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**How health systems can address inequities
in priority public health conditions:
the example of tuberculosis**

Briefing on policy issues produced through the
WHO/European Commission equity project

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This briefing on policy issues was commissioned by the WHO Regional Office for Europe as a deliverable for the WHO/European Commission joint project on equity in health (2006WHO03). This is one of six briefings on policy issues produced through the project, which has as its focus improving health intelligence, building capacity and know-how for policy-makers and practitioners on tackling socially determined health inequalities as part of health system performance. WHO partnership in this project is in keeping with strategic objective 7 of the WHO Medium-Term Strategic Plan (2008–2013). This strategic objective is: to address the underlying social and economic determinants of health through policies and programmes that enhance health equity and integrate pro-poor, gender-responsive and human rights-based approaches. The project has received funding from the European Commission under the Public Health Programme 2003-2008. However, the sole responsibility for the study lies with the author and the European Commission is not responsible for any use that may be made of the information contained therein.

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The author of this briefing was WHO Temporary Adviser Marta Schaaf. Marta Schaaf is a health and human rights advocate who has worked on several projects addressing tuberculosis control among excluded populations. In addition to fieldwork in eastern Europe, she has authored a study of tuberculosis in Roma communities. She has worked on both public health policy advocacy and programme implementation for the World Lung Foundation and the Clinton Foundation HIV/AIDS Initiative, and has consulted on the social determinants of health of vulnerable populations for the Open Society Institute, HealthRight International and the WHO Regional Office for Europe.

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For more information please contact the WHO European Office for Investment for Health and Development (info@ihd.euro.who.int).

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Publication design: **GIOVANNIRUSSOGRAFICO**

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Acronyms

AAAQ (guidelines)	Availability, accessibility, acceptability and quality (guidelines)
CE	Council of Europe
CSDH	WHO Commission on Social Determinants of Health
DOTS	directly observed treatment, short-course
EC	European Commission
ECDC	European Centre for Disease Prevention and Control
ECOSOC	United Nations Economic and Social Council
EMCONET	Employment Conditions Knowledge Network
EU	European Union
FRA	European Union Agency for Fundamental Rights
GDP	gross domestic product
HCWs	health care workers
HIA	health impact assessment
HSKN	Health Systems Knowledge Network
ILO	International Labour Organization
MDGs	Millennium Development Goals
MDR	multidrug-resistant
OECD	Organisation for Economic Co-operation and Development
PAL	practical approach to lung health (programme)
PHC	primary health care
PPHC–KN	Priority Public Health Conditions Knowledge Network
PPM	public–private mix (approach)
PWI	Public Wealth Index
SEKN	Social Exclusion Knowledge Network
SEP	socioeconomic position
SES	socioeconomic status
TB	tuberculosis
TBCTA	Tuberculosis Coalition for Technical Assistance
UNDP	United Nations Development Programme
WHO	World Health Organization

Key messages

- The Priority Public Health Conditions Knowledge Network of the WHO Commission on Social Determinants of Health identified 13 priority health conditions that represent a large aggregate burden of disease, exhibit significant disparities across and within populations, affect certain groups disproportionately, and exist in epidemic-prone conditions. Tuberculosis (TB) is one of these conditions.
- Exposure to TB bacteria, the likelihood of becoming ill once exposed, the likelihood of receiving timely diagnosis and completing treatment and the impact of having had TB are differentially distributed across the social gradient both within and between countries.
- Health systems can exacerbate, have no impact on or lessen health inequities, including those that exist in relation to TB. A health-equity-enhancing system will: a) lessen health inequities through the provision of equity-promoting services; and b) steward wider action on the social determinants of health.
- The European Union, including the European Centre for Disease Prevention and Control, the Council of Europe and WHO policy commitments and frameworks, research and tools support a health systems approach to tackling the social determinants of TB and other priority public health conditions.
- To address differential exposure, outcomes and consequences of TB and other priority public health conditions, current strategies need to be reinvigorated and combined with new strategies to directly tackle social determinants. This requires:
 - strengthening and improving the coverage of existing TB programmes to reduce TB morbidity and mortality;
 - taking a social determinants of health approach to better prevent and address the consequences of TB, including risk factors that lie outside of the health system; and
 - strengthening health systems (particularly through a primary health care approach).
- Global evidence, gathered broadly by the Commission and specifically by the Network, reveals several important action streams for addressing priority public health conditions, including TB. These consist of:
 - universal social protection systems, which use targeting only for populations that fall through the cracks;
 - enhanced availability, accessibility, acceptability and quality of primary health care, TB care and other services;
 - intersectoral action for health; and
 - social empowerment and respectful treatment.
- By addressing the “causes of the causes”, action on the upstream determinants of health will lead to improvements in several different priority public health conditions.
- Collaboration, robust data collection systems and community and patient involvement should underlie action in all areas.
- Future research should further develop the evidence base illustrating the causal pathways of the social determinants of TB in the European context and the efficacy of particular strategies and programmes. Mapping of up-, mid- and downstream determinants, in addition to differential vulnerability and consequences at national level, is a key component of this.

Executive summary

The Priority Public Health Conditions Knowledge Network of the WHO Commission on Social Determinants of Health identified TB as a priority public health condition because it represents a large aggregate burden of disease, exhibits significant disparities across and within populations and affects certain groups disproportionately. Current patterns of inequity also favour the continued prevalence of TB.

This briefing merges two fields of analysis:

1. research on the social determinants of priority public health conditions, using TB as an example, for improved health equity; and
2. analysis on how a health-systems-strengthening approach can contribute to more effective programme delivery and health outcomes.

The Tallinn Charter: Health Systems for Health and Wealth (WHO Regional Office for Europe, 2008), endorsed by the 53 Member States of the WHO European Region in 2008, represents policy consensus regarding the primary functions of health systems, delineating what a health systems approach to both implementing and going beyond current TB control activities might comprise. These functions include delivering health systems, providing financing, creating resources and providing stewardship.

The literature and case study synthesis undertaken by the Network showed that social determinants shape the spread of TB at multiple levels. These determinants are differentially distributed, with the poor and socially excluded disproportionately exposed. Government policies, global economic trends and other structural factors shape poverty and the strength of health care systems. These in turn contribute to downstream factors, such as the prevalence of TB in the wider community, living conditions, tobacco use and prevalence of diseases of the poor that increase TB vulnerability. Downstream factors interact with biology to shape the likelihood of exposure to TB droplets and, when exposed and infected, the likelihood of developing active disease.

Consequences can also be socially determined. Those without health insurance, for example, may be more likely to become impoverished by the costs associated with treatment. While the downstream factors are the main focus of biomedical interventions, unless remedied, upstream factors will continue to reproduce the conditions giving rise to health inequities (PPHC–KN, 2007).

Analysis of these social determinants has policy implications. Current strategies need to be reinvigorated and combined with new strategies to directly tackle known social determinants. This requires:

- strengthening and improving the coverage of existing TB programmes to reduce TB morbidity and mortality;
- taking a social determinants of health approach to better prevent and address the consequences of TB, including risk factors that lie outside of the health system; and
- strengthening health systems, particularly through a primary health care approach.

Operationalization of these three principles might include improving universal social protection systems, using targeting only for those who fall through the cracks of universal services, and enhanced availability, accessibility, acceptability and quality of primary health care, TB and other services. Intersectoral action for health would also be required, entailing health impact assessments, providing examples of good practice to other sectors, supporting civil society groups to advocate for enhanced action by all on the social determinants of health and providing evidence regarding the relationship between health outcomes and social determinants. Social empowerment and respectful treatment should underlie all of these actions.

Introduction

Tuberculosis (TB) has been declared a “regional emergency” in the WHO European Region (WHO Regional Office for Europe, 2007a). Despite recent progress, high incidence rates persist, as does the spread of multidrug-resistant (MDR) TB. Increasing numbers of TB cases among those living with HIV and outbreaks among the large imprisoned population suggest that high incidence rates will continue (WHO Regional Office for Europe, 2007a).

The Priority Public Health Conditions Knowledge Network (PPHC–KN) of the WHO Commission on Social Determinants of Health (CSDH) (Box 1) identified TB as a priority public health condition because it:

- represents a large aggregate burden of disease
- exhibits significant disparities across and within populations
- affects certain groups disproportionately.

In addition, current patterns of inequity favour the continued prevalence of TB.

Box 1. The WHO CSDH and priority public health conditions

WHO established the CSDH in 2005 to encourage debate on the opportunities for policy and action on the social determinants of health. Social determinants contribute to health inequities, which are the unfair and modifiable differences in health within and among countries. CSDH's work included supporting health policy change in countries by assembling and promoting effective, evidence-based models and practices that address social determinants. In addition, CSDH undertook a global review of evidence, convening several different knowledge networks to offer advice. PPHC–KN identified ways to address the social determinants of priority conditions, including TB, while other knowledge networks on social exclusion, globalization, employment conditions and health systems analysed thematic determinants of population health (as opposed to particular health conditions). Analyses from these networks, particularly PPHC–KN, are reflected in this briefing.

As part of PPHC–KN's work, WHO undertook a review of global TB surveillance data, developed country case studies and performed an extensive literature review. It concluded that exposure to TB bacteria, the likelihood of becoming ill once exposed, the likelihood of receiving timely diagnosis and completing treatment and the impact of having had TB are differentially distributed both *within* and *among* countries (Lönnroth et al., 2010). Finding that “we may face a dual problem of inadequate interventions and poor implementation” (PPHC–KN, 2007), PPHC–KN suggested ways of enhancing the equity focus in current strategies, identified possible causal pathways linking upstream social determinants with TB disease and proposed areas for intervention beyond those currently included in global and regional TB control strategies (Lönnroth et al., 2010).

According to the WHO Regional Office for Europe (2008), health systems are:

... [the] ensemble of all public and private organizations, institutions and resources mandated to improve, maintain or restore health; they encompass both personal and population services, as well as activities to influence the policies and actions of other sectors to address the social, environmental and economic determinants of health.

Health systems that do not operate optimally can further exacerbate health inequities. On the other hand, if they successfully collect evidence on health inequities, advocate for and contribute to intragovernment action to ensure equity in all sectors and deliver available, accessible, appropriate and high-quality services (ECOSOC, 2000), health systems will play a leading role in lessening socially determined health inequities. Recent analytic advances and policy commitments in the European Region further define how health systems might fulfil these functions.

This briefing merges two fields of analysis:

1. research on the social determinants of priority public health conditions for improved health equity, using TB as an example;
2. and how an approach focusing on strengthening health systems can contribute to more effective programme delivery and health outcomes.

Using the PPHC–KN framework, the briefing analyses the evidence base regarding the social determinants of TB in the European Region and synthesizes avenues for action according to health system functions.

TB in the European Region

Five per cent of the world's new TB cases in 2008 occurred in the European Region, and over 55 000 people died of TB in the Region in 2008 (WHO, 2009). Despite relatively lower rates of TB incidence and prevalence in comparison with other regions, the European Region is particularly burdened with high rates of MDR-TB. Of the 27 high-burden countries for MDR-TB globally, 15 are in the European Region (WHO, 2009).

WHO has identified epidemiological subregions, which allows a more context-specific discussion of TB rates to take place. Three subregions comprise the 53 Member States of the European Region:

1. eastern Europe¹
2. central Europe²
3. established market economies.³

In the most recent global update on TB control, WHO reports that central and eastern Europe appear to have reached the Stop TB Partnership target of halving the 1990 prevalence rate, and that central Europe has probably achieved the target of halving the 1990 mortality rate (WHO, 2009). Eastern Europe, which bears the burden of the preponderance of MDR-TB and TB/HIV co-infection cases, faces particular challenges in reaching mortality-related goals (WHO, 2009).

The Global Plan to Stop TB 2006–2015 (Stop TB Partnership, 2006), the Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 (WHO Regional Office for Europe, 2007a) and the European Centre for Disease Prevention and Control (ECDC) Framework Action Plan to Fight Tuberculosis in the European Union (ECDC, 2008) include complementary activities that aim to reduce TB-related morbidity and mortality, as per the Millennium Development Goals (MDGs) (UNDP, 2006) (see Box 2).

Box 2. DOTS and the Stop TB Partnership

MDG 6 is related to HIV/AIDS and other communicable diseases. Two targets are specific to TB:

1. to reduce the incidence, prevalence, and death rates associated with tuberculosis
2. to increase the proportion of TB cases detected and cured under directly observed treatment, short-course (DOTS).

The Stop TB Strategy is the WHO-recommended approach to TB control (WHO, 2006a). DOTS, the WHO-recommended method of TB treatment, consists of:

- political commitment with increased and sustained financing
- case detection through quality-assured bacteriology
- standardized treatment with supervision and patient support
- an effective drug supply and management system
- monitoring and evaluation systems and impact measurement (WHO, 2006a).

The Stop TB Partnership is a network of international organizations, governments, donors from the public and private sectors, nongovernmental organizations and individuals working together to stop TB. The Partnership secretariat is hosted at WHO headquarters. In 2006, the partnership released the Global Plan to Stop TB (Stop TB Partnership, 2006), a framework for international and country-level activities.

To better address the social determinants of TB, health systems will need to better implement the activities detailed in Tables 1 and 2, with an enhanced equity focus.

¹ Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Republic of Moldova, Romania, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan (WHO, 2009).

² Albania, Bosnia and Herzegovina, Montenegro, Poland, Serbia, the former Yugoslav Republic of Macedonia, Turkey (WHO, 2009).

³ This subregion also includes established market economies outside the European Region. Those in the European Region include: Andorra, Austria, Belgium, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom, (WHO, 2009).

Table 1. Six components of the Stop TB Strategy outlined in the Global Plan to Stop TB

No.	Components
1	Pursue high-quality DOTS expansion and enhancement: <ul style="list-style-type: none"> • political commitment with increased and sustained financing • case detection through quality-assured bacteriology • standardized treatment with supervision and patient support.
2	Address TB/HIV, MDR-TB and other challenges: <ul style="list-style-type: none"> • implement collaborative TB/HIV activities • prevent and control MDR-TB • address prisoners, refugees and other high-risk groups.
3	Contribute to health system strengthening: <ul style="list-style-type: none"> • actively participate in efforts to improve system-wide policy, human resources and financing • share innovations that strengthen systems, including the practical approach to lung health (WHO, 2008a) • adapt innovations from other fields.
4	Engage all care providers: <ul style="list-style-type: none"> • public–public, and public–private mix (PPM) approaches • International Standards for Tuberculosis Care (TBCTA, 2006).
5	Empower people with TB and communities: <ul style="list-style-type: none"> • advocacy, communication and social mobilization • community participation in TB care • Patients’ Charter for Tuberculosis Care (World Care Council, 2010).
6	Enable and promote research: <ul style="list-style-type: none"> • programme-based operational research • research to develop new diagnostics, drugs and vaccines.

Source: WHO (2006a), Stop TB Partnership (2006).

Table 2. The main interventions included in goals of the Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 and the Framework Action Plan to Fight Tuberculosis in the European Union.

Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015	Framework Action Plan to Fight Tuberculosis in the European Union
1. To expand access to high-quality diagnosis and treatment equally for people with all types of TB, in all age, gender and socioeconomic groups.	Increase political and public awareness of TB as a public health issue in the European Union (EU).
2. To reduce the suffering and socioeconomic burden associated with TB.	Support and strengthen EU Member States’ efforts against TB in line with the national epidemiological situation and challenges.
3. To protect poor and vulnerable populations from TB, including MDR-TB and TB/HIV.	Contribute to the control of TB in the EU by supporting those countries from which imported cases originate.
4. To support the timely and effective introduction of new tools for diagnosis, treatment and prevention of TB.	

Source: WHO Regional Office for Europe (2007a); ECDC (2008), reproduced with the permission of the copyright holder.

Not all objectives have been pursued with equal effort, and the content of all has not been clearly articulated. Political commitment, for example, is the least-studied aspect of the Stop TB Strategy, perhaps because failures are rarely discussed in peer-reviewed literature and because it is difficult to assess through clinical or epidemiological data (Coker, Atun & McKee, 2004). In addition to renewed focus on implementing the entirety of global strategies, addressing the social determinants will require going beyond these activities. When developed, the strategies did not integrate – or aim to address – some of the upstream drivers of TB vulnerability, such as demographic changes, urbanization and other macro-level factors (Lönnroth et al., 2010).

National TB programmes, social determinants and health systems

National TB programmes have historically been largely vertical, particularly in central and eastern Europe. They may maintain distinct surveillance, commodity supply chain and human resource training and supervision programmes. Given this, what role might national TB programmes, ministries of health and wider health systems play in a broadened approach?

The Tallinn Charter: Health Systems for Health and Wealth (WHO Regional Office for Europe, 2008), endorsed by the 53 Member States of the European Region in 2008, exemplifies shared commitment to promoting the values of solidarity, equity and participation through health policies and resource allocation, ensuring due attention is paid to the needs of the poor and other vulnerable groups. The Charter represents policy consensus around the primary functions of health systems, delineating what a health-systems approach to implementing and going beyond the activities above might comprise. These functions include delivering health systems financing, creating resources and providing stewardship.

Effective health systems are available, accessible, appropriate and of the highest possible quality (ECOSOC, 2000). A particular focus on vulnerable groups, the integration of disease-specific programmes and effective primary health care (PHC) are indispensable to health system delivery (WHO Regional Office for Europe, 2008).

Identified by the CSDH Health Systems Knowledge Network (HSKN) as one of the four key overarching features of health systems that address health inequity (Gilson et al., 2007), the revitalization of a PHC approach is concordant with global TB priorities. PHC is arguably the most important point of entry for early TB diagnosis and a significant mechanism for promoting treatment completion (Stop TB Partnership, 2008; Borowitz et al., 2008).

The Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 (WHO Regional Office for Europe, 2007a) aims for an increase in the percentage of patients taken into care at PHC level to 95% by 2015, but the ability of PHC systems in Europe to meet this goal is questionable. PHC coverage in rural areas may be poor, with patients needing to travel long distances to reach a facility. Extant facilities may lack basic infrastructure such as running water and may be staffed by undertrained health care workers (HCWs) who receive salaries well below the national average (Kulzhanov & Rechel, 2007; Richardson et al., 2008; Atun et al., 2008). Finally, PHC may not have well-functioning referral systems, meaning that the flow of TB-symptomatic patients from PHC to TB diagnosis is either too slow or unreliable (Atun et al., 2008).

Relevant aspects of delivering health systems financing include the following.

- Adequate funding needs to be allocated to execute the other three health system functions (WHO Regional Office for Europe, 2008). Examination of TB programme financing domestically and internationally is relevant. Some countries have experienced serious setbacks in the fight against TB due to past underinvestment in programmes (Frieden, 2009), underlining the importance of consistent financing. TB will not be eradicated in the developing world without substantial investment from countries with developed market economies (Currey, Quamruzzaman & Rahman, 2007). Indeed, a 2010 communication from the European Commission (EC) on the EU role in global health states that the EU should “increase ... development aid in the poorest countries,” with due attention being paid to predictable and cohesive support (EC, 2010).
- Financing needs to be done in a manner that redistributes resources to meet health needs and appropriately balances curative services and prevention (WHO Regional Office for Europe, 2008). As TB disproportionately affects the poor, simply having strong TB programmes serves a redistributive purpose. However, to prevent TB and to remedy the conditions that give rise to inequitable health status will require collaborative financing and other activities beyond the traditional remit of the health sector.
- Financial barriers to the use of needed services and the financial repercussions of accessing care need to be reduced (WHO Regional Office for Europe, 2008). These aspects are particularly relevant to the diagnosis and treatment of TB, an illness that may take from six months to over two years to treat and which entails both direct and opportunity costs (Stop TB Partnership, 2006; WHO, 2006b). Social protection systems have a key role to play in ensuring that TB disease does not exacerbate poverty.

Creating resources includes creating, improving and maintaining knowledge, infrastructure, technologies and human resources (WHO Regional Office for Europe, 2008). New disaggregated data and programmatic evidence are required to better document the distribution of disease, the impact of policies on health equity and the efficacy of programmes addressing the upstream determinants of inequities. The need for such data was affirmed in the EC Communication *Solidarity in Health: reducing health inequalities in the EU* (EC, 2009) and the Sixty-second World Health Assembly 2009.

New drugs, diagnostics and vaccines are also imperative resources. Laboratory infrastructure challenges and delays contribute to the rates of those lost to follow-up; TB drug side-effects continue to feed treatment challenges; and providers face particular challenges in diagnosing and treating increasingly affected populations, such as children (ECDC, 2008). Suffering from historic underinvestment due to the fact that TB is a disease of the poor (Belt & Maher, 2008), research and development is now increasing, with the ECDC and WHO suggesting that the EU and its institutions can be at the “forefront” of these efforts (ECDC, 2008). Development of new technology is insufficient; health policy-makers will need to develop new, robust delivery systems as part of the health service delivery function.

Finally, adequately trained and supported human resources constitute an important part of resources for TB control. Insufficient numbers of HCWs, poor coordination among them in different sectors, lack of regulation and supervision, inadequate involvement of private sector or civil society health and social care providers, perverse incentives, retirement without replacement, maldistribution of resources within countries and low HCW motivation limit TB control success (Stop TB Partnership, 2008; Borowitz et al., 2008; Stop TB Partnership, 2006).

The preponderance of health system-led efforts on the social determinants of TB will fall under the domain of stewardship/governance functions. Appropriate implementation of delivery, financing and resource-generation functions to address the social determinants of TB will require concerted leadership by the national TB programme and national-level health authorities, underlining the centrality of stewardship and governance.

The five subfunctions of stewardship/governance consist of: policy guidance; intelligence and oversight; regulation; coalition-building; and transparency and accountability. Coalition-building entails creating platforms for cooperation between health systems and the population, among different actors in the health system, and between the health system and other sectors related to health. Accountability requires that mechanisms for data collection are in place. Indeed, “measuring and understanding the problem and assessing the impact of action” was one of three major priorities identified in the final report of CSDH (2008). Data should be disaggregated by: sex; socioeconomic status (SES); place of residence; ethnicity (where relevant); and other pertinent categories. This will allow assessment of policy and programme impact on the whole population and the efficacy of interventions in reaching everyone. The implications and possible content of these activities are further discussed below.

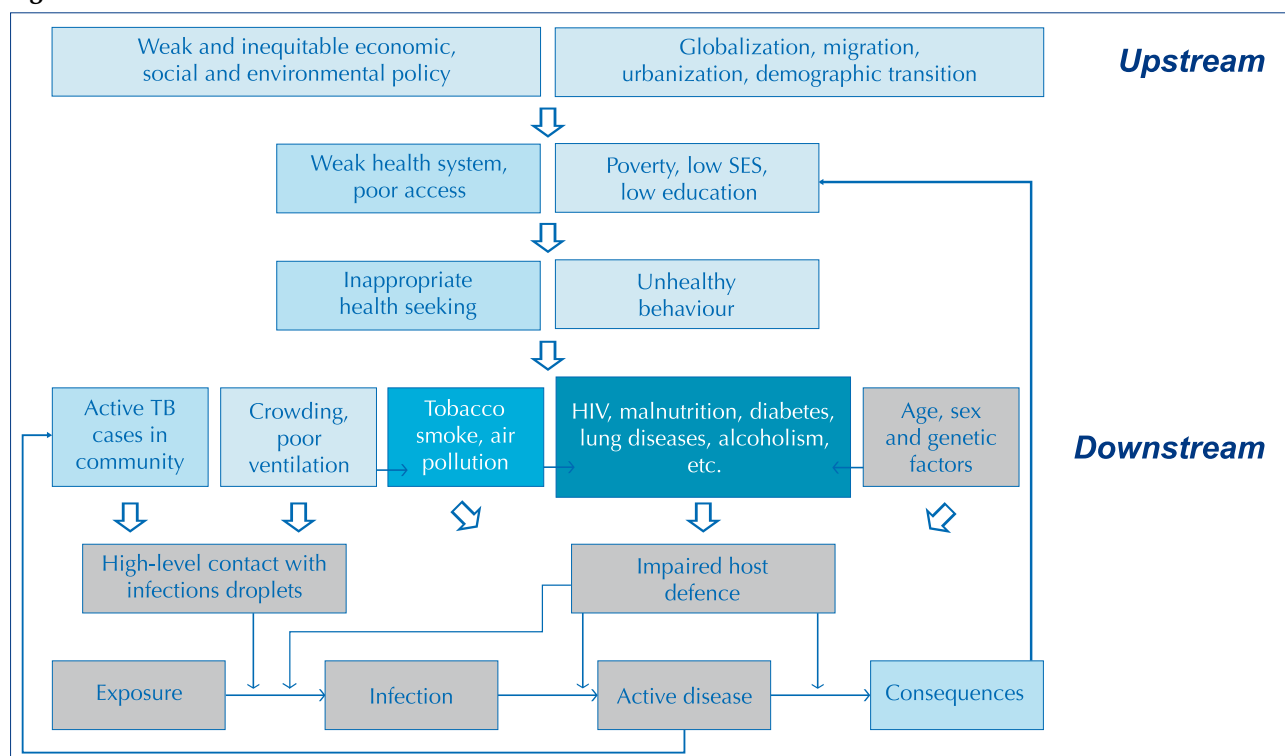
It is also important to look at the impact that specific programmes for priority public health conditions have on the wider health system. Sound national TB programmes will inherently strengthen broader health systems, although short-sighted implementation has the potential to undermine them.

WHO developed a document outlining guiding principles for national TB programmes to contribute to health systems and which delineates several areas in which national TB programmes can enhance overall health system functioning (WHO, 2008b). First, regular monitoring of TB programme performance indicators and management will reveal broader weaknesses in areas such as capacity for health policy analysis, coordination among actors within the ministry of health, lack of adequate central coordination, poor-quality education for HCWs, weak regulation of medical products and poor referral systems, among others. Second, national TB programmes can identify opportunities and threats to broader health sector development processes and proactively inform broader ministry of health policy.

The social determinants of TB

Fig. 1 represents many of the key factors that were found to be strongly associated with TB in the literature and case study synthesis undertaken by the PPHC–KN.

Fig. 1. The social determinants of TB



Source: Lönnroth et al. (2009a), reproduced with the permission of the copyright holder.

As Fig. 1 shows, government policies, global economic trends and other structural factors shape poverty and the strength of health care systems. These in turn contribute to downstream factors, such as the prevalence of TB in the wider community, living conditions, tobacco use and prevalence of diseases of the poor that increase TB vulnerability. Downstream factors interact with biology to shape the likelihood of exposure to TB droplets and, when exposed and infected, the likelihood of developing active disease. Consequences can also be socially determined: those without health insurance, for example, may be more likely to become impoverished by the costs associated with treatment. While the downstream factors are the main focus of biomedical interventions, upstream factors, unless remedied, will continue to reproduce the conditions giving rise to health inequities (PPHC–KN, 2007).

The PPHC–KN employed a conceptual framework (adapted from Whitehead & Dahlgren, 2006) that includes five levels of analysis for the social determinants of health:

1. socioeconomic context and position
2. differential exposure to TB risk factors
3. differential vulnerability
4. differential outcomes
5. differential consequences.

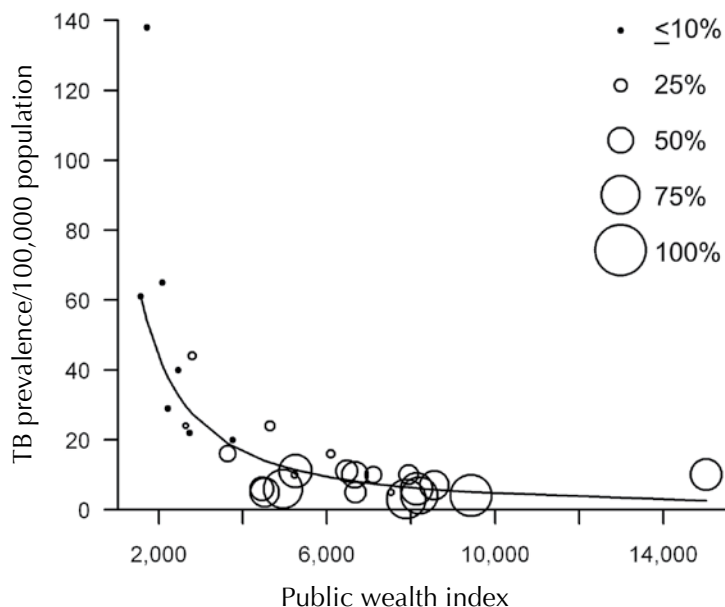
Discussing data related to each of these factors facilitates greater understanding of the dynamics represented in Fig. 1.

Socioeconomic position

Socioeconomic position (SEP) or, as represented in Fig. 1, poverty, low SES and low education, shapes health behaviours and access to health care as well as exposure to downstream determinants or proximate risk factors to TB such as poor housing, diabetes and malnutrition.

Extensive data document the links between SEP and TB infection, TB disease and treatment outcomes (WHO, 2006b). Other studies show a link between TB and wealth inequality, as opposed to overall gross domestic product (GDP). For example, a recent ecological study undertaken with data from EU Member States found a fairly strong correlation between TB prevalence and wealth inequality, as shown in Fig. 2. The authors compared TB prevalence rates to the Public Wealth Index (PWI), an index that divides a nation's economic wealth by its level of social cohesion, as measured by Eurostat's inequality of income distribution ratio (Suk et al., 2009). In countries with higher GDP, those who were foreign-born were disproportionately affected.

Fig. 2. Comparison of TB prevalence rates to Public Wealth Index



Note: Public wealth index and TB prevalence rates in the 27 European Union member states plus Norway and Iceland, 2006. Source: Suk et al. (2009), reproduced with the permission of the copyright holder.

Rather than assessing markers of SEP *per se*, other studies exploring the role of SEP in TB examine associations between TB and groups who are disproportionately poor, such as ethnic minorities, prisoners, problem drug users, migrants, alcohol users and people living with HIV (Story et al., 2006). Data indicate that these groups often disproportionately experience TB disease and challenges to treatment completion. However, while identifying particularly affected groups suggests who might need to be reached by preventive and curative services, the risk-group approach may also obfuscate, stigmatize or lead to less-effective interventions. Simply naming risk groups contributes to perceptions that particular groups are vectors of infectious disease. Described as “black-box epidemiology” (Susser & Susser, 1996), identifying categories of affected populations without specifying causal pathways leads to interventions that focus on individual behaviours and determinants, rather than the more salient social determinants of disease.

Looking at up-, mid-, and downstream *risk factors* associated with SEP, rather than risk groups, better elucidates the causal pathways of inequities in disease exposure, vulnerability and outcomes. Analysis of causal pathways also allows for a more nuanced understanding of intersectionality – the notion that various axes of inequality interact in different ways in different situations to shape exposure and vulnerability to those exposures (Iyer, Sen & Östlin, 2010). In other words, SEP, gender, disability status and other factors interact to shape health status: attention to the socioeconomic gradient alone is insufficient.

Differential exposure to upstream risk factors

Particularly pertinent upstream risk factors include increasing economic inequities. Economic inequities persist throughout the European Region. In 2007, 17% of persons – 84 million people – had an equivalized disposable income below 60% of the national median after social transfers for the country they lived in (Eurostat, 2010). Almost 30% of the 480 million people in eastern Europe and central Asia are still considered poor or vulnerable (World Bank, 2009).

Over the past decades, globalization has increased economic inequities, in part through its links to insecure employment. This comprises lack of security regarding employment tenure, salary and working conditions and the possession of little bargaining power (Scherer, 2009; EMCONET, 2007). Globalization contributes to migration (CSDH, 2008) and, according to a framework articulated by ECDC, migration relates to health in several different ways.

Prior to entry, a migrant's health reflects the disease profile of his or her country of origin. The process of travelling to a destination country, including through intermediate countries, can negatively influence a migrant's health. Finally, once in a new country, living and/or working conditions can affect a migrant's health (ECDC, 2009).

Many countries do not have adequate protections for labour migrants, making them vulnerable to exploitation from recruiters, employers and authorities (ILO, 2009). The numbers implicated are not negligible. For example, there are about 1.9 million registered migrants in the Russian Federation (ILO, 2009), with the number of undocumented migrants unknown. More than 27 million foreigners reside in the EU (ECDC & WHO Regional Office for Europe, 2009); about 5 to 6 million of these are undocumented (Heldal et al., 2008).

Social inequities feed – and reflect – social exclusion (see Box 3). Excluded individuals have limited ability to exercise the rights of citizenship, implying a lack of fulfilment of health and other rights. Those living in exacerbated exclusion, such as the undocumented, the homeless, people living in institutions and prisoners (SEKN, 2008; Story et al., 2006; WHO Regional Office for Europe, 2007b) are disproportionately exposed to TB risk factors. Indeed, increased exposure to risk factors associated with the experience of irregular migration is clearly borne out in data: on average, about 10% of all TB cases in low-prevalence countries are undocumented migrants (Heldal et al., 2008).

Box 3. Social exclusion

Social exclusion is a dynamic process driven by unequal power relationships that interact in economic, political, social and cultural realms (SEKN, 2008). The concept of social exclusion adds value to analysis of priority public health conditions through its emphasis on the role of hierarchical relationships and policy responses. Poverty and power are distributed based on one's position within several intersecting hierarchies, and the nature and impact of these relationships can be modified through policy choices.

All countries in the European Region have social protection systems, but their universality and generosity vary (CSDH, 2008; Scherer, 2009), with the excluded sometimes lacking access. In some situations, people are unable to access assistance to which they are entitled: in other situations, restrictive policies limit eligibility and the extent of social protection. For example, several central and eastern European countries recently decreased the period for unemployment insurance eligibility to as little as six months while simultaneously decreasing the amount constituting assistance (Hacker, 2009). In western Europe, some populations, such as asylum seekers, live in "states of exception" with inadequate access to social protection (SEKN, 2008).

Differential exposure to mid- and downstream risk factors

Upstream political, social and economic dynamics contribute to exposure to mid- and downstream risk factors. These include: imprisonment, poor living conditions (indoor pollution, malnutrition) and health behaviours (tobacco use, diabetes), and lack of access to quality health care for conditions that underlie TB vulnerability, such as diabetes, or for TB itself.

Imprisonment and detention are important risk factors for TB in the European Region. People entering prison are more likely to have latent TB, and the conditions inside, including overcrowding and poor nutrition, facilitate the development of active TB disease and the spread of TB infection to others (WHO Regional Office for Europe, 2007b). Ten per cent of all TB cases reported in eastern Europe in 2004 were among prisoners (WHO Regional Office for Europe, 2007b). Indeed, a recent study analysing data in 26 countries detected a dose–response relationship between incarceration rates and TB incidence, controlling for TB infrastructure, HIV prevalence and other factors (Stuckler et al., 2008).

Although data on pre-trial detention are less available, this probably plays a role in fostering TB transmission in some countries, as conditions are similar to those in prison (WHO Regional Office for Europe, 2007b; Coker et al., 2006). The proportion of TB cases among prisoners is decreasing in eastern Europe, however, due in part to

strengthened treatment programmes (Shin et al., 2006). Imprisonment nevertheless continues to be an important midstream determinant, as rates of TB remain disproportionately high among those who enter prisons, and rates of MDR-TB are disproportionately high among former prisoners.

Crowded, unventilated living conditions facilitate the spread of TB infection (Bates et al., 2004; Wanyeki et al., 2006). The poor and socially excluded are more likely to live in such housing. Poor housing conditions have been documented among migrants and ethnic minority groups in the EU (ECDC & WHO Regional Office for Europe, 2009), a phenomenon that may be on the rise with increasing urbanization. In October 2009, the EU Agency for Fundamental Rights (FRA) released a report detailing substandard, segregated, and unhealthy housing in excluded Roma communities throughout the European Region (FRA, 2009).

Health services may be inaccessible by those most in need for several reasons, such as gender inequity (see Box 4), lack of insurance, geographic distance from health care facilities, the costs associated with receiving care and fear or stigma. Globally, TB occurs disproportionately among men, probably due to the fact that men are disproportionately exposed to risk factors such as tobacco and alcohol consumption and are more likely to have been imprisoned (WHO Regional Office for Europe, 2007d). However, sex differences in TB notification rates in some countries of eastern Europe are higher than expected, suggesting that some women may fail to seek diagnosis (WHO Regional Office for Europe, 2007d). Further research is required, particularly in light of a recent study in Georgia showing that female sex was a modest risk factor for MDR-TB (Mdivani et al., 2008).

Box 4. Gender inequity

Gender is not the same as sex, and can be defined as the socially constructed differences between women and men (EC, 2008). Gender inequity refers to systematic differences in the “distribution of benefits, power, resources and responsibilities between women and men” (WHO Regional Office for Europe, 2002).

As a key component of social protection systems, health financing systems should facilitate universal access to health services. However, just as in the case of social protection systems more broadly, coverage may be inadequate because individuals are unable to exercise their entitlements, the generosity of the system is insufficient to cover needs or people are not eligible for coverage.

Factors related to health service quality can decrease demand for TB health services. Stigma at community or health care facility level may discourage health-care-seeking among those who experience respiratory symptoms (WHO Regional Office for Europe, 2007a). Past discriminatory treatment by health care providers may deter certain groups – usually those most in need of services – from seeking care. For example, in a recent survey of over 25 000 ethnic minority and immigrant groups conducted by the FRA, about 10% of respondents reported that they experienced discrimination by health or social service providers in the last 12 months (FRA, 2009).

Fear of the state may also play a role in some cases. Undocumented migrants in most low-incidence countries are vulnerable to deportation, even if they are on TB treatment (Heldal et al., 2008), possibly decreasing demand for TB treatment among this population. Similarly, injecting drug users in some countries may justifiably fear harassment or incarceration and will consequently avoid PHC or TB-specific services, where their drug use will be evident. In addition to fearing arrest, they may have encountered stigma via health and social service workers (WHO, 2008c).

Differential vulnerability

Individuals exposed to distal and proximate risk factors may be more or less likely to become infected (or to develop active TB disease if already infected) based on underlying vulnerability accrued over the life course. Vulnerability is differential: the poor and socially excluded are more likely to have biomedical conditions or health behaviours that impair host defences. These include alcohol and tobacco consumption, being HIV positive, being malnourished, experiencing the affects of indoor air pollution or having silicosis or diabetes (Lönnroth et al., 2009a).

Table 3, based on an analysis of global data, illustrates the increased likelihood of developing TB among those experiencing these vulnerabilities, as well as the global burden of TB attributable to each.

Table 3. Underlying vulnerabilities for TB and relative risk of active TB

Vulnerability	Relative risk of active TB	Population-attributable fraction
HIV infection	20.6/26.7*	19%
Malnutrition	3.2**	27%
Diabetes	3.1	6%
Alcohol use (40g/day)	2.9	13%
Active smoking	2.6	23%
Indoor air pollution	1.5	26%

*Updated data in WHO's global TB report 2009. Rate ratio of 26.7 used for countries with HIV <1%

**Updated data from Lönnroth et al. (2009b)

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In the European Region, smoking, high alcohol consumption (Lönnroth et al., 2010) and HIV are among the most significant vulnerabilities. Extensive discussion of all these factors is beyond the scope of this briefing, but a few examples illustrate the ways in which vulnerabilities disproportionately affect the excluded.

In the European Region, about 30% of adults smoke, and poor men are more likely to do so than middle-class and wealthy men (WHO Regional Office for Europe, 2004). Indoor air pollution is experienced most frequently by families using solid fuels without adequate chimneys (WHO, 2005) (see Box 5). Silicosis is an occupational disease associated with manual labour jobs, crushing or blasting sand, rock, concrete or some ores (WHO, 2000). Chronic alcoholism thrives in the context of social and economic dislocation, particularly in eastern Europe (Zaridze et al., 2009).

Box 5. Indoor air pollution and solid fuel

A high percentage of the population in some countries relies on solid fuel:

- Tajikistan: 75%
- Uzbekistan: 72%
- Republic of Moldova: 63%
- Albania: 50%
- Bosnia and Herzegovina: 50% (WHO, 2007).

In 2008, shared needles were the primary mode of HIV transmission in eastern Europe and played a key role in HIV transmission in central and eastern Europe (ECDC & WHO Regional Office for Europe, 2009). As indicated in Table 4, HIV prevalence among incident TB cases is fairly high in some countries. These individuals are about eight times more likely to develop active TB than TB-exposed individuals who are HIV negative. They experience multiple challenges to TB treatment completion, including the possible need to take antiretroviral medication and anti-TB medication concurrently, co-morbid opiate dependence and challenges in accessing several disjointed sites of service provision (WHO, 2008c).

Table 4. Five countries with highest HIV prevalence among incident TB cases

Country	HIV prevalence among incident TB cases
Ukraine	20
Portugal	20
Estonia	17
Russian Federation	16
Switzerland	8.6

Source: WHO (2009).

While the excluded are more likely to experience these co-morbid conditions, they may also be less likely to access treatment. This worsens outcomes for TB and for the co-morbid illnesses.

Differential health outcomes

Due to the inequitable distribution of TB disease and vulnerability and varying experiences with health and social protection systems, individuals and their families experience differential *health outcomes* of TB disease.

The poor and excluded are more likely to experience suboptimal health outcomes, punitive (rather than autonomy-enhancing) treatment and negative economic impacts as a result of their contact with the health care system (CSDH, 2008; Coker, 2000; Golembeski & Fullilove, 2008). Moreover, because they are more likely to experience co-morbidities and socioeconomic challenges, these same patients may be disproportionately affected by poor service coordination and integration (WHO, 2008c; Boerma, 2006). Table 5 was developed by WHO to illustrate challenges to equitable TB outcomes (and consequences).

Table 5. Role of poverty in TB diagnosis and treatment

Poverty affects people's ability to access services at all stages of care-seeking					
Symptoms	Help-seeking	Health services	Diagnosis	Treatment adherence	Positive outcome
Pro-poor approaches in service delivery should enable more people from vulnerable groups to access care at each stage					

Source: WHO (2006b).

Patients who are poor and socially excluded may have particular trouble at every step in the patient pathway. Because these challenges play a bigger role in countries that are poorer overall, health outcomes differ among countries. In 2006, treatment success rates for smear-positive cases within DOTS programmes averaged 73% in eastern Europe and 80% in both central Europe and the established market economies of the Region (WHO, 2009). The 2007 mortality rate for all forms of TB was 14% in eastern Europe, 5% in central Europe and 1% in the established market economies (WHO, 2009).


Outcomes also differ within countries. The existence of MDR-TB is a testament to the fact that health services have not been performing adequately; MDR-TB arises when patient adherence has been poor, drug supply is erratic and overall TB programme management is poor (Shah et al., 2007; Manissero & Fernandez de la Hoz, 2006; ECDC & WHO Regional Office for Europe, 2009). While the Global Plan to Stop TB, 2006–2015 (Stop TB Partnership, 2006), the International Standards for Tuberculosis Care (TBCTA, 2006), the WHO Plan to Stop TB in 18 High-priority Countries in the WHO European Region, 2007–2015 (WHO Regional Office for Europe, 2007a) and the Framework Action Plan to Fight Tuberculosis in the European Union (ECDC, 2008) all call for integrated, patient-centred care, these aspirations are unsatisfactorily realized (WHO, 2006b; ECDC & WHO Regional Office for Europe, 2009).

Cooperation between social workers and TB care providers, prison and civilian health authorities, PHC and TB care providers and TB and HIV programmes may not be adequate to enable treatment completion, particularly for those patients facing the greatest challenges. For example, prison health systems are part of the ministry of health only in the United Kingdom (England), Norway and France (WHO Regional Office for Europe, 2007b). In other countries, the two programmes are separate: TB patients may leave prisons while still on treatment and be lost to follow-up.

Studies at facility or regional level illustrate some dynamics of poor treatment outcomes. For example, a study of patients undergoing MDR-TB treatment in the Russian Federation showed that reported alcohol use and alcohol dependence during TB treatment were associated with poor TB treatment outcomes (Shin et al., 2006). Treatment outcome reviews in western Europe and the United States show that the homeless face particular challenges to treatment adherence (Tanguis et al., 2000; Pablos-Mendez et al., 1997). This may be due to a variety of causes, including that TB patients who do not have housing may prioritize food and other essential immediate needs over TB treatment.

Differential consequences

While TB treatment is free, contact with the health care system entails costs, leading to *differential consequences* of health service utilization. These might include costs associated with self-treatment or general health services prior to TB diagnosis, formal payments for services, informal payments to health care providers, other costs



related to co-morbidities, the opportunity cost of not working during treatment, and transport costs. The poor and excluded may delay treatment in an effort to avoid paying for health care, but once they do access services, they allocate a greater percentage of their income to paying (Whitehead & Dahlgren, 2006). As a result, the consequences of TB disease are differential: the poorest might be caught in a “poverty trap” that the WHO Commission on Macroeconomics and Health (2001) explains may be long-lasting:

... out-of-pocket outlays for serious illness can push them into a poverty trap from which they do not recover, by forcing them into debt or into the sale or mortgaging of productive assets (such as land). A serious illness may plunge a household into prolonged impoverishment, extending even to the next generation.

Policy implications

As was illustrated in the previous section, understanding the role of social determinants in shaping the distribution of priority health conditions is vital to understanding why conditions such as TB continue. Current strategies need to be reinvigorated and combined with new strategies to directly tackle known social determinants. This requires the following.

1. The coverage of existing TB programmes needs strengthening and improving to reduce TB morbidity and mortality. Equitable access and elimination of specific TB care access barriers merit particular attention. In some cases, outreach to particular groups may be required. Improved coordination with other disease programmes will strengthen existing TB coverage and facilitate action on underlying vulnerabilities, such as tobacco use and malnutrition.
2. A social determinants of health approach is needed to better prevent and address the consequences of TB, including risk factors that lie outside the health system. This includes tackling the proximal determinants of TB, such as housing and living conditions and access to health and social services, and the upstream determinants of globalization, labour migration and employment/working conditions that constitute the “causes of the causes”. Health insurance, unemployment and other social protection schemes should ensure that TB disease does not exacerbate poverty among those affected.
3. Health systems needs strengthening (particularly through a PHC approach), facilitating synergistic action in each of the health system functions.

Economic growth, provided that it is equitable, will inherently address some of these determinants through improved nutrition, health services and living conditions. However, economic growth is insufficient to ensure decreases in TB prevalence, as growth may also entail urbanization and other lifestyle changes that are associated with increased risk of TB (Lönnroth et al., 2009a). Specific policies to increase equity and minimize the negative health impacts of urbanization and other factors are required to reap the epidemiological benefits of economic growth and to prevent the development of pockets of deprivation. Indeed, in a recent communication on reducing health inequities in the EU, the EC identified “an equitable distribution of health as part of overall social and economic development” as a key component in reducing health inequities (EC, 2009). Likewise, participation has a key role in creating the conditions for health equity (see Box 6).

HSKN created the schema shown in Fig. 3, representing pathways for health system points of intervention on the social determinants of health.

As is implied here, features of health care can exacerbate, have no impact on or lessen health inequities. A health-equity-enhancing system will lessen health inequities through the provision of equity-promoting services and steward wider action on the social determinants of health.

In the context of TB in the European Region, achieving these two objectives will require improved implementation of existing global and regional strategies with an equity lens, and concerted action – both within and outside the health sector – on the social determinants of health. Such an approach will engender improved population health and decreased health inequities.

A TB-specific approach is not always required, since many priority public health conditions share upstream determinants. As Lönnroth et al. (2009a) state, “the further upstream the entry point for intervention, the more widespread the effect”. Indeed, a disease-specific approach “risks limiting the perspective to downstream factors in the causal chain ... rather than directing the perspective to the causes of the causes” (Whitehead & Dahlgren, 2006).

The policy implications below are grouped as per the schema presented in Fig. 3. HSKN claims that certain enabling structures must be in place to effectively undertake the actions. These may include: political commitment; appropriate legal provisions and policy frameworks; increased government expenditure on the health sector; a re-allocation of governmental resources; the elimination of user fees; prioritization of PHC; and empowerment of local-level public sector managers (Gilson et al., 2007).

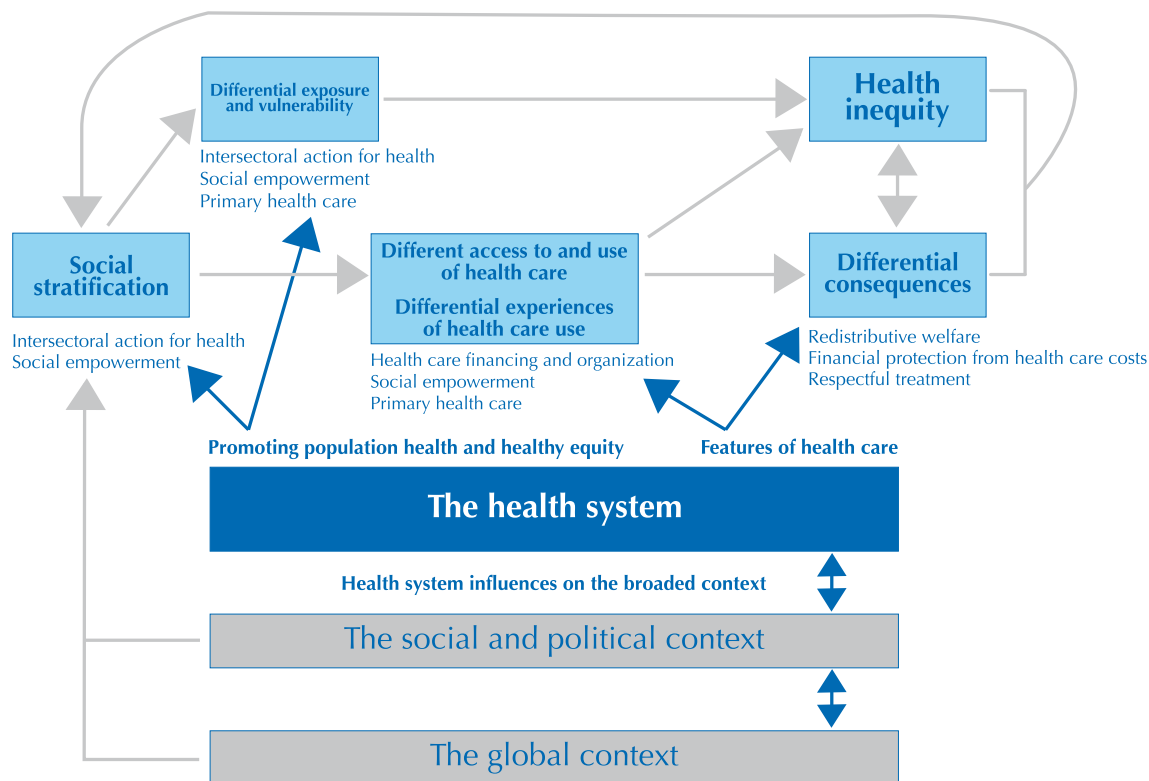
In the context of TB, political commitment has long been identified as a priority; it is one of the five pillars of the DOTS strategy (Stop TB Partnership, 2006). Ministers of Member States of the European Region, WHO and other stakeholders convened a Ministerial Forum on Tuberculosis in October 2007 to galvanize political commitment. The resulting Berlin Declaration (WHO Regional Office for Europe, 2007e) recognized many of the weaknesses noted in this briefing, including inadequate access to services recommended in the Global Plan to Stop TB, 2006–2015 (Stop TB Partnership, 2006), insufficient involvement by civil society and affected communities, shortfalls in funds, lack of TB/HIV integration and broader collaboration, and poor access to TB services among certain populations (WHO Regional Office for Europe, 2007c).

Box 6. Patient and community participation

Participation is an integral component of the Health for All PHC movement. Its instrumental and intrinsic value was reaffirmed in the work of CSDH. Following substantial review of literature and global policies, HSKN concluded that health systems oriented toward health equity involve population groups and civil society organizations in decisions that “identify, address and allocate resources to health needs” (Gilson et al., 2007), going beyond tokenistic consultation. These norms are also reflected in the final CSDH recommendations, which called on Member States to “empower all groups in society through fair representation in decision-making”, particularly in relation to health equity (CSDH, 2008). The Council of Europe (CE) has affirmed these principles in adopting a recommendation in 2000 on the development of structures for citizen and patient participation in the decision-making process affecting health care.

Norms of patient and community participation are explicitly included in frameworks governing TB control: the Stop TB Strategy (WHO, 2006a) calls for empowering communities and people with TB, and the Patients’ Charter for Tuberculosis Care (World Care Council, 2010) has been adopted as part of the International Standards for Tuberculosis Care (TBCTA, 2006). TB patient rights and responsibilities, including greater involvement of people with TB, are articulated in the Patients’ Charter for Tuberculosis Care, which was developed by TB patients.

Fig. 3. Health systems and health equity



Source: Gilson et al. (2007), reproduced with the permission of the copyright holder.

Consistent with the Lönnroth et al. (2009a) findings that political commitment must include collaborative engagement on the upstream drivers of TB, ministers at the Forum committed themselves to strengthen political will to address many of the up-, mid- and downstream risk factors, such as strengthened public health and social service systems, human resource capacity, coordination and collaboration, civil society involvement, implementation of the Stop TB Strategy (WHO, 2006a) and TB programme financing (WHO Regional Office for Europe, 2007e).

Universal social protection systems, including social health protection

Universal social protection systems use targeting only for those who fall through the cracks of universal services. As will be further discussed, equity more broadly, and health equity in particular, should be considered in all policies. Equity-sensitive social protection systems are a key component of this.

Universal social protection is promoted by CSDH (2008), the United Nations Economic and Social Council (2000), the World Health Assembly (2009), the CE (1996) and the EC (2007). Acting in response to the final report of CSDH and broader recognition of the importance of social determinants, the World Health Assembly stated in 2009 that Member States should:

... consider developing and strengthening universal comprehensive social protection policies, including health promotion, disease prevention and health care, and promoting availability of and access to goods and services essential to health and well-being.

Universal coverage implies that the entire population of a country has access to the same range of services, regardless of income level, social status and place of residence (Gilson et al., 2007). Redistribution occurs, as the rich cross-subsidize health care for the poor (Gilson et al., 2007). Universal systems are widely endorsed for their health and equity outcomes: they have been shown to produce less inequity and lower poverty rates (Whitehead & Dahlgren, 2006; Gilson et al., 2007; Stahl et al., 2006), limiting both the spread and the impact of diseases of poverty such as TB.

Universal social protection systems provide a basic set of rights and transfers – a “social protection floor” – that consists of:

- services: ensuring the availability, continuity and geographical and financial access to essential services such as water and sanitation, food and adequate nutrition, health, education, housing, life- and asset-saving information and other social services; and
- transfers: realizing access by ensuring a basic set of essential social transfers, in cash and in kind, to provide a minimum income and livelihood security for poor and vulnerable populations and to facilitate access to essential services (Social Protection Floor Workgroup, 2009).

As part of their financing and stewardship functions, health systems can provide and advocate the provision of universal social protection, including social health protection. Countries in the European Region have universal access as a stated objective, but this goal is realized to a varying degree. Working within existing frameworks, the health system can work towards the progressive realization of universality and contribute to intragovernment action for the application of the social protection floor approach. Kyrgyzstan, for example, reduced informal charging by clearly communicating formal fees and introducing sanctions for health care providers who requested additional fees (Gilson et al., 2007).

Similarly, national TB programmes and health systems more broadly can liaise with social protection systems where appropriate, sharing the particular needs of TB patients and their families. Coordination would help to ensure that inability to work, the need for physician visits and other factors relevant to TB are considered in the social protection system.

Health systems should give proportionate attention to poor and socially excluded populations, as they may require targeted actions within a universal framework. Targeting in the absence of universal systems risks creating substandard services and missing those who live just above the poverty line, but in the context of a universal system, specific programmes directed at those most in need can lead to measurable health improvements (CSDH, 2008). Targeted approaches may lessen TB exposure or the economic impact of TB treatment for those individuals experiencing multiple dimensions of poverty and social exclusion. For example, the national TB programme in Romania created a TB health promotion project targeting the excluded Roma population. Its activities aimed to improve TB-specific knowledge and to facilitate access to mainstream health services (Global Fund, 2010).

Enhanced PHC approach and health care financing and organization

This relates to enhancing availability, accessibility, acceptability and quality (AAAQ) of PHC, TB and other services. Ensuring that PHC, TB, HIV, drug and alcohol dependence, diabetes, tobacco-cessation and other

complementary services, including those relating to the underlying determinants of health, meet the AAAQ guidelines laid out by the ECOSOC in 2000 is a key aspect of health systems' service delivery and stewardship functions. Operationalization of the AAAQ guidelines maximizes population health and health equity gains.

Availability refers to the requirement for sufficient quantity of facilities, programmes, goods and services. Accessibility includes non-discriminatory availability of services, physical accessibility and economic accessibility (with due attention to equity) and information accessibility. In the context of TB control, PHC and curative services for TB should strive to enhance access to complementary health services (for co-morbidities) and to complementary social services. Programmes such as the practical approach to lung health (PAL) help to define and streamline referral pathways (WHO, 2008a).

Acceptability means that goods and services should be ethical and culturally appropriate, and *quality* means that goods and services should be "scientifically and medically appropriate and of good quality" (ECOSOC, 2000).

Acceptability is a consideration of particular importance when it comes to providing services to socially excluded populations. In recognition of the significance of acceptability, the CE Committee of Ministers has adopted two pertinent recommendations to Member States on:

1. the adaptation of health care services to the demand for health care and health care services of people in marginal situations (CE, 2001); and
2. health services in a multicultural society (Council of the European Union, 2006).

The first recommendation suggests, among other actions, that states develop human resources able "to identify, assess and treat health problems of persons living in marginal situations" (CE, 2001), while the recommendation on health services in a multicultural society counsels member states to "promote changes in the conduct of health authorities at the national and local level and of health and social professionals to adapt their response to the health needs of multicultural populations," and to "develop ... cultural competence in health care providers" (Council of the European Union, 2006). As an example, the National Health Service in the United Kingdom (Scotland) established an "inequalities-sensitive practice initiative". Aiming to provide acceptable care to all clients, the initiative focused on how services were provided, rather than just what services were provided. Teams provided respectful multidisciplinary support to clients of all types, with particular attention paid to poverty and gender (Avanté, 2009).

Intersectoral action for health

Intersectoral action for health can entail enhanced collaboration among components of the health system, such as between the national TB and tobacco programmes, and between health authorities and other sectors, including the ministry of health collaborating with the ministry addressing social protection. Spearheading such efforts constitutes a key aspect of health systems' stewardship function.

As Lönnroth et al. (2009a) suggest, strengthening of interventions outside the health sector is required. The ability of all sectors, including the health sector, to act on the social determinants of health may be challenged by lack of funds, competing priorities and lack of know-how. Health authorities can create strategies to improve their own capacity to address the social determinants of health and provide technical expertise to other sectors to integrate health in their policies. As defined by PPHC-KN, intersectoral action for health may entail the following (Blas & Sivasankara Kurup, in press).

- Health impact assessments can be made. In fact, health equity guidance should inform not only strategies in related areas such as housing and labour, but also in all sectors whose policies have the potential for both positive and detrimental impacts on health equity (EC, 2009). Referred to as "health in all policies", this principle has become one of the EU health strategy's four fundamental principles. One way to identify health inequities is via health impact assessment (HIA) in advance of implementation (Davenport, Mathers & Parry, 2006). HIAs have been implemented for over 20 years and have gained increasing acceptance in a wide number of countries over the last decade. The EU advanced operationalization of a "health in all policies" approach by calling for HIAs of Member State policies and projects (Salay & Lincoln, 2008), while the World Health Assembly urged Member States to employ health equity impact assessment tools (World Health Assembly, 2009). WHO provides technical assistance to Member States to incorporate an equity focus into HIAs, to apply HIAs to health and other sector proposals, and to strengthen capacity to translate HIA results to policy development.

- Successes in addressing the upstream determinants of health should be shared among sectors. Similarly, lessons learnt in the course of conducting HIAs or applying other health-equity assessment tools can also be shared.
- Civil-society groups can be supported to advocate enhanced action by all on the social determinants of health. Civil society can leverage data produced by the health sector or work directly on advocacy as part of the health system. For example, as part of the 2007 Ministerial Forum on TB in Europe, ministry of health and nongovernmental organization representatives from different European countries worked together to produce the Berlin Declaration (WHO Regional Office for Europe, 2007e), an advocacy tool to galvanize action on the up- and downstream determinants of TB.
- Evidence can be provided at global, national and local levels regarding the relationship between social determinants and health outcomes. Prison-related policy and practice is one particularly relevant example. While United Nations and CE standards mandate healthy conditions in prison and quality medical treatment for all prisoners diagnosed with TB (ECOSOC, 1957; CE, 1998), the finding of a direct relationship between incarceration rates and TB incidence and MDR-TB prevalence rates suggests that more radical interventions are required (Stuckler et al., 2008). Rather than focusing on living conditions and medical care in pre-trial detention and prisons, policy-makers may want to look more upstream and examine incarceration policy, including whether or not high rates of incarceration (including pre-trial detention) contribute to desired outcomes, and its role as a social determinant of health. Penal Reform International, for example, has explored alternatives to incarceration in Romania and Kazakhstan and has EU funds to examine prison conditions in the South Caucasus (Penal Reform International, 2010).

Health authorities can also spearhead intersectoral action within the health and social protection system regarding activities related to midstream risk factors and TB vulnerabilities. This might include input into housing, tobacco, HIV, nutrition, alcohol and diabetes strategies, among others (Lönroth et al., 2009a). Similarly, national TB programme staff can share information regarding the role tobacco, alcohol and diabetes play in the epidemiology of TB, strengthening the case for regulatory measures such as alcohol and tobacco taxation.

In 2007, WHO and the International Union against Tuberculosis and Lung Disease issued a monograph on TB and tobacco control, including policy options for service integration (WHO & The Union, 2007), and similar efforts related to TB and diabetes are under way. Similarly, WHO issued a European framework to decrease the burden of TB/HIV in 2003 (de Colombani et al., 2003) and a global interim policy for TB/HIV collaboration in 2004 (WHO, 2004). Consistent with this, most countries have TB/HIV strategies, although some problems in implementation persist, particularly relating to the provision of services for those who engage in criminalized behaviour (Atun et al., 2007).

WHO has also elaborated policy guidelines for collaboration among TB and HIV services for injecting and other drug users (WHO, 2008c), but integration of TB into other strategies has been less common. For example, there was no example found of a housing policy addressing TB, although this was advocated early in the last century when housing was a major engine of the spread of TB in western Europe (Abercrombie, 1919) and scientists from non-European Organisation for Economic Co-operation and Development (OECD) countries have leveraged evidence to promote a “TB in housing policies” approach (Wanyeki et al., 2006). Several local- or national-level public sector initiatives in the region have undertaken projects to make housing more health enhancing, however. Hungary, for example, has a housing and social integration programme that entails public infrastructure upgrades and rehabilitation of extremely poor housing (FRA, 2009).

Effective intersectoral action on the midstream risk factors and underlying vulnerabilities related to TB could improve TB management, reduce the prevalence of illnesses that increase vulnerability to TB and perhaps lead to the diagnosis of TB within other programmes (Lönroth et al., 2010).

Social empowerment and respectful treatment

Data showing poor health service access for migrants and injecting drug users suggest that less punitive approaches to criminalized behaviour would mitigate the negative health impacts of current policy. Substantial inequities in TB health service usage between migrants and the overall population exist, despite most national policies stipulating that undocumented migrants are entitled to free treatment for tuberculosis (Ruiz-Casares et al., 2010). As noted, for their part, injecting drug users may avoid health care services because they fear punitive action by the state (Wolfe, 2007; Lazarus et al., 2007).

In relation to social empowerment and respectful treatment, altering policies to promote health equity might include renewed engagement to publicize that services for undocumented migrants, drug users and others will respect anonymity, which was recommended by the CE in the case of undocumented migrants (CE, 2001) and integration of TB and other health services, including opiate substitution therapy (for more information, see Council of the European Union, 2003, and Atun et al., 2007). For example, methadone maintenance was successfully integrated into TB treatment (even among those co-infected with TB and HIV) in a pilot in Ukraine: 100% of patients in the pilot completed TB treatment (Mamedova & Lezhentsev, 2009). The EU, in part through the ECDC, is examining links between migration and health, including TB (ECDC & WHO Regional Office for Europe, 2009; ECDC, 2009).

Social empowerment might be achieved by working with TB patients in a way that enhances, rather than undermines, autonomy. Using the Patients' Charter for Tuberculosis Care (World Care Council, 2010) as a basis for initiating treatment might be one method.

Priorities for future research

The PPHC–KN identified social determinants causal pathways for 13 different priority conditions, including TB. Many of the upstream social determinants are common, so new research and knowledge for one condition will benefit action for other conditions. Indeed, despite evidence of the links between social determinants and health conditions, there is a further need for monitoring specific determinants and their health impacts, particularly in different contexts. Such monitoring should extend to policy and programmatic interventions on the proximate and upstream determinants. Effectively leveraging these data will require new approaches to developing evidence-based programming. Rather than relying primarily on health condition-specific indicators, decision-makers should integrate data on social determinants.

Health policy analysts have found that, just as vertical health systems for TB have tended to develop, so too are research models often vertical (or at least parallel) (Coker, Atun & McKee, 2004). The priorities below attempt to remedy this tendency by looking across sectors as well as upstream. Future research specific to TB, underlying vulnerabilities and inequalities more broadly will inform evidence-based action on determinants at all levels. TB-related priorities are highlighted here. Broader health equity research priorities are outlined in the EC and CE communications and recommendations cited throughout the briefing.

- Determinants at national and subnational level need mapping. While the case for a social determinants approach to PHC is clear, the role played by various determinants varies in different contexts. For this reason, countries should map the social determinants of their health priorities. Such mapping should consider up-, mid- and downstream risk factors as well as underlying vulnerability and differential consequences. In the case of TB, this might include ascertaining the relative risk for TB given the presence of various risk factors, such as malnutrition and smoking. This information would enable improved prioritization for intersectoral cooperation (Lönnroth et al., 2009a).
- The impact of TB determinants and risk factors on treatment outcomes needs study. In tandem with the previous point, national programmes should assess the likelihood of treatment completion given the presence of various up-, mid- and downstream risk factors. This will complete understanding of the role social determinants play in TB disease and treatment completion.
- Interventions that address the social determinants of TB, particularly upstream determinants, can be documented. As noted, there are many examples of programmes that enhance patient ability to adhere to treatment. There are fewer interventions where TB incidence or prevalence is explicitly tied to an upstream intervention. Documenting such examples would enhance the policy and practice evidence base.
- Barriers to PHC need study. While surveys have been conducted among current TB patients, few have been able to adequately capture those who present for TB diagnosis very late or those who do not even access PHC. The most likely affected groups include those who fear contact with the state, those who fail to access health care because of income poverty and those who have poor health literacy and do not feel empowered to take action on their health. Better assessing the causes of low demand for health care will provide evidence that can be used to address EC recommendations to reduce health inequalities in the EU, as well as to realize WHO objectives of health for all.
- Challenges in the patient pathway within the health system need examination. In some countries, PHC serves as the gatekeeper for health care, whereas in other countries this is not the case. Regardless, the patient pathway may at times be torturous or complicated in all countries. Systems-level analysis of patient trajectories, particularly those of patients suffering from multiple morbidities, can complement quantitative analysis of health system functioning.
- Several studies assess access to health care among undocumented migrants in the EU, but this literature is far from complete. Data from eastern Europe and central Asia are even more incomplete. Given the over-representation of migrants among those who have TB, better assessing living conditions and health care access is germane to developing pragmatic solutions called for in the World Health Assembly resolution on migrant health (2008) and the CE recommendation on the adaptation of health care services to the demand for health care and health care services of people in marginal situations.

- National TB programmes, particularly in eastern Europe, are vertical. These programmes have been criticized for not providing a robust continuum of services, in part because the TB programme operates somewhat independently from other health service provision. Policy-makers may want to assess the cost and population health benefits of different degrees of verticalization. Links with PHC might be a particular focus.
- Official health care fees and incidental costs, such as transport, shape patient capacity to complete treatment. Analysing the true costs of treatment and the mitigating role played by social transfers will further elucidate the efficacy of social protection in addressing the differential consequences of TB disease, as well as ongoing priorities.
- Some countries disaggregate TB data by incarceration history, migration history, sex and so on. Doing this in all countries and adding metrics relating to socioeconomic and other factors would better illustrate the causal pathways leading to inequities in TB disease (Lönnroth et al., 2009a). Socioeconomic disaggregation should show the wealth gradient, rather than categorizing by quintile (Blas & Sivasankara Kurup, in press). Such data should be paired with narrative evidence, as not all associations between social determinants and epidemiological data can easily be accessed via statistical analysis (Blas & Sivasankara Kurup, in press).
- The role of stigma, SEP and other identities in shaping experience with the health care system deserves study. FRA recently released an extensive survey regarding experiences of discrimination in the EU, including in the health care system. Assessing other factors among the population more broadly would help to identify what factors limit demand for health care and compromise health care service quality.
- Despite its being included in most regional frameworks, the Patients' Charter for Tuberculosis Care (World Care Council, 2010) is infrequently used; when it is used, it is not always documented. Documenting best practices, examples and lessons learnt would facilitate mainstreaming of the Charter into national TB programme activities.
- Ecological studies could assess the association between TB prevalence and various policy choices. A recent study (Stuckler et al., 2008) examined TB prevalence and average incarceration rates. Similar ecological studies could look at strength of the social protection system, treatment of injecting drug users, improved multisectoral migrant integration strategies (including migrant access to health care) and other factors to better demonstrate the health impacts of such policies.

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Notes



The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.



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**World Health Organization
Regional Office for Europe**
Scherfigsvej 8, DK-2100 Copenhagen Ø, Denmark
Tel.: +45 39 17 17 17
Fax: +45 39 17 18 18
E-mail: postmaster@euro.who.int
Web site: www.euro.who.int

