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## **(Re)locating the Border: Pre-entry tuberculosis (TB) screening of migrants to the UK**

### **Abstract**

This paper investigates the UK government's recent expansion of pre-entry tuberculosis (TB) screening of visa applicants to include migrants from over 80 countries. I will focus on how the offshoring of infectious disease surveillance, often conducted on behalf of the UK government by a third party, has (re)shaped the spatialities of border control. During last two decades, human mobility has increased exponentially, with worldwide passenger traffic carried on scheduled airlines almost trebling to nearly three billion. Nation states have sought to regulate these mobilities in order manage risk and filter out 'threatening' bodies. In particular, states and transnational organisations (such as the EU) are increasingly outsourcing border controls to overseas territories where migrant bodies are screened prior to departure. Yet, although scholars have conceptualised the relocated border in relation to counter-terrorism and national security, there has been less consideration of the effects of these changes on geographies of health security. This paper seeks to address this gap in knowledge through a qualitative case study of the changing geographies of detection and management of TB at (and beyond) the border in view of recent policy announcements by the UK government. I consider extent to which UK health security enactments have resulted in a 'biosecuritisation' of the offshore border as they continue to be implemented across diverse spatial and political settings. In conclusion, I identify the need for further theoretical and empirical investigation into the impact of these measures on the scales of public health governance and spaces of biosecurity and biosurveillance.

Keywords: Border control; Biosecuritisation; Surveillance; Tuberculosis; Health security; Migration.

## **(Re)locating the Border: Pre-entry tuberculosis (TB) screening of migrants to the UK**

### **1. Introduction**

On 21 May 2012, the UK government announced a dramatic expansion of its pre-entry tuberculosis (TB) screening of migrants from 'high risk' countries and the withdrawal of chest x-ray examinations directed at this group on arrival at London Heathrow and Gatwick airports (Home Office, 2012a). Taken together, these measures represented a significant acceleration by the UK of the 'offshoring' of state border enactments and, when fully implemented, will affect migrants from over 80 countries who seek to remain in the UK for more than six months. This decision, justified by the UK Home Office on both medical and cost grounds, represented a continuation of the shift in national geographies of health security (Braun, 2007), with state borders – particularly in countries in the global North<sup>1</sup> – continuing to be (re)located to territories in the global South. As a result, selected sovereign states are 'sorting' and 'securitising' ever more mobile bodies from a distance (Lyon, 2007a, 2007b).

During the last two decades, facilitated by rapid expansion and progressive liberalisation of global air travel (Budd et al., 2011), human mobility has increased exponentially with worldwide passenger traffic carried on scheduled airlines almost trebling from one billion in 1987 to approximately 2.8 billion in 2011 (IATA, 2005, 2012). Nation states, whilst recognising the need for selected, 'skilled', bodies to foster economic development (Hollifield, 2004), have sought to regulate these mobilities in order to manage potential risks, and filter 'acceptable' bodies from 'threatening ones' (Cresswell, 2012: 650). The national border is a point where the human body is 'dissected', taken apart 'in order to reveal something of the unknown future hidden within' (Amoore and Hall, 2009: 448). This could be revealed through the discovery of a concealed weapon, contraband or infectious bacteria. Accordingly, the border represents a site at which risk governance procedures be enacted. Yet, within a more mobile and globally connected world, borders are 'multiplying and becoming more dispersed' (Cresswell, 2012: 650). In particular, states and transnational organisations such as the EU, frequently sited in the global

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<sup>1</sup> The 'global North' is a term frequently used to by geographers to describe 'developed', often Anglophone countries. As such, it can refer to Australia and New Zealand, as well as the UK and US. Although useful as a frame of reference, it is important that scholars – not least in order to avoid reinforcing representations of the North and South - challenge the conceptualisations inherent within this dualism. For further discussion refer, for example, to Dodds (1999) and Payne (2005).

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North, are 'outsourc[ing]' border controls to overseas territories, with 'foreign' bodies being screened prior to departure (van Houtum, 2010: 962). Although geographers and social scientists have recently conceptualised the relocated border in relation to national security (Amoore, 2006; Adey, 2009; Vaughan-Williams, 2010), there has been less consideration of the effects of these changes on the geographies of health security. Granted, concerns have been raised about the impact of heightened human mobility on the rapid spread of pathogens across state boundaries, particularly following outbreaks of SARS and H1N1 influenza during the last decade (Budd et al., 2011). Nevertheless, the cross-border transmission of TB, a disease which many health professionals working in the middle part of the twentieth century believed could be eradicated, has been less widely researched. Although a longstanding topic of scholarly investigation by historians and social scientists (Farmer, 1997; Gandy and Zumla, 2002; Bell et al., 2006; Welshman, 2006; Welshman and Bashford, 2006), there has been little attention paid to the changing geographies of the detection and management of TB at (and beyond) the border. This is surprising given its increased prevalence in countries of the global North during recent decades, and its representation in the popular imagination as a disease associated with 'immigration' (Bell et al., 2006: 584).

This paper will address this lacuna, and advance theoretical understandings of the intersection between territoriality, biosecurity and surveillance through an empirical investigation of UK government's recent expansion of pre-entry TB screening of visa applicants to include migrants from over 80 countries. I will focus on how the offshoring of infectious disease surveillance, often conducted on behalf of the UK government by a third party, has (re)shaped the spatialities of border control. The paper will develop research from geography, and the social sciences more broadly, and refer to official, or 'grey', literature. In addition, I will draw on in-depth interviews, and correspondence, conducted with public officials working in the border security and health sectors within the UK, and overseas. In doing so, I will seek to identify a new 'biosecuritisation' of the offshore border, highlighting areas for further geographical inquiry.

## **2. Relocating boundaries: redefining borders and (bio)securing bodies**

## 2.1 *Changing borders*

The changing conceptions of sovereign borders has been theorised within the scholarly literature on the spaces of security (Salter, 2004; Adey, 2004, 2009; Amoore, 2006; Vaughan-Williams, 2008; Amoore and Hall, 2009; Philo, 2012). For example, Philo has drawn attention to the existence of 'highly uneven and entangled geographies of security and insecurity' across 'a range of spatial scales' including homes, nation states and modes of travel (2012: 1). According to Philo, these 'uneven' geographies are an integral part of an "establishment' discourse, bound up in the strategising of states and supra-state organisations', particularly in the global North, in response 'to so-called global 'terror', 'criminality' or 'radicalisation'" (2012: 1). Specifically, geographers and political scientists have investigated the impact of state actions on conceptualisation of the border in relation to national security strategies adopted by states following the terrorist attacks in New York on 11 September 2001. For instance, Amoore dissected the concept of the 'biometric border' where scientific technologies and 'managerial' expertise combined to govern traveller mobilities (2006: 36), Adey explored the extent to which pre-emptive securitisation resulted in the mobile body becoming 'a site of observation, calculation, prediction, and action' in the process of moving across borders (2009: 274) and Vaughan-Williams examined how borders were 'changing' and 'multiplying' as a result of increased EU surveillance activities (2008: 63). This research indicated that the border extended beyond the geographical boundaries of the state with much of the actual processing of information, for example, during visa applications, occurring 'upstream', in the receiving country, as states sought to profile and pre-emptively 'secure' the mobile body prior to embarkation (Salter, 2004: 80; see also Adey, 2004, 2009).

According to Elden, in his analysis of the spatial aspects of the 'war on terror', such pre-emptive practices necessitated 'a rethinking of the sovereignty/territory bind', to take account of circumstances whereby one state's (in this instance, the US's) enforcement of the inviolability of its own territory required the 'absolute contingency of sovereignty over territory elsewhere' (2007: 840, 839). Through this creation of 'exceptional legal and biopolitical geographies' (Morrissey, 2011a: 457), the governance of human life (or 'biopolitics') has been played out in selected, often extra-territorial, spaces. These interactions have been widely critiqued. Morrissey drew attention to both the creation of 'defensive'

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biopolitical spaces, such as Guantanamo Bay and Bagram Air Force Base, by the US government, and the considered legal designation and protection of US military personnel, via the securing of 'land access', in order to maintain a 'forward presence' on selected overseas territories (2011b: 287-8). Further, Martin, in his study of US empire, problematised the US territorial intervention as part of its 'war on terror' as a 'discretionary activit[y]', part of a financial logic whereby risk and self-management are borne by the occupied, whilst an 'indifferent' occupying country sought to selectively engage in order to effect certain goals such as security and capital accumulation (2007: 5-6). Yet, whilst this mitigation of risk through territorial acquisition has been theorised by geographers in relation to the 'war on terror' and its associated military activities, less attention has been paid to the particular spatial strategies - not necessarily reliant on states of 'exception' (Agamben, 2005), but significant nevertheless - deployed by sovereign territories to secure their borders against threats posed by infectious diseases.

## 2.2 *Biosecurity and biosurveillance*

Over the last decade, outbreaks of highly pathogenic diseases, such as the 2003 SARS epidemic, the 2009-2010 H1N1 influenza pandemic and the recent spread of *C. difficile* from North America, and their rapid transmission via the global airline network, have highlighted the porous nature of national boundaries (Budd et al., 2009, 2011; Gallagher, 2012; He et al., 2012). The state's political and technical response to these often unpredictable threats, motivated by an imperative to protect its borders, has been widely theorised as 'biosecurity' (Braun, 2007). Whilst infectious disease has historically been represented as a threat emanating from the 'outside' (Kraut, 1995; Nerlich et al., 2009), biosecurity interventions have become an increasingly prominent subject of enquiry as scholars seek to understand various forms of expertise and practices through which disease threats can be articulated and managed, in relation to diverse scenarios including bioterrorist incidents (Collier et al., 2004), large-scale natural disasters (Collier and Lakoff, 2008) and the securitisation of populations, networks and social welfare (Bingham et al., 2008).

Braun, in his discussion of 'emergent risks', has argued that practices of biosecurity have changed the geographies of health security, and, with it, the whole notion of surveillance and control (2007: 6). Increasingly, states such as the US were, in an attempt to contain existing and future pandemics,

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deploying strategies inspired by the military, including acting extra-territorially (Bingham et al., 2008; Braun, 2007; Collier and Lakoff, 2008). Indeed, in making a decision to take the fight against disease 'over there' before it 'reaches here' (Braun, 2007: 22), states in the global North, in particular, were engaging in geopolitical manoeuvres analogous to those which formed part of the 'war on terror'. Similarly, Ingram, in his analysis of US post-9/11 support of HIV/AIDS interventions in Nigeria, contended that the actions of the US government resulted in 'biopolitics' 'being projected on to, and being combined with, geopolitics' as part of the process of imagining, contesting and controlling global space (2007: 512; see also 2010a, 2010b). Through their problematisation as security threats – alongside terrorism and weapons of mass destruction – infectious diseases were thus equated with military activities, with the US Department of Defense, for example, taking a prominent role in that country's HIV/AIDS prevention activities (Ingram, 2010a). In addition, biosecurity enactments were present in states, and sites, not subjected to such intensive oversight by a global 'power', as contemporary disease preparedness created new geographies of containment and control *within* many countries. These measures often commenced before the passenger entered an airport and continued long after arrival at their final destination (Warren et al., 2010). During the SARS epidemic and the more recent H1N1 influenza pandemic, state interventions included: enforced home quarantine; proscription of travel on public transport; and prohibition of gatherings in public spaces. At the international airport, moreover, health screening technologies - such as thermal image scanning - have increasingly been deployed (Welshman 2006; Budd et al, 2011). The effectiveness of these responses, often motivated by political imperatives, such as the desire of national governments to be 'visible' (Barker, 2012), have been questioned by clinicians (Abubakar, 2009; Cowling et al, 2010; Priest et al, 2011).

Increasingly, therefore, states and transnational institutions are harnessing surveillance technologies and data-sharing networks to help achieve their biosecurity goals (Warren et al., in press). These tools and techniques, sometimes referred to as systems of 'biosurveillance' (Lyon et al., 2012; Parry, 2012), monitor data from published news sources in order to locate infectious disease 'events' as they emerge in 'real-time'. At the global scale, they include the Global Public Health Intelligence Network (GPHIN), HealthMap and BioCaster. All three automatically gather and analyse unstructured and open source information, with GPHIN in addition employing staff to verify the harvested data (Keller et al., 2009;

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Lyon et al., 2012). The global reach of these systems, combined with their location in countries of the global North (where expertise is deemed to be situated) has led to some criticism that they act predominantly in the interests of these specific countries (Weir and Mykhalovskiy, 2006; Bingham et al., 2008; Collier and Lakoff, 2008; Ingram, 2010b). Furthermore, in relation to TB, more targeted systems of cross-jurisdictional bio-information surveillance are under development, collecting information on individuals screened for the disease prior to entry on behalf of specific countries such as the UK and Australia (IOM, WWWa; DIAC, 2012). Chambers et al, in their analysis of the UK's response to the 2009-2010 H1N1 pandemic influenza outbreak cautioned that such embedded biosecurity and biosurveillance systems exerted a 'spatial homogeneity' and imposed a 'biosecurity logic' which masked the differentiated patterns of disease spread (2012: 744). Moreover, Barker, in her discussion on the anticipatory governance of the H1N1 outbreak, contested that the UK's 'hyper-sensitised global health security architecture' deployed during the H1N1 influenza outbreak, with its arguable over-reliance on modelling data to predict future pandemic trends, generated a predetermined 'bureaucratic reflex', a security response which disregarded the epidemiological and spatial 'actualities' of the disease (2012b: 701; see also, Anderson, 2010).

These connections between government, power and space have been the subject of significant, Foucauldian-inspired, work in geography (Philo, 1992; Crampton and Elden, 2007; Ingram, 2010a, 2010b). This stimulus has been used specifically to problematise state actions against potentially infectious populations and bodies as acts of 'governmentality'. According to Ingram, power exercised in this way is 'tactical and situated, but capable of being networked across different sites' (2010a: 295). A state's attempt to 'biosecuritise' the border against, and manage the response to, the spread of infectious disease during transmission can have a totalising effect. 'Biosecuritisation', defined in this paper as interventions aimed at safeguarding specific sites against pathogenic threats, has been discussed in the institutional context in reference to hospital provision (Fisher and Monahan, 2011) and trading in synthetic blood (Weston, 2013). Surprisingly, it has yet to be critiqued by geographers in relation to state anticipatory actions aimed at securing the border in order to pre-empt any disease outbreak (Amoore and de Goede, 2008; Adey, 2009; Anderson, 2010). The UK government's recent expansion of its pre-entry TB screening programme, as one measure to 'prevent and control TB in the UK' (Home Office, 2012a), both exemplifies biosecuritisation and, through the surveillance of bodies



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located beyond sovereign territory, extends its geographical reach. I will critique the processes involved in (re)locating these enactments to sites 'beyond the shore', using pre-entry screening of TB as a case study.

Tuberculosis has been marked by powerful associations since colonial times, and has frequently been cast as a disease of migration (Kraut, 1995; Bashford, 2002; King, 2003; Coker and Ingram, 2006; Welshman, 2006). Its resurgence in many European and North American countries since the 1980s - and clear differences in TB morbidity rates 'according to race, ethnicity and place of birth' (King, 2003: 40) - has, according to King, led to 'renewed concern over the borders that separate people' (2003: 40). More recently, public anxiety, often stoked by national media reporting on infectious disease outbreaks (Bell et al., 2006; Warren et al., 2010), has depicted the need to guard against the threat from 'within' a state' (Budd et al., 2011: 276). It is in this context that the UK has, over the last decade, extended its surveillance of the disease beyond its borders through pre-entry screening of migrants. A pilot programme, commencing in October 2005, was soon expanded to cover migrants from 15 countries, all located in the global South, where the disease was deemed to be 'highly prevalent' (UKBA, 2012a) (refer to Table 1). In May 2012, it was further extended, to affect migrants from 84 nations. As the only pathological condition to be screened by the UK government on a 'wholesale basis' (UKBA, personal communication, 2 July 2012), the increased detection and management of TB through offshore screening wields significant geopolitical potential. Consequently, there is a need for geographers to investigate, and critique the governance of these enhanced biosecurity measures across global, national and local spatial settings in order to highlight the ethical, epidemiological, logistical and financial dilemmas presented by these enactments in an age of significant cross-border human mobility (Budd et al., 2011). Yet, in spite of research into historical approaches to screening for infectious disease (Bashford, 2002; Fidler, 2006) and analysis of the global public health governance of the (aero)mobile body in relation to changing patterns of aviation travel (Budd et al., 2009, 2011), there has been surprisingly little examination within the discipline of geography of the expanding state practices of extra-territorial sanitary border control.

### **3. Pre-entry screening for tuberculosis in the UK**

### *3.1 Methods*

Empirical research was conducted from May 2012 to January 2013. An analysis was undertaken of policy documents, technical guidance and written statements produced by selected UK government departments and agencies, including the Department of Health, the Home Office, the UK Border Agency (UKBA) and the Health Protection Agency (HPA), which became part of Public Health England (PHE) in April 2013. A similar investigation was undertaken into grey literature produced on offshore tuberculosis screening by equivalent institutions in the US, Australia, Canada and New Zealand, and into related documentation produced by inter-governmental agencies such as the World Health Organization (WHO) and the International Organization for Migration (IOM). This review resulted in the identification of points of contact, including named individuals with expertise in policy, security and public health based in the UK and overseas, who were approached for interview. Due to time and cost constraints, interviews took place remotely, via telephone or Skype. Where full interviews were not possible, a list of questions was sent electronically for answer. As a result, data was collected from stakeholders from UK government agencies, with responsibilities for security and health, public officials holding similar posts in the US, Australia, Canada and New Zealand, and a non-profit organisation (NPO) engaged in pre-entry screening in selected overseas countries. Respondents were asked about the genealogy and governance of the UK's pre-entry screening procedures for TB, and for information on: antecedent programmes; collaborations with other countries engaged in similar activity, including the sharing of 'best practice'; partnerships with third sector or private organisations; variations in methods of disease detection; monitoring and quality control; and plans for the expansion of existing pre-entry screening programmes. Further data on geographical coverage, number of visa applicants screened and costs of testing borne by individual migrants were obtained from official sources, such as the UKBA, the UK Department of Health and HPA, whilst information on comparative disease detection schemes was gathered from scholarly studies into pre-entry and port of entry TB detection, largely published in the medical and public health literature. The data collected from this combination of sources facilitated analysis of the operation and governance of the UK's pre-entry TB screening procedures.

### *3.2 Early debates*

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Tuberculosis is a bacterial infection, caused by the *mycobacterium tuberculosis* bacterium. Approximately 5-10% of individuals infected with the condition become ill at some point in their life. Only pulmonary (lung-based) tuberculosis is contagious, and in that instance, the bacteria are usually transmitted through coughing or sneezing, during close and prolonged contact. According to the World Health Organization (WHO) data, the absolute number of TB cases worldwide has been falling since 2006 (WHO, 2012). Yet, the global burden of disease remains significant, with an estimated 8.7 million new cases emerging in 2011 (WHO, 2012). In the UK, the number of reported cases has continued to increase, although at a slower rate in recent years, rising from 8,363 in 2006 to 8,963 in 2011 (HPA, 2012). The UK HPA, the government agency responsible for public protection against infectious diseases until its abolition in April 2013, reported that TB prevalence among the non-UK born population was '20 times the rate in the UK-born' (HPA, 2012: 4). Nevertheless, as the *mycobacterium tuberculosis* bacteria can remain latent in the infected body for many years, detection can be difficult. In particular, the reliance on chest x-rays for port of entry screening (and as part of the pilot pre-entry assessments) at London Heathrow and Gatwick airports was seen to be problematic as this technique overlooked latent pulmonary cases (Moore-Gillon et al., 2010). This represented a significant weakness, as, in 2011, over three quarters of tuberculosis cases reported in the UK among those born overseas were diagnosed two or more years after arrival into the country (HPA, 2012).

The UK has a long history of engaging in port of entry assessments for tuberculosis, with the 1905 Aliens Act providing for the health screening of new migrants through the appointment of a Port Medical Inspector (UKBA, 2012a). Moreover, during the 1950s and 1960s, there was an increased discussion in policy circles - promoted in particular by Enoch Powell when Minister of Health (1960-1963) – of the use of offshore screening (Welshman, 2006)<sup>2</sup>. Nevertheless, objections were raised to these proposals within government, not least on economic grounds. The UK required overseas workers to facilitate post-war economic recovery and did not wish not to antagonise key trading partners, such as India and Pakistan<sup>3</sup>. In addition, medical professionals voiced concerns about the difficulty of

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<sup>2</sup> The proposals put forward were based on the so-called 'Australian model' whereby potential immigrants were ('irrespective of nationality or length of stay') required to possess a medical certificate indicating 'a sound state of health' (Welshman, 2006: 298)

<sup>3</sup> In addition, UK employers, desperate for labour in circumstances where demand outstripped supply, expressed concern about potential difficulties in declaring workers 'free' from tuberculosis, a factor which may delay, and add to the cost of, staff recruitment (Welshman, 2006: 299).

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ensuring adequate standards of medical certification in the country of origin, and at the potential expense of sending UK doctors abroad to oversee certification of migrants (Welshman, 2006: 299). Thus, although following the promulgation of the 1962 Commonwealth Immigrants' Act, arrangements for pre-entry medical examination were set up in selected Commonwealth countries, the UK government elected not to conduct extra-territorial screening (Welshman, 2006: 301). Nevertheless, as the same legislation permitted port health authorities and immigration officers to refer certain categories of people for medical examination on-entry, chest radiographs were introduced at London Heathrow and London Gatwick airports from 1965 (Welshman and Bashford, 2006). Yet, until its increased use against asylum seekers from the 1990s, this technology formed, in the UK, only a 'minor part of medical examinations as a whole' (Welshman, 2006: 305). Instead, devolved, community-based enactments, whereby migrants were permitted to enter the country as long as they reported their arrival to a local medical officer, took precedence (Welshman, 2006: 308).

### 3.3 Pre-entry screening

In the last decade, UK policy has shifted towards screening migrants prior to their arrival in the host country. This has been motivated by factors including increased passenger flows to regional airports, concerns about the efficacy of on-entry screening at London Heathrow and London Gatwick airports and lower than expected migrant registration with community-based GPs once in the UK (UKBA, 2012a). Domestic political considerations, in particular strong anti-immigration sentiment increasingly expressed by sections of UK society (Light and Young, 2009; Mulvey, 2011), were also likely to have driven government action in this area. However, these concerns were not generally intimated within the official literature on this topic. In 2005, the UK government announced pre-entry TB screening of applicants for visas permitting stays of more than six months. Aimed at providing 'secure borders', the screening - funded by the migrant - was targeted at 'high risk areas', with the additional requirement that those diagnosed with TB 'seek treatment at home *before* being allowed to enter the UK' (Home Office, 2005: 25-26, italics added). The initial set up costs of the pre-entry programme were estimated to be £1.1m, with subsequent running costs being 'recouped' through the fees (approximately US\$50 - US\$70) charged by in-country clinics (UKBA, 2012a). Official documents made it clear that the costs of any required treatment would 'fall upon visa applicants and overseas health authorities and not on the UK taxpayer' (UKBA, 2012a). The pilot scheme was initially implemented in four countries -

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Bangladesh, Tanzania, Thailand and Sudan - amid concern that it may encourage behaviour that would, in the words of one UK expert, "tend to hide the presence of the disease" (Sommerfield, in Khanal, 2005: 726). By the end of 2007, it had been expanded to include migrants from 15 'high-risk' states (HoL, 2010). Significantly, the screening did not always take place in the migrant country of origin. Clinics in some states, for example, Ghana, conducted screening on behalf of other geographically proximate countries, such as Cote d'Ivoire, Burkina Faso, Togo and Niger (refer to Table 1). These arrangements further complicated the extra-territorial governance of migrant health.

\*\*\*Insert Table 1 here\*\*\*

The screening procedures, managed during the pilot stage on behalf of the UKBA by the International Organization for Migration (IOM), an inter-governmental agency<sup>4</sup>, followed a protocol, agreed jointly by the UK government and affected 'high risk' states (UKBA, 2012a). In most cases, they commenced with a chest x-ray, although exceptions were made for children under the age of 11 and pregnant women<sup>5</sup> (UKBA, 2012a, 2012b). Applicants found to have radiological abnormalities consistent with TB also undertook three sputum smear tests (UKBA, 2012a). This involved the patient being instructed to cough up a sample of sputum, the thick fluid produced in the lungs and the airways leading to the lungs, on three consecutive days. A thin layer of the sample (the smear) is placed on a glass slide, a series of stains are applied and it is examined under a microscope for signs of the TB bacteria (GHE, 2012). In 2007, an 'enhanced' screening protocol was introduced by the UKBA and IOM, ensuring that individuals with clinical findings highly suggestive of infectious TB underwent additional bacteriological (sputum culture) tests (UKBA, 2012a: 26). These tests, involving the cultivation and identification of *mycobacterium tuberculosis* in laboratory conditions, provided a 'definitive' diagnosis of the disease (GHE, 2012). However, the slow growth of the TB culture, meant it took an average of four weeks to

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<sup>4</sup> The IOM was established in 1951. Its membership comprises 149 states (IOM, WWWb).

<sup>5</sup> UKBA guidance stated that children aged under 11 should have a health questionnaire completed on their behalf and undergo a simple risk assessment to determine whether they were at risk of pulmonary TB (UKBA, 2012b). The use of chest x-rays to screen pregnant women was more complex, dependent on a number of factors including: the stage of pregnancy; whether the applicant has recently undergone another x-ray; and the discretion of the clinician. Applicants unwilling - or unable for medical reasons - to undertake chest x-rays were required to provide sputum specimens in a designated laboratory for smear and culture tests (UKBA, 2012b).

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achieve a conclusive result, and four to six weeks longer if also testing for drug susceptibility (GHE, 2012)<sup>6</sup>. According to a senior medical officer employed at an NPO, such delays were initially perceived in the UK to be an 'obstruction' (personal communication, 15/11/12). However, evidence from other countries of higher detection rates resulting from the culture tests persuaded the UK government to add this technique to its pre-entry screening protocols (UKBA, 2012a; UKBA, personal communication, 02/07/12). Sputum culture testing was thus phased in across the screening centres between October 2007 and December 2009, with applicants who registered positive during the assessment procedures being denied a certificate of clearance by the IOM (UKBA, 2012a). According to the UKBA's own analysis, based on data supplied by the IOM and estimates from the UK National Institute for Clinical Excellence (NICE), the pilot phase of the project generated potential savings to the NHS of approximately £2.1m from its inception to August 2010 (UKBA, 2012a).

Whilst pre-entry screening of mobile bodies by sovereign states for infectious disease is not a new occurrence (Gandy and Zumla, 2002; King, 2002, 2003; Bell, et al., 2006), the UK's enactments for tuberculosis represented a more comprehensive 'biosecuritisation' of the migrant body, spatially and temporally. Since the launch of the pilot in 2005, a sophisticated apparatus has been developed by the UK state to allow potential migrant bodies to be examined extra-territorially, and for sensitive personal and biological data to be collected, scrutinised and shared across borders. As part of the pre-entry TB detection programme, a central database has been developed by the IOM to 'keep records of all applicants undergoing testing' (IOM, WWWa). Information held on this database included applicant name, gender, nationality<sup>7</sup>, country of application, health details and screening test results (UKBA, 2012a; IOM, 2010). During the pilot stage, all the data bar individual names was shared with the UK government, representing the transfer of details of over 550,000 applicants from the initiation of the pre-entry screening programme until December 2011 (UKBA, 2012a; IOM, 2012)<sup>8</sup>.

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<sup>6</sup> As the number and proportion of drug resistant TB cases increases (HPA, 2012; WHO, 2012), this form of testing has become increasingly necessary. Globally, 3.7% of new cases and 20% of previously treated cases were estimated to have multi drug resistant (MDR) TB (WHO, 2012: 2). In the UK, 1.3% of new cases and 5.6% of those with a previous history of TB were diagnosed with MDR TB (HPA, 2012: 10). 95% of MDR TB cases in the UK were born outside of the country (HPA, 2012: 10).

<sup>7</sup> This was not always clear due to migrants resident in certain countries being screened at centres in other countries (for example nationals of Laos may be assessed in Thailand) (UKBA, 2012a).

<sup>8</sup> It is unclear exactly which UK government agencies have access to this pre-entry screening data, although the UKBA Review suggested it has been shared with the HPA and the Department of Health (UKBA, 2012a).

### 3.4 Expansion: from single service provider to 'mixed economy'

The current expansion of pre-entry screening for tuberculosis, announced by the Home Office in May 2012 and being implemented in three six-monthly phases between July 2012 and December 2013, will extend surveillance to migrants from a further 69 countries (refer to Table 2). Based on existing Home Office data on migrants granted leave to enter the UK for over six months, when fully implemented, the expanded scheme may result in the assessment of an additional 350,000 individuals per annum for tuberculosis (refer to Table 2). By contrast, the IOM screened approximately 98,000 UK visa applications from the 15 pilot countries in 2011 (IOM, 2012: 33). However, and significantly, in extending pre-entry screening to other countries, the UK government has indicated that the IOM will not be the only service provider and it is, therefore, highly unlikely that the details of all visa applicants will, at the point of collection, appear on the same database. Instead, UK officials will aim for a 'mixed economy' of public, private and third sector providers (UKBA, personal communication, 02/07/12; UKBA, 2012a).

\*\*\*Insert Table 2 here\*\*\*

This diversification of screening suppliers across spatial settings by the UK government can be theorised as a logical outcome of neoliberal governmentality, with the state seeking to divest service provision to multiple suppliers (Fyfe, 2005; Ong, 2007; Ferguson, 2010). The extra-territorial nature of these interventions attests to dynamics associated with the neoliberal such as 'mobility of practice, responsiveness to contingencies and strategic entanglements with politics' (Ong, 2007: 3). As Ong has argued, neoliberal governmentality is not a 'hegemonic order' or a unified set of practices (2007: 7). Rather, it is shaped by a 'global assemblage', sites in which individual and collective existence are subject to 'technological, political, and ethical reflection and intervention' (Collier and Ong, 2005: 4; see also Allen, 2011). Empirically, these interventions raise important questions for the governance of pre-entry TB screening across geographical boundaries. For example, to what extent can a national government enforce varied screening enactments across diverse spatial settings? How can standards of certification - a concern raised by medical professionals when UK government ministers suggested



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pre-entry screening five decades previously - be translated across boundaries? How is access to sovereign territories, and individual migrant bodies located in those settings, negotiated? Interventions on behalf of the UK government may involve the IOM continuing to screen migrants in states where it already has a presence, due to its pre-entry assessment work for other nations of the global North such as US, Canada and Australia. Alternatively, screening may be conducted by assorted providers from public, private or third sectors. In countries with particularly large populations, such as India from where over 120,000 migrants were granted leave to enter the UK in 2011, the 'mixed economy' has been applied *within* another state's boundaries, with pre-entry TB screening - introduced in August 2012 - being enacted largely by private physicians approved by the UKBA (UKBA, 2012c).

Significantly, the approved clinicians in India were also acting on behalf of Australia, Canada, New Zealand and the US, indicative of increased transnational collaboration by the countries of the global North in the governance extra-territorial screening for infectious disease. Much of this joint working has been through the Five Country Conference (FCC), a prominent forum which has adopted a leading role in the oversight and enactment of cross jurisdictional TB assessments. The FCC, arguably one of Philo's 'supra-state organisations' (2012: 1), has been in existence with varying membership for over a decade. It has a broad remit of encouraging dialogue among government officials on security and immigration matters (Young, 2000; Canada International, 2011), and currently comprises the UK, US, Canada, Australia and New Zealand<sup>9</sup>. In 2012, the UKBA reported that they had worked with other FCC countries to harmonise pre-entry screening arrangements, learn lessons and pool expertise in countries where the UK does not currently operate (personal communication, 30/10/12). According to a New Zealand public official, this collaboration enables member states to identify 'reliable physicians and laboratories offshore' to screen individuals intending to travel to FCC countries (personal communication, 6/11/12). In addition, the FCC are working together to 'fully harmonise [these] lists of approved physicians and laboratories' (public official, personal communication, 6/11/12). The securitisation of the migrant body, and with it the biosecuritisation of the national border, is therefore ever more dependent on interactions between local, state and transnational agencies. Practices become transformed as they are implemented across diverse spatial and political settings (Ong, 2007),

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<sup>9</sup> Prior to New Zealand joining in June 2009, the FCC had operated as the Four Country Conference.



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opening up avenues for further investigation in relation to scales of public health governance (Bell et al., 2012) and spaces of biosecurity and biosurveillance (Warren et al., in press).

#### **4. Governing (multi-)border biosecuritisation**

##### *4.1 Multi-scalar governance*

The increased monitoring and management of tuberculosis incidence among migrant populations *within* their country of origin by states including the UK, US, Canada, Australia and New Zealand requires further interrogation of the interactions involved in public health governance across various geographical scales. These trends have been recently analysed in the geographies of health literature on the 2009-2010 H1N1 pandemic in relation to the tensions between national policy-making and local responses within the UK (Chambers et al., 2012) and emergent local-national-global dialogues during the unfolding of an unexpected pathological event (Bell et al., 2012). Yet, there has been far less investigation into the motivations behind the enactment of biosecuritisation measures, the spatial assemblage of the apparatus used, and its outcomes in terms of governance and geopolitics (Allen, 1999). Research into this topic matters, as the screening of bodies beyond the border represents not just as extension of sovereign-judicial power, but also the administration of potential ban on transnational mobility conditional on receiving treatment. In the case of pre-entry assessments for TB, the state has sought to influence and manage operations - including screening, assessing and documenting of migrants - over localities situated in another sovereign territory potentially many thousands of miles away. These operations are thus dependent on the collaborative work of non-governmental agencies or approved physicians. Arguably, this shift may necessitate a more fragmented system of health governance, with the state dependent on, and required to assemble, information collected by numerous providers.

At the same time, the requirement for effective governance of pre-entry TB screening has resulted in the construction of new alliances between nations, as states engaged in pre-entry screening interventions sought to 'scale up' (Mangham and Hanson, 2010: 85), harmonising their practices and sharing resources (UKBA, 2012a). For the UK this was important as, although its pre-entry TB

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screening programme has been in place for almost a decade, it was not the first country to engage in this activity, with the US Centers for Disease Control and Prevention (CDC) issuing Technical Instructions for pre-departure TB screening of refugees in 1991 (CDC, 2012). Transnational alliances, such as the FCC, developed in response, motivated by national imperatives in their desire to biosecuritise their borders. They were formed independently of, and operated in parallel with, established institutions of public health governance, such as the WHO. Thus, state strategic priorities not only drove actions at the local scale, but also in countries across the globe. Increasingly, and building on Amoore and Hall, these interventions seek to disassemble the body of the migrant, examine it against specific criteria and then reconstitute it as a 'risk' or an 'anomaly' (2009: 453-4). Practices of biosecuritisation are ever more being undertaken by a select group of nations, based in the global North, and applied within, and across, multiple spatial settings, including groups of countries, specific territories, categories of individuals and the individual migrant body. These enactments necessitate a selection of screening methods, the appointment of clinicians and technical staff, provision of appropriate assessment criteria, and the collection and sharing of migrant personal data. Yet, these processes are not homogenous. Within the biosecurity apparatus, spaces remain for negotiation, and potential circumvention, of some of the procedures.

#### *4.2 Biosecuritisation of the migrant body*

Prior to departure, the body of the migrant is biosecured (Salter, 2004; Adey 2004, 2009). Depending on the applicant's circumstances, the individual is subjected to chest radiography, and bodily samples are sent for laboratory testing. If active pulmonary TB is diagnosed, the positive *mycobacterium tuberculosis* cultures undergo drug susceptibility testing in a designated laboratory, whilst the applicant is referred for treatment for a minimum six month period. As the availability, quality and possibly cost of the treatment will vary from country to country, this programme arguably entrenches existing global health inequalities (Gandy and Zumla, 2002; Sparke and Anguelov, 2012). In addition, the home country physician is obliged to report positive cases to the UK immigration authorities 'as they shall direct' (UKBA, 2012b: 10). If an applicant is judged not to have active pulmonary TB, a certificate is issued with a validity of six months (UKBA, 2012b). Migrant bodies at various points across the globe are thus biosecuritised, regulated and continually monitored by the UK authorities as an act of 'governmentality' (Ingram, 2010a). The practices of the physician in the locality are written into the

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UKBA's *Technical Instructions* (UKBA 2012b) and their 'processes and protocols [...], the screening process and the laboratory site' are open to possible 'visit, audit and evaluat[ion]' (UKBA, 2012b: 12). In this way, to develop Ingram's work on biosecurity and international responses to HIV/AIDS, state governmentality has become 'stretch[ed]' and applied to 'a range of sites, spaces and positionalities' across the globe (2010a: 300). However, variations may exist in the intensity of this 'governance-at-a-distance' (Barnett, 2005: 9; see also Allen, 2003, 2011), with the 'effective' biosecuritisation dependent on various logics and practices of physicians, technicians and public health infrastructure located in diverse overseas territories. Accordingly, Allen, in a similar fashion to Collier and Ong (2005), promotes the 'assemblage' as way of thinking through how institutional arrangements of power may hold together in spite of, as in the case of offshore TB screening, differences in institutional arrangements and the 'various power plays' that 'shape the politics of regions and nation states' (2011: 154).

Certainly, this notion of assemblage opens up avenues of enquiry about the aforementioned 'various middle ranges of agency' (Barnett, 2005: 9), many of which are currently being negotiated between the UK and individual countries of the global South, and the extent of their biosecuritisation of the migrant body. Indeed, the power relations between the UK and the affected populations in the South are, arguably, far from being 'centred' (Allen, 2011: 154). The promotion of a 'mixed economy' on the health screening provision, and the potential for variations in data collected from diverse organisations in public, private and non-profit spheres, may result in geographically uneven enactments which are more fragmented, disrupted and subject to contestation (Ong, 2007; Ferguson, 2010). Moreover, the successful outcome of this policy is dependent on cooperation from countries and migrants in the South, leaving more scope for autonomy and individual action than some commentators (for example, Weir and Mykhalovskiy, 2006, 2010) may allow. Access to sovereign territory requires negotiation and the extent to which the governance of extra-territorial health interventions can reach across borders may be influenced by economic and geopolitical factors (Allen, 2003, 2011; Ingram, 2010a, 2010b). For example, there remained concerns within the UK government - similar to those expressed by officials during the 1950s and 1960s (Welshman, 2006) - that measures to introduce pre-entry screening to India may damage trading relations with a strategically important nation (NPO, personal communication, 15/11/12). Moreover, medical professionals have been alert to difficulties in gaining access to specific countries, for example, China, Malaysia and Indonesia (NPO, personal communication, 15/11/12;

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UNHCR, 2012). Although pre-entry screening is now underway, the means of implementation remain open to discussion in many of the 69 additional countries with a high incidence of TB. The successful operation of a large scale disease assessment, particularly in more populous states with burgeoning mobile populations, is therefore subject to negotiation and contention. This is in part indicative of the changing geopolitics and shifting power relations between countries of the global North and rising economic powers located in the South (Warren et al., in press).

## 5. Conclusion

The expansion of pre-entry screening for TB by the UK government to over 80 countries including the two most populous nations, India and China, raises new questions about the geographies of biosecurity and public health surveillance. I have sought to identify how the changing conceptions of borders, in part shaped by increased personal mobility, have resulted in the demarcation of new spaces of (bio)security by states through actions which extend beyond their sovereign territory. It is within these spatial settings that the UK and other countries of the global North have endeavoured to orchestrate particular forms of governmentality to contain and control the bodies of potential migrants prior to their departure from their homelands. That this process has been exerted extra-territorially is clear by reference to the extent to which health assessment protocols, instructions to physicians, certifications, audits, siting of laboratories and sharing of applicant biological data are being managed by the UK authorities. This form of surveillance has been problematised as exercising spatial homogeneity and imposing a biosecurity logic on infectious disease events (Chambers et al., 2012). Yet my investigation suggests that, as the number of countries subject to these biosecuritisation processes continues to expand, space exists for greater diversity of practice as states seek to negotiate the screening of applicants with affected countries, and geopolitical and resource considerations ensure that the biosecuritisation of these additional spaces and populations is enacted through a diverse range of service providers.

The state's use of offshore biosecurity processes to safeguard against the threat of TB has, therefore, advanced in complex and dynamic ways. Countries of the global North desire to protect 'their'

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populations against infectious diseases in an era of increased population mobility. Yet, these states also require inward migration to improve economic growth and remain competitive in the global marketplace. A mutual dependency therefore exists between states of the North and the South, although, in terms of biosecurity, many of the spaces and sites of contestation have shifted to the countries in the developing regions. There is a role for geographers in continuing to critically engage with these spatialities in their different forms and in assessing the scalar contradictions that exist between the varied local origins of infectious diseases and their global reach. In these ways, geographical research can make a significant contribution to the broader theoretical and policy debates surrounding offshore public health interventions.

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**Table 1**

Pilot countries subject to pre-entry screening for TB by the UK

Country (site of screening, if different)	Estimated TB rate / 100,000 population <sup>a</sup>	Number of migrants granted leave to enter the UK (2011) <sup>b</sup>	Country of application, if different	Oversight of testing
Bangladesh	411	10,195		IOM
Burkina Faso <sup>#</sup>	85	35	Ghana	
Cambodia	817	110		IOM
Cote D'Ivoire <sup>#</sup>	250		Ghana	
Eritrea <sup>##</sup>	151	530	Kenya	
Ghana	92	3890		IOM
Kenya	291	2110		IOM
Laos <sup>###</sup>	540	30	Thailand	
Niger <sup>#</sup>	166	20	Ghana	
Pakistan	350	52,310		IOM
Somalia <sup>##</sup>	523	1310	Kenya	
Sudan	201	1080		IOM
Tanzania	177	840		IOM
Thailand	161	9135		IOM
Togo <sup>#</sup>	96	35	Ghana	

<sup>#</sup>Applications processed in Ghana

<sup>##</sup>Applications processed in Kenya

<sup>###</sup>Applications processed in Thailand

<sup>a</sup> Source: WHO, 2012. All figures are recorded by the WHO as including HIV and TB.

<sup>b</sup> Source: Home Office, 2012b. Figures exclude foreign national visitors, passengers in transit and passengers returning after temp absence abroad.



**Table 2**

Additional countries subject to pre-entry screening for TB by the UK  
from July 2012

Country	Estimated TB rate / 100,000 population <sup>a</sup>	Number of migrants granted leave to enter UK (2011) <sup>b</sup>
Afghanistan	351	3,280
Angola	413	370
Bhutan	230	30
Bolivia	205	135
Botswana	360	315
Burundi	192	35
Cameroon	299	1,185
Cape Verdi	230	60
Central African Rep	510	0
Chad	191	5
China	104	60,825
China, Hong Kong SAR	99	7820
China, Macau	94	125
Congo	473	260
Congo, Dem Rep	512	75
Djibouti	840	20
Ecuador	98	445
Equatorial Guinea	267	20
Ethiopia	237	615
Gabon	505	50
Gambia	455	590
Guinea	242	145
Guinea-Bissau	268	30
Guyana	121	300
Haiti	307	55
India	249	123,530
Indonesia	281	9,085
Kazakhstan	168	2,575
Kiribati	462	0
Korea, Dem People's Rep	422	5
Korea, Rep of	149	8,885
Kyrgyzstan	175	150
Lesotho	411	25
Liberia	453	60
Madagascar	428	230
Malawi	164	140
Malaysia	101	10,255
Mali	90	60
Mauritania	686	15
Micronesia	294	0
Moldova	234	285
Mongolia	348	260

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Morocco	131	1,770
Mozambique	490	70
Myanmar	506	440
Namibia	729	120
Nepal	243	9,120
Nigeria	171	19,720
Papua New Guinea	534	30
Peru	117	1,145
Philippines	484	52,090
Russian Fed	124	10,760
Rwanda	117	110
Sao Tome & Principe	151	15
Senegal	200	230
Sierra Leone	1,370	470
Solomon Islands	162	0
South Africa	768	9,310
Suriname	51	10
Swaziland	854	35
Tajikistan	350	85
Timor-Leste	701	15
Tuvalu	381	0
Uganda	183	935
Ukraine	104	5,230
Uzbekistan	177	310
Vietnam	323	3,410
Zambia	352	610
Zimbabwe	547	2,060
<b>Total</b>		<b>350,450</b>

<sup>a</sup> Source: WHO, 2012. All figures are recorded by the WHO as including HIV and TB.

<sup>b</sup> Source: Home Office, 2012b. Figures exclude foreign national visitors, passengers in transit and passengers returning after temp absence abroad.