

Challenging TB in Newham - A New Approach

Authors - Choudhury S.M, Mayho P.A. 2003

Introduction

Throughout history humanity has struggled against plague and pestilence, its successes and defeats shaping the socio-economic structure of civilisations today (Open University 1986). However, as people strive to develop cures and to conquer disease, it is unlikely that they will ever succeed in eradicating all harmful organisms from the environment. Indeed just as man was getting used to the idea of effective control over bacterial infection through the miracle of antibiotics, there is growing evidence of more virulent strains of bacteria, which have genetically acquired resistance to multiple drugs. In the U.S a strain of tuberculosis has been observed which is resistant to virtually all the available antibiotics. A relationship based on interdependency between humans and micro-organisms exists with one achieving dominance over the other throughout history.

Newham

Thankfully the London Borough of Newham in London does not have super-strains of tuberculosis. However, we do have a growing problem with the incidence of the disease in the UK, as there is globally.

In the document entitled The Interdepartmental Working Group on Tuberculosis, produced by the Department of Health, we find that:

“The incidence of tuberculosis in the UK was at its highest at the beginning of the 19th century. It then fell considerably, even before the introduction of specific anti-tuberculosis measures such as chemotherapy (in the 1940s), and BCG immunisation (in the 1950s) helped to hasten the decline. Some slowing of the decline occurred in the 1960s in association with substantial immigration from parts of the world with high rates of tuberculosis such as the Indian sub-continent, although the incidence in the majority of the white population continued to decline. Several factors are thought to have contributed including demographic change (especially an ageing population), continued high rates of tuberculosis among new immigrants and the effects of poverty and homelessness as well as, to a relatively small extent, the HIV epidemic.” (Department of Health 1998).

Newham has one of the highest TB notification rates in the UK, and they are increasing (ELCHA 2001). The problem is not unique to Newham. Indeed, TB is the commonest bacterial cause of mortality worldwide (Dye et al, 1999).

In the 2001 National Census it showed that Newham had a total population of 243,737, showing nearly 15 per cent growth since the 1981 Census. The rest of the UK has grown at a much slower rate with only 4.3 per cent increase over the same period. (Census 2001). This includes 63,700 persons aged 0-15, 26 per cent of the total population – the highest percentage of young

people in London and an estimated 154,700 persons of working age population, or 63 per cent of the population (Census 2001).

Newham has the most diverse ethnic minority population in the UK with 61% of the population from non- White ethnic groups (2001 Census). Data suggests that the population of ethnic minority communities has grown considerably between 1991 and 2001. It is estimated that refugees constitute approximately 8 per cent of the total population and the second largest asylum seeking population in London. The wide ethnic diversity of population in Newham makes it a unique part of the UK with a rich variety of cultures. From the Indices of Multiple Deprivation 2000, Newham was the third most deprived borough in Inner London (after Tower Hamlets and Hackney) and the fifth most deprived in England and Wales. (Index of Multiple Deprivation 2000).

Many people live in poor housing and overcrowded conditions. Mainly concentrated in the northeast of the borough. It is here that we see the highest notifications for TB. There is a definite correlation between poor housing and poverty and the incidence of TB.

TB Project

The incidence of TB is a high priority for the London Borough of Newham. In response we commenced a TB Project which is funded through the mechanism of a Public Service Agreement (PSA).

The aims of the PSA are:-

- 1) To reduce the median treatment time of TB.
- 2) Increase the number of patients that complete treatment.

It was formally signed in 2001 and initial control of the Project came under the Director of Housing. An Interagency Task Force was established to determine and monitor appropriate work programmes. At the end of 2001 the responsibility for the overall Project moved to a generic environmental health department. This was an area that had historically had a health promotion role through previous projects on HIV/AIDS and in addition carries out the statutory infectious disease notification function.

In January 2002 the first Health Promotion Officer was recruited with a second appointed in June 2002. They are both based within a Unit dealing with poor private housing & public health issues. The Public Health Initiative has been jointly led by the local authority, and local NHS Primary Care Trust PH Team.

At present the Council has applied for revenue from the Kings Fund to enable us to write up the processes and findings of the Project. Powers were given in the Health & Social Care Act 2001 for local authorities to review & scrutinise the operation of the NHS in its area from January 2003. The TB Project has been subject to the first Health Scrutiny Commission held by elected Newham

Council members. As a pilot the process commenced in October 2003 and has now reported (March 2003) with a string of recommendations to various health bodies to promote collaborative & partnership working.

Training and Awareness

A TB Training package called "Understanding TB" has been developed. It works on the Cascade Training Principle and it is hoped that the people we train will in turn educate others about TB. The first stage has been to train frontline staff within the Borough, especially those who do home visits to increase their awareness of TB, pass on information and not only protect themselves, but their colleagues and clients. Various council workers have attended the training such as those working in social services, housing and education as well as those working for the NHS Primary Care Trust (PCT). We have also taught mental health and drugs teams. There are plans to work also with schools and the police.

We have two training packages on offer. The first is a Two Hour Intensive Study. This deals with the basic physiology, diagnoses and treatment of the disease. The reason why TB is so high in Newham is also explained. The second is a longer training session lasting for half a day. We expand on the clinical aspects of TB, the principles of cascade training are explained and participants take part in an exercise to make them think about how they can raise awareness of the disease within their own profession. There is time at the end of the training for questions and answers. Indeed, one of the Health Promotion Officers has had TB and is able to talk of the personal experience of having the disease. This adds a human element to the training and a positive message that with the right treatment TB can be cured.

Resources

The London Borough of Newham commissioned a video called "Understanding TB". All participants are shown a video during the training. It tells the stories of two people who live in Newham. Dave, a minicab driver and Marie, a primary school teacher. Both have had TB. They recount their experience of the disease and how it was treated. There is also advice and basic clinical information from respected experts such as TB nurses and Respiratory Clinicians. The information is presented in a simple way so that the majority of people will understand.

The video has been not only been translated, but remade, with more or less the same script. The difference is that the actors in the video are from the minorities that the video is aimed at. We thought that to just dub the video with another language wouldn't be as effective. So far we have the video in Sylheti (Bengali dialect), Turkish and Somali and Tamil. Further translations being made are Spanish, Farsi, Swahili and Urdu.

As with the video, fact sheets and posters have also been translated into different languages. We aim to get the TB prevention message to all of the hard to reach groups within the local community.

Health promotion has always been difficult to evaluate in terms of the immediate impact of what has been learnt. Initial feedback is excellent and we hope this is transposed into long-term awareness of the disease.

Outreach Work

Outreach work is being carried out to see that managers of hotels and hostels used for homeless families and other vulnerable households have an awareness of TB. We also offer them and their staff TB training. The rate of knowledge is generally low in these establishments, however on-the-spot health promotion is given and fact sheets are provided for staff and residents.

The Project also makes use of the Community Information Bus. The vehicle can be parked virtually anywhere, like a mobile library, people can come on board speak to health advocates and health promotion officers and seek advice on health, social, employment and state benefit related issues. There are TV and video facilities on the bus and we are able to show the video there as well as conducting TB awareness questionnaires and providing TB fact sheets as well as advice. We provide incentives such as colouring books and pencils, fresh fruit and toothbrushes and toothpaste. Once again it is good way to give on the spot health promotion to people who use the bus.

GIS Mapping (Geographical Information System)

Our core activity being the improvement of housing conditions we are particularly interested in any causal relationship between housing & the disease. We have undertaken GIS mapping of Newham and TB notifications. The technique uses software that gradually layers information. GIS is used because:-

- Better information leads to better decisions. For example, GIS can be used to help reach a decision about the location where health services needs more impact.
- The information can be presented succinctly in the form of a map to aid the decision making process.
- To focus on the real issues rather than trying to understand data.
- GIS can be produced quickly, with multiple scenarios and can be evaluated effectively and efficiently. Data can be collected one and used many times.
- Improved the management of an organisation and its resources.
- Views complex data in a simple layout.

- Ability to draw out complex data by the click of a mouse e.g. if you want look at the specifics of a property, like door number, name of residents etc.
- GIS used for mapping TB cases.
- GIS can link data sets together by common locational data as addresses, which help agencies share data. By creating shared databases one department can benefit from the work of another.
- There is a vast difference between seeing data presented in the form of a map as opposed to a table of rows and columns. The difference is not simply aesthetic, it is conceptual, the way one sees the data has a profound effect on the connections you make and conclusion you draw from it.

TB and GIS Mapping

GIS is a relatively new tool being used in TB studies and Newham is using it to map out cases of TB in the borough.. In future we hope to be able to find out detailed housing information involving tenure/condition/overcrowding from patients presenting as TB positive via primary health care staff. In addition having access to housing complaints information held in a property database we can identify where complaints have occurred, indicating poor housing conditions and contrast the prevalence of TB cases in these areas. We can also compare TB cases to population, income, overcrowding and homelessness etc. GIS gives us the power to look, not just at an area where an outbreak occurs, but relationships between many, seemingly unrelated factors.

Entry clearance is one of the responsibilities the council has. When a person applies for entry in to the area from abroad they property where they plan to stay have to checked to see that no overcrowding will occur as a result of the person staying there. It has been discovered that properties where entry clearance has been sought are in the areas with a high prevalence of TB. This can indicate that those areas that have high TB rates are accommodated by ethnic groups that have high rates of TB in them. It could also mean that properties that are not high in the standard of living conditions might pose a threat to the health of the people that live in them. For example dampness, overcrowding, lack of ventilation.

Vitamin D Research

Another strand of the project is a research project to look at the effect of vitamin D supplementation in pulmonary TB contacts on immunity to TB infection. Several lines of evidence suggest that Vitamin D deficiency weakens the immune response to TB infection and pre-disposes to activation of latent infection; vitamin D was successfully used as treatment before antibiotics were discovered.

Migrants from India, Pakistan, Bangladesh and Sri Lanka sometimes develop TB shortly after their arrival in the UK, and this coincides with a drop in their vitamin D levels due to the relative lack of sunlight in the UK. (Sunlight is needed to produce Vitamin D in the skin)

Patients with active TB have lower levels of vitamin D than healthy contacts who manage to contain the infection; and vitamin D than healthy contacts who manage to contain the infection. and vitamin D boosts the response to *mycobacterium tuberculosis* when it is added to white blood cells in laboratory experiments.

The study is to answer the question of whether vitamin D supplementation prevents the development of active TB in TB contacts would require very large numbers of subjects to be followed up for several years. First data should emerge in about 18 months time.

Asylum Seeker Screening Programme

Located in NE Newham is the Brian Didsbury Centre. It sees a continuous flow of people coming in voluntarily to be screened. As has been mentioned before, Newham has a very ethnically diverse community and many new entrants to the country seem to come here. Probably because family members are already here and culturally there is an existing infrastructure in terms of shops, businesses and places of worship. Two nurses are employed to carry out screening on the public. It has been found that people often bring other family members and friends when they go for screening.

If TB infection is found patients are referred to the Shrewsbury Road Chest Clinic where X-rays are taken and preventative treatment provided. If TB disease is found then TB treatment is commenced. Where TB Heaf results of 3-4 are identified patients are referred to the Shrewsbury Road Chest Clinic where X-rays are taken and preventative treatment provided. If TB disease is found then TB treatment is commenced.

Conclusion

TB is not a problem unique to Newham. TB is a global problem and disease knows no borders. We know that TB is intrinsically linked with poverty, overcrowding and poor housing. All aspects are here in Newham. Indeed many of them are the very same reasons why TB was such a problem for Londoners over a century ago. Our approach to the problem:-

- 1) To teach TB awareness to all.
- 2) Identification of those at risk from developing TB disease and preventative treatment given as deemed necessary.

- 3) Free TB treatment to those with TB disease.
- 4) The collation of data about the type of housing people live in and where in Newham they live. This information is useful for future environmental and housing planning.

We also believe, probably more than anything else, that it is vital we work with other agencies and individuals inside and outside the borough who have an interest in TB. In the absence of any co-ordinating body for TB we are making a conscious effort to build partnerships with others that work in the field.

TB is everybody's problem and it will require a united effort to tackle the disease.

References

Dye C, Scheele S, Dlin P, Pathania V, Raviglioni MC. *Global Burden of Tuberculosis*. *Jama*, 1999; 282:677-85.

East London and the City Health Authority. *Health in the East End*. Annual Public Health Report 2000/ 2001.

The Independent Working group on Tuberculosis 1998, The prevention and Control of Tuberculosis in the United Kingdom, UK Guidance of the Prevention and Control of Transmission of 1. HIV-related Tuberculosis, 2. Drug-resistant, Including Multiple Drug-resistant Tuberculosis. P5, Department of Health, London.

Index of Multiple Deprivation 2000.

Open University (1986) chapter 4: Infectious disease and human history. *In Medical Knowledge: Doubt and Uncertainty*. Milton Keynes: Open University Press.