business Plan will allow better assessment of progress towards these targets.

Recommendation 4:

Coordination of TB advocacy

Organisations involved in TB advocacy need to coordinate more effectively. This should have a positive impact on both TB policy and the public, political and media profile of the disease. Better coordination includes the need for a single voice for TB in the UK. Internationally, community participation in TB control should be harnessed to increase grassroots demand and advocacy for quality TB control. The Stop TB Partnership should work and communicate more closely with country partners with an advocacy focus. DFID support for community-level TB models of care and the Stop TB Partnership could be important in facilitating this.

The UK

Structure of UK TB Advocacy

The UK has a number of actors working on TB. Cases of domestic TB are rising rapidly. Britain has strong and respected institutions working on new tools and operational research. There are also two TB-focussed charities, a large pharmaceutical industry, and an active group of Parliamentarians interested in TB control. Despite this range of actors involved in TB, the disease is frequently cited as lacking in profile. There is a need to better coordinate these different parts of the 'TB community' towards focussed advocacy. The UK Coalition to Stop TB attempts to do this, but generally lacks impact.

UK Coalition to Stop TB (UKCSTB)

The UK Coalition to Stop TB is a broad group of 37 supporting organisations led by a steering group of nine members. The steering group meet regularly to identify and coordinate action on advocacy opportunities. For example, the Coalition coordinates work around World TB Day to ensure media coverage and a number of TB-related 'asks' are produced for the UK Government to consider.

The number of organisations involved in the Coalition is one area of concern. While the involvement of a numerous organisations is welcome, the coordination of 37 organisations in the UK alone is likely to be difficult.

The UK Coalition to Stop TB lacks the human resources to follow-up on actions taken, to apply consistent, coordinated and targeted pressure on policy makers and to maintain a persistent public and media profile of TB. The Coalition currently has one part-time coordinator working out of one of the member organisation's offices. To improve coordination of advocacy in the UK, the UKCSTB needs to secure funding for additional staff, as well as improve the commitment of member organisations to take action together through the Coalition.

Integrating TB into other agendas

Beyond simply working more effectively together, TB organisations in the UK need to work more effectively to put TB on the agendas of other organisations and campaigns working on global health and international development issues. It is rare to hear large international development NGOs reference TB as a major health issue, yet TB is responsible for 1.7million deaths each year^{lxix} and is curable with relatively inexpensive drugs. Ensuring that organisations promote messages about TB is important in building pressure and urgency to address the disease. In turn, this can amplify messages and reach new audiences not previously engaged on TB control issues.

In addition, to heighten TB on the agenda of other health organisations, stronger links need to be made with campaigning organisations on issues where there are clear links with TB. For example, working with the maternal health campaigners to ensure TB forms part of their agenda could be an important step in broadening TB advocacy's reach, without a vast increase in financial resources.

International networks

Internationally, there is also a need to better coordinate advocacy efforts both across and within countries. The Stop TB Partnership, housed at the WHO in Geneva, is a network of international organisations, countries, NGOs and public and private sector donors with an interest in controlling TB^{lxx}. Among several other important activities, the Partnership works on advocacy, communication and social mobilisation to support countries to improve TB policy, empower those affected by TB, and enhance political commitment and resources to control TB^{lxxi}. At present the coordination with potential advocacy partners in donor countries is not as effective as it might be. The limited scope of the inquiry on this matter means that further work is needed to understand why this is the case. The Stop TB Partnership should consult its partners urgently and reflect on how it can improve coordination and cooperation.

Grassroots advocacy

Advocacy and mobilisation of those impacted by TB in developing countries is another important way to create demand for effective TB policies, and to drive international action. HIV advocacy is strong partly because of a powerful grassroots movement that is well educated on scientific, technical and policy aspects of the disease. Grassroots led TB advocacy is having an impact with community groups, such as the Community Care Club in Lado Sarai in India which has used education about rights and responsibilities of TB patients to enhance grassroots advocacy towards improving care.^{lxxii} A wider focus on community based education, case finding, treatment and networks around TB (as suggested in Recommendation 1A) could have a positive impact on international grassroots TB advocacy.

DFID

DFID financially supports the work of the Stop TB Partnership.^{lxxiii} This support should continue and DFID should consider commissioning work looking at ways the Partnership can enhance its effectiveness, especially by strengthening links with country-level advocates. Such an investment is likely to be cost effective as by supporting better TB advocacy, greater resources and more effective policies are likely to follow.

By focussing its efforts on promoting community-level models of TB control, DFID could also have an impact of enhancing grassroots' demand for TB services. This in turn should address many of the issues associated with the relatively low profile and lack of attention TB appears to suffer from in many high-burden countries.

Recommendation 5: Address HIV-TB co-infection

As the most significant cause of death of people infected with HIV, TB needs to be integrated into DFID's HIV policies and programmes wherever possible. It is particularly important that screening of people with HIV for TB and vice-versa is carried out. In addition, DFID should support integration of treatment, preventative therapies and earlier start of antiretroviral therapy (ART) in areas of high co-infection. The Department should also ensure that TB features heavily in future HIV strategy frameworks.

Integration of screening and treatment

Some integration of screening and treatment for TB and HIV is taking place, but implementation is inconsistent and insufficient. There is a need to promote the integration of screening and treatment for both diseases through DFID programmes, country health systems, NGOs and international institutions. As highlighted earlier in the report, TB and HIV services could not only integrate their programmes but also consider including other chronic diseases requiring long-term treatment. This could reduce stigma and bring benefits associated with shared management, reporting and supervision requirements. The integration of diagnosis/ case finding for both diseases will be particularly effective under models of community and patient-centred programmes.^{lxxiv}

Preventative therapies

There is significant scope for preventative therapies to reduce HIV-TB related mortality and transmission. For example, starting ART at a higher CD4 count will have the advantage of improving immune status before TB develops and therefore reducing the risk of that individual developing active TB. Application of the '3I's'²² could also have a significant impact.^{lxxv} Given the numbers of people living with HIV who die from TB, providing funding for preventative measures is prudent to ensure that gains made by funding HIV services are not undermined by the same people dying from TB.^{lxxvi}

Ensuring TB is a key part of future HIV policy frameworks

A frequent criticism from the inquiry evidence was that many national HIV programmes, country offices and donors (including DFID) fail to take account of TB's impact on HIV infected people, having a detrimental impact on the health of those with HIV. DFID could address this by supporting agencies and programmes which actively work to integrate services. In the future, DFID should ensure any HIV policy review fully integrates TB control as far as possible.

²² Intensified case finding, infection control, isoniazid preventative therapy

DFID

DFID officials recognise the need to enhance the coordination of TB-HIV services in their programmes,^{lxxvii} and progress is being made. The Department has funded studies on the integration of TB and HIV services.²³ A greater effort is needed to ensure that this research is translated into practice and acted on by DFID country offices, donor and recipient governments and international agencies implementing programmes on the ground.

This is an opportune time for DFID to make serious changes to the way it builds TB into its HIV strategies. As DFID considers its objectives for controlling these two diseases by May 2011, the Department should ensure these are integrated as far as possible, including the expansion of TB preventative therapies among people living with HIV.

²³ For example the Evidence for Action on HIV treatment and care systems work on integrating TB and HIV services.

Glossary

Active TB – when latent infection become symptomatic and can be infectious.

AIDS - Acquired Immune Deficiency Syndrome.

Antiretroviral therapy (ART) - Standard antiretroviral therapy (ART) consists of the use of at least three antiretroviral (ARV) drugs to maximally suppress the HIV virus and stop the progression of HIV disease. Huge reductions have been seen in rates of death and suffering when use is made of a potent antiretroviral regimen.^{lxxviii}

BGC vaccine – Bacillus Calmette-Guerin TB Vaccine.

Case detection rate – The number of notified cases of TB for one year divided by the number of estimated incident cases of TB in the same year, expressed as a percentage^{lxxix}.

Case finding - The search for people with TB, usually by microscopical examination of sputum of 'suspects' with a persistent cough.

CD4 count - A measure of the number of CD4 cells in a specified volume of blood. HIV adheres itself to CD4 cells, ultimately destroying the cell. This depletion in CD4 cells results in individuals being susceptible to infection.^{lxxx}

DFID – UK Department for International Development.

Diagnostic tools – Tests used to diagnose TB.

DOTS - Directly Observed Treatment Short course– WHO recommended measures to control TB.

Drug sensitive TB – TB that is effectively treated by standard first-line drugs.

Extensively drug-resistant TB (XDR TB) - Occurs when resistance to second-line drugs develops on top of MDR-TB.^{lxxxi}

Global Plan to Stop TB 2011 – 2015 - A comprehensive assessment of the action and resources needed to implement the Stop TB strategy and make an impact on the global TB burden. This report builds on previous Global Plans to Stop TB 2006-2015.

Health systems – A health system includes 'all the activities whose primary purpose is to promote, restore or to maintain health'^{lxxxii}.

HIV - Human Immuno-deficiency Virus - the infection which through progressive destruction of specific immune cells (CD4 cells) leads to AIDS.^{lxxxiii}

International donors – Governments and organisations who provide international funding for TB control.

Latent TB – Where someone is infected with TB bacteria but has not yet developed active TB disease.

Millennium Development Goals (MDGs) – Eight goals which form a blueprint agreed to by all the world's countries and all the world's leading development institutions. They have galvanized unprecedented efforts to meet the needs of the world's poorest.^{lxxxiv}

MDG 4 – the MDG to reduce child mortality.

MDG 5 – the MDG to improve maternal health.

MDG 6 – the MDG to combat HIV/AIDS, Malaria and other diseases.

Multidrug-resistant TB (MDR TB) - A form of TB that fails to respond to standard first-line drugs and is difficult and expensive to treat.

New tools to fight TB – New drugs, diagnosis techniques and equipment and vaccines.

NGOs – Non-governmental Organisations.

Operational research - Research specifically aimed at developing interventions that result in improved policy-making, better design and implementation of health systems, as well as more efficient methods of service delivery.^{lxxxv}

Point of care diagnostic test – A diagnostic test that can be carried out at the location at which care is provided, giving immediate results without referral to a specialist laboratory.^{lxxxvi}

Preventative therapy - Anti-TB drugs given to a person with latent tuberculosis to prevent the development of active disease.

Tuberculosis (TB) – A contagious, airborne disease. Each year over 9 million people become sick with TB and 1.7 million people die.

TB control – Action taken to prevent TB deaths and infection.

UK Coalition to Stop TB (UKCSTB) - Formed in 2008 to increase the level of awareness, commitment and political will to address TB through co-ordinated actions and a unified voice.

World Health Organisation (WHO) – The directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.^{lxxxvii}

WHO Stop TB Department – Develops policies, strategies and standards; supports efforts of WHO member states; measures progress towards TB targets and assesses national programme performance, financing and impact; promotes research; and facilitates partnerships advocacy and communication.^{lxxxviii}

3 "I"s – Public health strategy to decrease the impact of TB on people living with HIV. This involves intensified case finding, isoniazid preventative therapy and TB infection control for people living with HIV.^{lxxxix}

Annexes

Annex 1

Copy of the 'Call for written evidence'



All-Party Parliamentary Group on
Global Tuberculosis

Britain's response to Global Tuberculosis: Call for written evidence

About the report and call for written evidence

The All Party Parliamentary Group on Global Tuberculosis (APPG TB) is a cross party group of UK parliamentarians who have a shared interest in eradicating tuberculosis both in the UK and in the developing world. The group works to raise the profile of issues surrounding TB and to accelerate efforts to eradicate this disease.

The APPG is producing a report in the coming months looking at the challenges to tackling global tuberculosis and the way the UK Government is responding to this challenge. This call for written evidence is being sent to experts and advocacy groups to feed into the inquiry process. This initial evidence will be fed into the report and will also inform subsequent face to face evidence sessions. The final report will then be submitted to DFID and will influence much of the APPG's work next year and beyond.

The APPG would be delighted for your input into the inquiry and ask you to consider and respond to the written call for evidence questions below.

Responding to the call for evidence

The call for evidence is broken down into 4 sections – 'improving efforts to tackle TB', 'drug-resistant TB', 'HIV-TB co-infection', and 'new tools'. **Please note that you do not need to answer every question or every section. Feel free to only answer the questions relevant to your area of expertise. If possible, please try to relate your answer to the context of UK aid.** If you need more space to answer any question, please feel free to add additional pages. This report will only consider policies to eradicate TB in the global, rather than domestic UK context.

Written evidence may be referenced in the final report. If you wish for your evidence to be anonymous please make this clear to us.

All responses should be either emailed or posted to the APPG's coordinator, Mike Smith, at mike.smith@results.org.uk or at RESULTS UK, Second Floor, 13 Maddox Street, London, W1S 2QG. If you have any queries about the report please contact Mike by email, or by calling 020 74998238.

The deadline for submissions in Monday 27th September.

Your details

Name:

Organisation/ Position:

Contact details:

SECTION 1: Improving efforts to tackle TB

Working with multilateral agencies

- Which multilateral organisations do you feel are most/ least effective at addressing TB?
- What makes these agencies particularly effective/ ineffective?

Support through bilateral channels

- Of the bi-lateral support the UK Government provides to fight TB, which examples have been most/ least effective?
- Which factors are important in making these effective/ineffective?
- Should the UK Government focus more on bilateral/ project specific support to tackle TB, or work via multilateral organisations?

Disease specific programmes and Sector-Wide Approaches

- Are Sector-Wide Approaches typically more or less effective than programme specific approaches in reducing rates of tuberculosis? Why?

SECTION 2: Drug resistant TB

Work to support diagnosis of Multi and Extensively Drug-resistant TB (M/XDR TB)

- What policies and resources are needed to reverse the rise in M/XDR TB?
- Should and (if so) in what ways could the UK Government increase its support for reversing the increase in M/XDR TB?

Access to second-line medicines

- How wide-spread is access to second-line TB drugs?
- What work is being done to increase access to these drugs?
- What are the resource implications of scaling-up access to these drugs? Is there sufficient commitment and capacity from both donor and recipient countries for this?

Best practice in reversing M/XDR TB

- What examples are there of rising cases of M/XDR TB being reversed?
- How far are appropriate strategies in place or being developed which respond to M/XDR TB in different country settings?

SECTION 3: HIV-TB co-infection

Integration of TB-HIV screening and treatment

- How effective have efforts been to integrate TB-HIV services?
- What action could the UK Government take to enhance this?

Infection control, stigma and social dynamics of co-infection

- How important are the 'social aspects' of co-infection in preventing effective treatment?
- What approaches are or should be employed to counter this?

TB preventative therapies

- What is being done to roll out preventative therapies in high TB-HIV burden countries?

Scaling-up efforts

- What more (if anything) needs to be done to scale up efforts to address TB-HIV co-infection, and how is the UK Government supporting such efforts?

SECTION 4: New tools

The need for new tools to fight TB

- Which new tools are most needed to fight TB?
- How far are these from being available for use?

Ensuring the right tools reach those in need

- Once new tools are developed, what resources and policies are needed to ensure they reach those who would benefit from them?

UK Government support for developing new tools

- What (if any) additional support should the UK Government provide to develop new tools?

Please also feel free to also submit any other comments you feel are relevant to the inquiry.

Annex 2:

Contributing individuals and organisations

The APPG would like to thank the following individuals and organisations for contributing to the APPG’s call for written evidence:

Amina Jindani, Honorary Senior Lecturer, St. George’s, University of London

Gini Williams, TB Project Director, International Council of Nurses

Dr Stephen Gordon, Reader in Respiratory Medicine, Liverpool School of Tropical Medicine

Professor Shabbar Jaffar, Professor of Epidemiology, London School of Hygiene and Tropical Medicine

TB Alert

Mohamed Abdel Aziz, Senior TB Advisor, The Global Fund to Fight AIDS, Tuberculosis and Malaria
Aids Alliance

Alison Sizer, Programmes Officer, Cambodia and Lao PDR, Health Poverty Action

Nazma Kabir, Programmes Director, LEPR Health in Action

Mary Hem, Programme Manager, PVH province, Cambodia, Health Unlimited

Professor Anthony D Harries, Senior Advisor, International Union Against TB and Lung Disease

Dr Ruth McNerney, Senior Lecturer, London School of Hygiene & Tropical Medicine

Target TB

Dr Mark Kealy, Consultant for Communicable Disease Control, Health Protection Agency

Professor Peter Godfrey-Faussett, Faculty of Infectious and Tropical Diseases, London School of Hygiene and Tropical Medicine

The APPG would like to thank the following individuals and organisations for contributing to the APPG’s oral evidence sessions.

Dr Ruth McNerney, Senior Lecturer, London School of Hygiene & Tropical Medicine

Professor Stephen Gillespie, School of Medicine, University of St Andrews and **Dr Geoff Coxon**, SIPBS, University of Strathclyde, acting on behalf of TB Drug Discovery UK (TBD-UK)

Paul Nunn, Coordinator for TB Control, WHO Stop TB Department

Dr Mohammed Abdel Aziz, Senior TB Advisor, Global Fund to Fight AIDS, TB and Malaria

Nikki Jeffrey, Director, Target TB

Mike Mandelbaum, Chief Executive, TB Alert

Nichola Cadge, Health Advisor, Health Services Team, DFID

Liz Tayler, Regional Health Adviser, Africa Division, DFID

Shirley Addies, Research Manager, DFID

Martin Smith, Deputy Programme Manager Research, DFID

John Moncrieff, Policy Administrator, Health Services Team, DFID

The DFID India Office also provided written evidence to the DFID team attending the oral evidence meeting.

The APPG would also like to thank Gini Williams, Professor Anthony Harries and Patrick Sichalwe (Interventions Team Leader, Zambart Project) for their additional advice during the final stages of drafting the report.

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- ^{lxiii} Oral evidence, Professor Stephen Gillespie.

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- ^{lxiv} Information provided by DFID on request from the APPG on Global TB.
- ^{lxv} Information provided by DFID on request from the APPG on Global TB.
- ^{lxvi} For example, see Rt Hon Andrew Mitchell MP's oral statement to Parliament on 1st March on the publication of DFID's Bilateral and Multilateral Aid Reviews. <http://www.dfid.gov.uk/Media-Room/Speeches-and-articles/2011/BAR-MAR-oral-statement/>.
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