TECHNICAL REPORT

Migrant health: Background note to the 'ECDC Report on migration and infectious diseases in the EU'

www.ecdc.europa.eu

ECDC TECHNICAL REPORT

Migrant health: Background note to the 'ECDC Report on migration and infectious diseases in the EU'

The European Centre for Disease Prevention and Control (ECDC) would like to acknowledge the contribution of the technical expert panel in the development of the ECDC Background note to the *ECDC Report on migration and infectious diseases in the EU*. The technical expert panel consisted of the following members:

Tony Barnett
Manuel Carballo
Mary Haour-Knipe
Vincent Houdry
Jane Jones
Ulrich Laukamm-Josten
Martin McKee
Cinthia Menel-Lemos
Mark Muscat
Darina O'Flanagan
Maria Teresa Paixão
Roumyana Petrova-Benedict
István Szilárd
Suzanne Verver
Andrzej Zielinski

Stockholm, July 2009

Table of contents

Introduction

Migration has historically played a major role in shaping societies and influencing demographic changes. The current globalisation of societal interactions with its close link to movements of people and goods can have implications on the appearance, presentation and evolution of public health challenges. Migration should be seen as one of the components of the globalisation process and its impact on society interpreted as such.

The United Nations defines a migrant as 'any person who lives temporarily or permanently in a country where he or she was not born, and has acquired some significant social ties to this country'. In Eurostat data collection, a migrant is a person who establishes his or her usual place of residence in the destination country for 12 months or more.

More than 70% of the estimated 25 million foreigners living in the European Union's 27 countries come from Eastern and Southeastern Europe and North Africa. However, migrants to the European Union (EU) are diverse in terms of their country of origin, and the number of immigrants from Latin America, Asia and Sub-Saharan Africa is growing.

In 2006, 1.8 million people from outside the EU settled in a new country of residence in the EU, of these more than half were less than 29 years old. Non-EU immigrants were made up fairly equally of citizens of European non-EU countries, Asian, American and African countries, with each comprising between 13% and 16% of the total. Among non-EU immigrants in 2006, Moroccans were the most numerous, followed by migrants from Ukraine, China, India, Bolivia, Albania, the United States, Turkey, Brazil and Russia (Eurostat, 2008).

Migration patterns and migrant populations differ between EU countries. For example, Moroccans were most likely to migrate to Spain, Belgium, France and Italy, and Ukrainians to the Czech Republic, but also to Spain and Portugal. Chinese citizens most often migrated to Spain and the United Kingdom, and Albanians to neighbouring countries of Greece and Italy. Many Turks migrated to Germany and Austria, but France and the Netherlands were also popular destinations. Russians were the largest group of migrants to Finland and Latvia. Some nationalities were significant among migrants to one country, for example, Indians to the United Kingdom, and Bolivians and Brazilians to Spain (Eurostat, 2008).

Patterns of migration and population movement are affected by geographical and historical factors as well as by economics, conflict, environmental and political crises.

Poverty and the desire for a better life are significant drivers. Seasonal labour is an increasing phenomenon. Refugees, internally displaced people and asylum seekers constitute a significant proportion of mobile populations. Disintegration of the former Soviet Union and recent EU enlargement has had a major impact on migration in Europe. Forced migration, in the form of human trafficking, is an issue of increasing concern, with an estimated 500 000 victims of trafficking in Western Europe (Szilard & Barath, 2007).

However, not all migration is due to force of circumstances. The education sector has become a major driver of mobility (DiCerbo, 2001).

Migration into and within Europe has implications for public health. This issue was put on the European agenda during the Portuguese Presidency of the Council of the EU in 2007. The conference 'Health and migration in the EU: Better health for all in an inclusive society', in Lisbon in June 2007, led to a draft Council Conclusion, adopted by the Council of the EU in December 2007, which highlighted the link between the health of migrants and that of all EU citizens.

The Council Conclusion recommended that the European Commission support action through the Programme of Community Action in the Field of Health 2008–2013, invited Member States to integrate migrant health into national policies and requested that they facilitate access to healthcare for migrants. The Conclusion also called on the European Centre for Disease Prevention and Control (ECDC) to produce a comprehensive report on migration and infectious diseases in the EU, focusing on tuberculosis (TB), HIV and vaccine preventable diseases, to inform policy and public health responses.

This background note is one of the components of the *ECDC Report on migration and infectious diseases in the EU* and intends to complement and introduce the migrant health disease-specific reports (see text below detailing structure of the report). The purpose of the background note is to provide an overview of migration and infectious diseases in the EU. Section 2 provides a brief summary of issues related to migration and health, including factors that increase the risk of infectious diseases in some migrant populations and limitations of available data. Section 3 discusses infectious diseases, specifically TB, HIV, hepatitis and vaccine preventable diseases in children. Section 4 considers possible areas for future public health research and intervention.

Structure of the ECDC Report on migration and infectious diseases in the EU:

- **Background note:** introductory note providing background and directions for future public health research and interventions
- **Migrant health disease-specific reports:** series of disease-specific documents presenting data analysis, evidence summary, interpretation and guidance on interventions in the field of migration and selected infectious diseases. They will form a set of reports, which will be expanded over the coming years. The first disease to be considered is HIV, followed by tuberculosis and vaccine preventable diseases (measles) later in 2009. Other diseases will be considered for inclusion in 2010–2011.
- Overview of **projects related to health and migration / ethnic minorities** funded by the European Health Programme 2003–2008 (contribution by the Executive Agency for Health and Consumers, Ms Cinthia Menel Lemos)

1 Migration and health

Migration involves several stages, each of which presents strategic opportunities for prevention and control of infectious diseases. There is a pre-entry phase, where a migrant's health reflects the disease profile of his or her country of origin. There is a transitional phase, where the process of moving, sometimes through intermediate countries, can influence a migrant's health (Ho, 2003). Finally, there is a post-entry phase, where the process of adapting to working and living conditions in the host country can also influence a migrant's health.

Despite concerns that migrants are responsible for the spread of infectious diseases, most migrants to the EU are healthy. In population terms, however, migrants bear a disproportionate burden of infectious disease. For example, in the UK, approximately 70% of newly diagnosed cases of TB and HIV were in people born outside the UK (HPA, 2006).

Socio-economic, cultural and legal factors, in particular, affect the physical and psychological health of migrant populations. Poor living and working conditions are critical factors. Migrants often live in poor quality, overcrowded housing, which increases the risk of diseases such as TB. High rates of domestic accidents, including lead poisoning, have been recorded among migrant children living in poor quality housing (de Jong & Wesenbeek, 1997).

Low skilled migrants tend to do jobs in higher risk occupational sectors. For example, the incidence of occupational accidents and diseases in construction and agriculture is higher than in other sectors (Bollini & Siem, 1995; Carballo & Siem, 1996). Migrants may be unfamiliar with safe use of equipment and often receive inadequate training, supervision and protection.

Psychological health may be affected by the process of leaving family and coping with job insecurity, legal problems, unfamiliar language and culture. Stress and anxiety can result in more serious psychological problems (Mirdal, 1985; Selten & Sijben, 1994; Liebkind, 1996). Refugees and asylum seekers often experience psychological trauma (Uniken Venema & Weirdsma, 1992; Selten & Sijben, 1994; Karmi, 1997).

Limited access to healthcare for migrants is also a critical factor. Policies, laws and regulations governing service delivery, the characteristics of migrant communities and wider social attitudes can all influence access to and uptake of services. Legal status, for example, lack of residence status and health insurance, is often a barrier to healthcare. Lack of culturally sensitive information in relevant languages, suitably trained professionals and services tailored to the specific needs of migrants are also barriers. Within migrant communities, culture, religion, beliefs about health, disease prevention and healthcare and limited knowledge of available services can prevent uptake of services.

Stigma and discrimination associated with TB and with HIV may be exacerbated in the case of migrants who are already socially isolated and fear further stigma, discrimination and marginalisation. This may deter them from seeking screening, counselling or testing. Migrants also tend to be disproportionately represented in prisons in many countries of the EU. Conditions in prisons, such as overcrowding and poor ventilation, can increase the spread of infectious diseases like TB among inmates.

2 Migration and infectious diseases

Overall in Europe, the situation with regard to infectious diseases has improved, although progress has not been universal. In some European countries, the prevalence of diseases such as TB has remained relatively high (Migliori & Centis, 2002; Clark & Mytton, 2007; Falzon & van Cauetern, 2008). Likewise, the prevalence of hepatitis A and hepatitis B has also remained high.

Many migrants from outside the EU come from countries where prevention and control of infectious diseases such as TB, HIV and hepatitis is inadequate and the risk of exposure to these diseases is higher than in most EU countries. Coverage with childhood vaccination programmes in these countries is sometimes lower and there are still outbreaks of childhood diseases that have been largely controlled in the EU.

The three diseases presented in this Background note are emphasised in view of expert consensus and analysis of available data. However, the aim of the *ECDC Report on Migration and Infectious Diseases in the EU* is to extend the assessment to other diseases, which are or may be disproportionately affecting migrants. Therefore, the disease-specific reports will possibly extend in the future to other diseases and conditions such as sexually transmitted diseases other than HIV, zoonotic infections and imported tropical diseases.

2.1 Tuberculosis

The last 50 years have seen a decline in TB in most of what were the original EU countries. However, this decline has not been consistent across Europe and TB remains a challenge in some of the accession countries. The downward trend has also been interrupted by the re-emergence of TB among vulnerable populations including cases in migrants from countries where TB is less well controlled, which represent an increasing proportion of new cases (Rieder et al., 1994; Lienhardt, 2001; Falzon & van Cauetern, 2008; Jakubowiak et al., 2007).

In 2007, 21% of reported TB cases were of foreign origin. This proportion ranged from 26% to 79% in 17 countries. Overall, 27 countries reported 'area of origin' of TB cases: 32% of foreign cases originated from Asia; 26% from Africa; 10% from other countries of the EU/EEA/EFTA, 11% from non-EU/EEA/EFTA countries. Between 2001 and 2007, notifications among nationals decreased in nearly all countries but cases of foreign origin increased up to 2005 and decreased in 2006 and 2007.

There is evidence that TB among people categorised as foreign-born is occurring in younger age groups and is also associated with higher treatment default rates and poor outcomes (Falzon & van Cauetern, 2007; Jakubowiak et al., 2007). The incidence and prevalence of multidrug-resistant TB (MDR TB) and extensively drug-resistant TB (XDR TB) in certain EU countries (particularly in low incidence countries) appears to be associated with migrants from countries that have a higher prevalence of drug resistance (particularly countries of the Former Soviet Union).

Although this suggests that imported TB is the main problem, the situation is more complex. Material deprivation appears to be far more of a determinant than country of origin. Many migrants develop TB as a consequence of their socio-economic status in the host country (EASAC, 2007). Migrants who arrive with a history of TB may be at risk of reactivated TB infection because of overcrowded and poorly ventilated living conditions, homelessness and inadequate nutrition (Gandy & Zumla, 2003; Ho, 2003; Gagliotti et al., 2006). Poor living conditions also expose previously uninfected migrants to the risk of new TB infection.

Limited access to healthcare prevents migrant populations from accessing information that would enable them to avoid TB and to obtain early diagnosis and treatment of new or re-activated TB infection. This is compounded by limited efforts to raise awareness about TB in migrant populations who may be at the most risk.

Finally, it is important to emphasise that an increasing amount of evidence based on molecular epidemiological studies is indicating that the risk of TB transmission from migrant to host populations is low. This clearly demonstrates how the issue of TB control among migrants remains primarily a question of individual right to access diagnostic and treatment services for a curable infectious diseases (Cain et al., 2008, Dahle 2007).

2.2 HIV

HIV is a significant health issue in some EU countries, while in others HIV prevalence and incidence are comparatively low. Migration is a factor influencing the epidemiology of HIV in Europe, which has largely been associated with transmission through unsafe sex among men who have sex with men and unsafe injecting drug use. In 2005, 46% of all cases of heterosexually acquired HIV infection in Western Europe involved migrants from high prevalence countries (EuroHIV, 2006; Hamers et al., 2006). In Spain, increased HIV among migrant women involved in sex work is changing the epidemiological profile of the disease (Belza, 2004).

In the UK most HIV cases reported between 2004 and 2006 involved migrants from Sub-Saharan Africa who were infected prior to leaving their country of origin (HPA, 2006).

Also in the UK, approximately 70% of HIV incidence is accounted for by migrants. Ninety percent of cases were in migrants from Sub-Saharan Africa and 85% involved infection acquired prior to arrival in the UK (HPA, 2006).

In Belgium, people categorised as foreign-born account for more than 50% of all reported HIV cases since the epidemic began (EuroHIV, 2006; Hamers & Downs, 2004; Sasse & Defraye, 2006).

In France, reported AIDS cases among migrants increased by 20% between 1999 and 2004.

Those who are foreign-born are disproportionately represented in HIV statistics in the Netherlands, Germany, Sweden, Ireland, Spain and Italy (EPI-VIH Study Group, 2002; SIIDS, 2002; HSPC, 2006; Nielsen & Lazarus 2006).

Limited access to HIV prevention, counselling and testing, and treatment services, particularly for women migrants who may be more vulnerable because of their low social status or engagement in sex work, is a challenge. However, as is the case with TB, the risk of transmission of HIV from migrant to host communities appears to be low, although available evidence is limited.

2.3 Vaccine preventable diseases

Hepatitis A and B

Hepatitis A is mainly transmitted through contaminated food and water, but infection can also occur through injecting drug use and sexual contact. Hepatitis A is endemic in countries with overcrowded living conditions, poor hygiene and limited access to clean water and sanitation but also occurs in parts of Southeastern and Southern Europe.

There have been outbreaks of food contamination-related hepatitis A in countries such as Luxembourg (2000), Italy (2002), the UK (2003), Denmark (2004), and Germany (2004) (HPA, 2003; Mazick et al., 2005; Schenkel et al., 2006). Outbreaks have also been reported in the EU among injecting drug users and men who have sex with men (Tallo et al., 2003).

There is little evidence to indicate that hepatitis A in Europe is associated with migration, although infection in Hungary has been linked to migration from areas of high prevalence in former Yugoslavia and China. Children of migrants who return periodically to their family's country of origin (circular migration) may be exposed to the virus. Children of migrants in the Netherlands who had visited hepatitis A endemic countries, such as Morocco and Turkey, were found to be among the most vulnerable to hepatitis A (Van Gorkom et al., 1998; Richardus et al., 2004). Similarly, relatively high rates of infection have also been found among children of migrants in Spain who had returned to Morocco for their annual holidays (Llach-Berne et al., 2006). In countries with universal vaccination programmes and where high-risk groups have been targeted, incidence in children has decreased significantly (Suijkerbuijk et al., 2008).

Hepatitis B (HBV) incidence in the EU and EEA/AFTA countries has declined over the past ten years from 6.7 cases per 100 000 population in 1995 to 1.5 cases per 100 000 population in 2005 (Rantala & van de Laar, 2008). However, in many European countries, immigrants from highly endemic regions are many times more frequently affected by HBV than the general population (Manzardo et al., 2008; Rantala & van de Laar, 2008; HPA, 2006). In the general population the prevalence of hepatitis B surface antigen varies widely between EU countries, with higher rates in Romania (6%), Bulgaria (4%) and Latvia (2%) and lower rates in the Netherlands, Slovenia and Norway (all below 0.5%). Due to the large differences that exist in surveillance systems, reporting practices, data collection methods and case definitions across EU countries, the surveillance data are difficult to compare across countries (Rantala & van de Laar, 2008).

Childhood diseases

Coverage of childhood vaccination programmes varies across the EU and coverage rates are lower in some countries, in particular new Member States. Coverage rates in some countries have also declined as some parents choose not to have their children vaccinated because of unsubstantiated concerns about adverse effects (Chez et al., 2004). Outbreaks of measles infection in a number of EU countries highlight the fact that vaccination programmes are not reaching all children, irrespective of origin (Coughlan et al., 2002; Ringler et al., 2002; Zandotti et al., 2004).

There is relatively little data on vaccination coverage of the children of migrants in the EU, but available information suggests that the situation is variable. In Germany, for example, the vaccination status of migrant children and adolescents depends on the type of the vaccination, country of origin, age and duration of residence in Germany (Beiträge zur Gesundheitsberichterstattung des Bundes: Kinderund Jugendgesundheits Survey, 2008).

Experience in some countries indicates that there are challenges in reaching the children of migrants with routine vaccination services, because their parents are either unaware of these services or are unwilling to use them for cultural, religious or other reasons (Smailbegovic et al., 2003; Alfredsson et al., 2004; Henderson et al., 2008).

Outbreaks of measles and other infections in the host population in some EU countries may be linked to sub-optimal protection in migrant populations. For example, the persistence of the rubella virus in Switzerland has been partly attributed to migration from Asia, Africa and Central and South America, where the prevalence of rubella antibodies in young adults is low (Matter et al., 1995). The children of migrants who are not reached by routine vaccination programmes are also at elevated risk of preventable childhood diseases.

3 Implications for public health research and intervention

The issue of migration and health is high on the EU agenda. EU political commitment is reflected in policy instruments intended to ensure that migrants have access to healthcare and in the European Commission's *2003–2008 European Health Programme* and *2008–2013 Second Programme of Community Action in the Field of Health*. The latter include, among others, projects on health inequities, migrant health status and infectious disease burden and models for provision of healthcare for undocumented migrants.

However, more can be done to improve understanding of the relationship between migration and public health and to address the health and healthcare needs of migrants. This section outlines challenges and possible areas for public health research and intervention.

3.1 Infectious disease surveillance and monitoring

Migration in the EU remains poorly understood. Relatively little is known about the number of people moving in and out of countries and their duration of stay. There is no common definition of migrant and the term is used in different ways by different European countries. 'Migrant' may or may not include short-term and long-term migrants, transit populations and settled communities, people with and without legal residence papers, first, second and third generation migrants. Lack of standardisation across countries makes it difficult to compare the situation of migrants within the EU.

Similarly, there is no consistent approach to recording migrant status in health records, so comprehensive and comparable data about the health of migrants is not available. Most data are drawn from small studies, unrepresentative samples or questions added to other data collection exercises. These shortcomings limit understanding of migration and health, including infectious diseases, and more research is needed to assess the situation in different EU countries and to account for the apparent differences in prevalence of infectious diseases between countries.

Despite the considerable amount of research that has been conducted, there are also gaps in information about the impact of culture and religion on health beliefs, attitudes and health-seeking behaviour.

Lack of standardisation makes it difficult to establish a clear picture of the burden of infectious diseases in migrant communities. Different EU countries use different definitions for data collection and analysis. Tailoring definitions to the epidemiological characteristics of the disease for the purposes of surveillance is common; for example, the use of the definition 'foreign-born' in TB surveillance. Surveillance of childhood diseases is also poor in some EU countries.

The implications of infectious diseases among migrants for host communities are poorly understood. There is little evidence of the spread of infectious diseases from migrant to host communities. While this may reflect limited interaction between migrant social networks and those of host communities, other factors may also play a role.

Possible areas for action include:

- Developing a common EU-wide definition of 'migrant' and standardised definitions for collection of communicable disease and epidemiological data. This would improve understanding of the relationship between migration and infectious diseases and the burden of infectious diseases in migrants and allow data comparison between and within countries. Data collection models that avoid stigmatisation and discrimination need to be identified.
- Monitoring migrant access to and uptake of prevention, treatment and care services.

3.2 Prevention and control programmes

Despite the lack of comprehensive data, available information indicates that patterns of migration and the epidemiology of infectious diseases can change rapidly. This implies a need for EU countries to assess the situation on a regular basis; in particular the impact of circular and short-term migration on infectious diseases, and to adapt prevention and control policies and programmes to meet evolving needs.

Health is in large part defined by social and economic determinants and for many migrants these tend to be adverse. In the case of TB, traditionally a disease of poverty, the conditions in which migrants move and in which they live in their host country may facilitate the development and spread of disease. In the case of the children of migrants, potential exposure to infectious diseases, such as hepatitis A, is increased during visits to their parents' countries of origin, and risk of preventable childhood diseases is increased if they are not reached by routine vaccination programmes. Prevention and control of infectious diseases require efforts to improve the social and economic condition of migrants. The *2008 WHO Commission Report on the Social Determinants of Health* asserts that generating evidence on what reduces health inequities requires more multidisciplinary research and more funding.

Prevention and control programmes have paid insufficient attention to differences in vulnerability in different sub-populations of migrants and the specific health and welfare needs of women and children. The conference *Health and migration in the EU* called for actions to improve sexual and reproductive health and access to family planning education and services for migrants. Available evidence also suggests that more needs to be done to improve vaccination coverage of the children of migrants, especially those who may not be reached by routine services.

Although highlighted by the *Budapest Declaration on Public Health and Trafficking in Human Beings* following the *Regional Conference on Public Health and Trafficking in Human Beings* in March 2003, the impact of human trafficking on the health of women and girls, particularly with respect to HIV, merits greater attention.

Cost-effective and non-stigmatising approaches to screening, targeted vaccination and active case finding in migrant populations have yet to be identified. More needs to be learned about when, where and how often screening is a useful public health intervention. Screening is a complex and sensitive issue and there is currently no consensus on approach or on the effectiveness, for example, of entry screening for TB.

More also needs to be learned about how to reach most-at-risk migrants with vaccination and other services in ways that protect confidentiality. Active case finding, especially among undocumented migrants, is a challenge and interventions that encourage all migrants to participate in public health programmes are urgently needed.

Possible areas for action include:

- Consideration of the implications of changing patterns of migration and infectious diseases for prevention and control programmes, including developing consensus on the infectious diseases most relevant to migration.
- Conducting research to identify the nature of health inequalities, the different social and economic determinants of health in specific sub-groups of migrants and the extent of public health risk attributable to migration.
- Developing evidence-based prevention and control policies and programmes that are tailored for migrants including the most vulnerable, with particular emphasis on the needs of women and children.
- Evaluating the cost effectiveness and public health benefits of approaches to screening, targeted vaccination programmes and active case finding and strengthening sharing of good practice.

3.3 Healthcare services

Prevention and control of infectious diseases among migrant populations has planning and budgeting implications for healthcare systems. Limited access to healthcare among migrants must be addressed, since this is a factor in late presentation for diagnosis and treatment, which has implications for individuals and the health system, as management of more advanced disease is often more complex and more costly. Improving healthcare follow-up of migrants after the initial contact also needs to be addressed.

Limited access to or low utilisation of services by migrants is due to a mix of legal, administrative, linguistic and cultural factors. Legal status — lack of residence status and health insurance, especially for undocumented migrants — and regulations governing service delivery limit access to services in some countries. Policies of government departments of immigration, justice or interior, for example, with strict policies regarding deportation of undocumented migrants, may make it more difficult to reach migrants with public health interventions. There has been little focus on the human rights dimensions of healthcare in the context of migration and ensuring that migrants and health providers are aware of and encouraged to exercise these rights.

Language barriers and the lack of culturally sensitive information and translation services hinder effective communication about diagnosis, treatment and adherence. Lack of appropriately trained health professionals, in terms of cultural competency and awareness of diseases that have declined in Europe, such as TB, and lack of services tailored to the specific needs of migrants also influence healthcare utilisation.

Possible areas for action include:

- Exploring and developing good practice approaches to maximise access to healthcare, particularly for undocumented and uninsured migrants.
- Investigating the factors that limit access to and utilisation of health services and develop 'migrant-friendly' services and strategies to increase coverage and uptake, for example, outreach, information about services and involvement of migrant communities in service design and delivery.
- Developing training curricula and materials for public health and clinical care professionals to increase awareness of the specific needs of migrants and skills and competencies required to provide culturally sensitive services.

Conclusions

There is a lack of comprehensive information on migration and infectious diseases in most EU countries, but available data suggest that migrant populations from countries with a high prevalence of infectious diseases are disproportionately affected by TB, HIV, hepatitis A and hepatitis B.

This also has implications for public health in Europe, although the risk of infectious disease spread from migrant to host communities in EU countries appears to be low. For example, the decline in rates of TB in Europe has been interrupted by cases in migrants from countries where TB is less well controlled. Migration from high prevalence countries is influencing the epidemiology of HIV in Europe. While there is little evidence to indicate that hepatitis A in Europe is associated with migration, children of migrants who return periodically to their family's country of origin appear to be among the most vulnerable to hepatitis A. In addition, coverage with routine immunisation against preventable childhood diseases is lower in children in some migrant populations.

The poor conditions in which many migrants live and work increases their risk of infectious diseases, including, for example, new or reactivated infection with TB. Many migrants have limited access to healthcare services, in particular undocumented migrants, due to a combination of legal, administrative, linguistic and cultural factors, and this is a barrier to effective prevention, diagnosis and treatment of infectious diseases.

More needs to be done to improve the understanding of the relationship between migration and health and address the health and healthcare needs of migrants. Consistent and comprehensive data about the health of migrants are not available and the lack of standardisation in data collection makes it difficult to establish a clear picture of the burden of infectious diseases in migrant communities.

Although health is in large part defined by social and economic determinants, and for many migrants these tend to be adverse, little research has been conducted to identify the specific determinants of health in different sub-populations of migrants. Likewise limited attention has been given to differences in vulnerability in different sub-populations of migrants and the specific health and welfare needs of migrant women and children.

There are few services, provided by appropriately trained and culturally sensitive healthcare professionals, tailored to the specific needs of migrants. More specifically, cost-effective and non-stigmatising approaches to screening, targeted vaccination and active case finding in migrant populations are also required.

This background note suggests public health research and interventions to address these issues. Specifically, it suggests actions to improve infectious disease surveillance and monitoring, to ensure that prevention and control programmes are responsive to changing patterns of migration and infectious disease epidemiology, and to ensure that healthcare services are responsive to the specific needs of migrant populations. More generally, EU countries need to consider actions to tackle infectious diseases in concert with countries of origin and countries through which migrants pass on their way to Europe.

References

Alfredsson R, Svensson E, Trollfors B, Borres MP (2004). Why do parents hesitate to vaccinate their children against measles, mumps, and rubella? Acta Paediatric, 93(9):1232–7.

Belza MJ (2004). Prevalence of HIV, HTLV-1 and HTLV-11 among female sex workers in Spain, 2000–2001. Eur J. Epidemiol, 3:279–282.

Bollini P, Siem H (1995). No real progress towards equity: Health of migrants and ethnic minorities on the eve of the year 2000. Soc Sci Med, 41(6):819–828.

Cain KP, Benoit SR, Winston CA, MacKenzie WR (2008). Tuberculosis among foreign-born persons in the United States. JAMA, 300(4):405–12.

Carballo M, Divion JJ, Zeric D (1998). Analytic review of migration and health and as it affects European Community countries. International Center for Migration Health.

Carballo M, Siem H (1996). Migration, Migration Policy and AIDS. In: Haour-Knipe M, Rector R (Eds.). Crossing borders: Migration, ethnicity and AIDS (pp 31–49). London: Taylor & Francis.

Chez MG, Chin K and Hung PC (2004). Immunisations, immunology, and autism. Semin Pediat Neurol, 11(3):214–7.

Clark RC, Mytton J (2007). Estimating infectious disease in UK asylum seekers and refugees: a systematic review of prevalence studies. J Public Health, 29(4):420–28.

Coughlan S, Connell J, Cohen B, Jin L, Hall WW (2002). Sub-optimal measles-mumps-rubella vaccination coverage facilitates an imported measles outbreak in Ireland. Clin Infect Dis, 35:84–6.

Dahle UR, Eldholm V, Winje BA, Mannsåker T, Heldal E. Impact of immigration on the molecular epidemiology of *Mycobacterium tuberculosis* in a low-incidence country. Am J Respir Crit Care Med. 2007 Nov 1;176(9):930–5.

De Jong J, Wesenbeek R (Eds.) (1997). Migration and health in the Netherlands. Bonn: Country reports on migration and health in Europe.

Di Cerbo PA (2001). Why migrant education matters. National Clearinghouse for Bilingual Education, Issue Brief, 8.

EASAC (2007). Impact of migration on infectious diseases in Europe. Statement, August 2007.

EAHC (2008). Report on migrant and ethnic minorities health projects funded by the European Health Programme 2003–2008 related to communicable diseases.

European Centre for Disease Prevention and Control/WHO Regional Office for Europe. Tuberculosis surveillance in Europe 2007. Stockholm, ECDC, 2009.

EPI-VIH Study Group (2002). HIV infection among people of foreign origin voluntarily tested in Spain. A comparison with national subjects. Sex Transm Infect, 78:250–254.

EuroHIV (2006). HIV/AIDS surveillance in Europe. End-year report 2005. Saint-Maurice: Institut de veille sanitaire. No 73.

Eurostat (2008). Recent migration trends: Citizens of EU-27 Member States become ever more mobile while EU remains attractive to non-EU citizens.

EU (2007). Challenges for health in the age of migration: Chapter 3 – Immigrants in the European Union – Features, trends and vulnerabilities; Chapter 4 – Communicable diseases.

Falzon D, Aït-Belghiti F (2007). What is tuberculosis surveillance in the European Union telling us? Clin Infec Dis, 44:1261–7.

Falzon D, van Cauetern D (2008). Surveillance and outbreak reports: Demographic features and trends in tuberculosis cases in the European Region, 1995–2005. Euro Surveill, 13(1-3).

Frank C, Stark K (2004). Cases of travel-associated hepatitis A in Germany: international alert. Euro Surveill, 8(35):pii=2533. Retrieved October 7, 2008, from http://www.eurosurveillance.org/ew/2004/040826.asp#1

Gagliotti C, Resi D, Moro ML (2006). Delay in the treatment of pulmonary TB in a changing demographic scenario. Int J Tuberc Lung Dis, 10(3):305–9.

Gandy M, Zumla A (2003). The return of the White Plague: Global poverty and the 'new' tuberculosis. London & New York: Verso.

Hamers FF, Downs AM (2004). The changing face of the HIV epidemic in Western Europe: What are the implications for public health policies? Lancet, 364:83–94.

Hamers FF, Devaux I, Alix J, Nardone A (2006). HIV/AIDS in Europe: Trends and EU-wide priorities. Euro Surveill, 11(47):pii=3083. Retrieved October 21, 2008, from http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=3083

Health Protection Agency UK (HPA) (2006). Migrant health: Infectious diseases in non-UK born populations in England, Wales and Northern Ireland. A baseline report 2006. HPA: London. Retrieved October 10, 2008, from http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1201767922096

Health Protection Agency UK (HPA) and Communicable Disease Surveillance Centre (2003). Hepatitis A outbreak in Weymouth Dorset. CDR Weekly, 31(13):2–3. 8, 2008, from http://www.hpa.org.uk/cdr/archives/2003/cdr3103.pdf

Health Protection Surveillance Centre (HPSC) (2006). Newly diagnosed HIV infections in Ireland: Quarter 3 & 4 2005 and 2005 Annual Summary. Retrieved October 10, 2008, from http://www.hpsc.ie/hpsc/A-Z/HepatitisHIVAIDSandSTIs/HIVandAIDS/SurveillanceReports/2005/File,1676,en.pdf

Hemmer R (2000). Outbreak of hepatitis A in Luxembourg. Euro Surveill, 4(33):pii=1543. Retrieved October 17, 2008, from http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=1543

Henderson L, Millett C, Thorogood N (2008). Perceptions of childhood immunisation in a minority community: qualitative study. J R Soc Med, 101(5):244–51.

Ho MJ (2003). Migratory journeys and tuberculosis risk. Med Anthropol Q, 17(4):442–58.

Jakubowiak WM, Bogorodskaya EM, Borisov ES, Danilova DI, Kourbatova EK (2007). Risk factors associated with default among new pulmonary TB patients and social support in six Russian regions. Int J Tuberc Lung Dis, 11(1):46–53.

Karmi G (Ed) (1997). Migration and health in UK. Bonn: Country Reports on Migration and Health in Europe.

Kaufmann SHE, Parida SK (2007). Changing funding patterns in tuberculosis. Nat Med, 13(3):299–303.

Liebkind K (1996). Acculturation and stress: Vietnamese refugees in Finland. Journal of Cross-Cultural Psychology, 27(2):161–180.

Lienhardt C (2001). From exposure to disease: The role environmental factors in susceptibility to and development of tuberculosis. Epidemiol Rev, 23(2):288–301.

Llach-Berne M, Panella H, Dominguez A, Cayla JA, Godoy P, Alvarez J, Sala R, Camps N and Grupo de Estudio de Hepatitis A. (2006). Estudio descriptivo de los brotes de hepatitis A. Investigados en Cataluna (1999-2003). Enferm Infecc Micriobiol Clin, 24(7):431–6.

Manzardo C, Treviño B, Gómez i Prat J, Cabezos J, Monguí E, Clavería I et al (2008). Communicable diseases in the immigrant population attended to in a tropical medicine unit: Epidemiological aspects and public health issues. Travel Med Infect Dis, 6(1-2):4–11.

Matter L, Bally F, Germann D, Schopfer K (1995).The incidence of rubella virus infections in Switzerland after the introduction of the MMR mass vaccination programme. Eur J Epidemiol, 11:305–10.

Mazick A, Howetz M, Rex S, Jensen IP, Weis N, Katzenstein TL, Haff J and Molbak K (2005). Hepatitis A outbreak among MSM linked to casual sex and gay saunas in Copenhagen, Denmark. Euro Surveill, 10(5):111–114.

Migliori GB and Centis R (2002). Problems to control TB in Eastern Europe and consequences in low incidence countries. Monaldi Arch Chest Dis, 57(5-6):285–90.

Mirdal GM (1985). The condition of “tightness”: the somatic complaints of Turkish migrant women. Acta Psychiatr Scand, 71:287–296.

Nielsen S, Lazarus JV (2006). Annex: HIV/AIDS country profiles for the WHO European Region, in HIV/AIDS in Europe: Moving from death sentence to chronic disease management. (S Matic, JV Lazarus and MC Donoghoe, eds.) Copenhagen: WHO, pp. 243–274.

Rantala M, van de Laar MJW (2008). Surveillance and epidemiology of hepatitis B and C in Europe – A review. Euro Surveill, 13(21):pii=18880. Available from: http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=18880.

Richardus JH, Vos D, Veldhuijzen IK, Groen J (2004). Seroprevalence of Hepatitis A virus antibodies in Turkish and Moroccan children in Rotterdam. J Med Virol, 72(2):197–202.

Rieder HL, Zellweger JP, Raviglione MC, Keizer ST, Migliori GB (1994). Tuberculosis control in Europe and international migration. Eur Respir J, 7:1545–1553.

Ringler M, Gobel G, Most J, Weithaler K (2003). Fully vaccinated children are rare: immunisation coverage and seroprevalence in Austrian school children. Eur J Epidemiol, 18(2):161–170.

Sasse A, Defraye A (2006). Epidemiologie du SIDA et de l’infection a VIH en Belgique. Situation arretee au 31 decembre 2005 Section Epidemiologie, decembre 2006, Bruxelles (Belgique) Institut scientifique de Sante publique, IPH/EPI Reports 2006-033. Retrieved October 8, 2008 from http://www.iph.fgov.be/epidemio/epifr/aidsfr/aidsanfr/aids05fr.pdf.

Schenkel K, Bremer V, Grabe C, van Treeck U, Schreier E, Hohne M et al (2006). Outbreak of hepatitis A in two federal states of Germany: bakery products as vehicle of Infection. Epidemiol Infect, 134(6):1292–1298.

Selten JP, Sijben N (1994). First admission rates for schizophrenia in immigrants to the Netherlands. The Dutch National Register: Social Psychiatry and Psychiatric Review, 29(2):71–7.

Smailbegovic MS, Laing GJ, Bedford H (2003). Why do parents decide against immunisation? The effect of health beliefs and health professionals. Child Care Health Dev, 29(4):303–11.

Sujikerbuijk AWM, Lindeboom R, van Steenbergen JE, Sonder GJB, Doorduyn Y (2008). Effect of Hepatitis A vaccination programmes for migrant children on the incidence of Hepatitis A in the Netherlands. Eur J Pub Health, 19(1).

Swedish Institute for Infectious Disease Control (SIIDS) [Smittskyddsintitutet] (2002). Communicable diseases in Sweden 2001. Karl Ekdahl (ed.). Stockholm: Swedish Institute for Infectious Disease Control. Retrieved October 15, 2008, from http://www.smittskyddsinstitutet.se/upload/Publikationer/Report2001.pdf

Szilard I, Barath A (2007). Public health aspects of trafficking in human beings: Health promotion and prevention tasks and possibilities in: Health promotion and disease prevention – A handbook for teachers, researchers, health professionals and decision-makers. Hans Jacobs Publishing Company 2007 Germany and FYRM, pp 670–693.

Szilard I et al (2008). Human resource capacity building for migration health – A plan of an academic consortium, EUPHA Conference, Lisbon, 5 November 2008.

Tallo T, Norder H, Tefanova V, Ott K, Ustina V, Prukk T, et al (2003). Sequential changes in Hepatitis A virus genotype distribution in Estonia during 1994 to 2001. J Med Virol, 70:187–193.

Uniken Venema HP, Weirdsma AI (1992). Opnames van migranten in psychiatrische ziekenhuizen. Tijdschrift voor sociale Gezondheidszorg. 17:27.

Van Gorkom J, Leentvaar-Kuijpers, Kool JL, Coutinho RA (1998). Annual epidemic of Hepatitis A in four large cities related to holiday travel among immigrant children. Ned Tijdschr Geneeskd, 142:1919–1923.

Zandotti C, Jeantet D, Lambert F, Waku-Kouomou D, Wild F, Freymuth F, et al (2004). Re-emergence of measles among young adults in Marseilles, France. Eur J Epidemiol, 19(9):891–3.