KEY POPULATIONS BRIEF

PRISONERS

Stop TB Partnership

Over the past several decades, the weakening of criminal justice systems and reliance on ineffective, overly punitive policies have led to the deterioration of prisons globally. This has caused overcrowding and facilitated the spread of infectious diseases such as TB and multidrug-resistant TB (MDR-TB). Prisons are intrinsically linked to communities; thus, the TB and MDR-TB epidemics in prisons have impacted health outcomes in countries where excessive incarceration is prevalent. The inability of governments to address the needs of large prison populations, the lack of financial support and training for prison health staff, and various comorbidities presenting among prisoners with TB make it difficult to deliver effective TB treatment in prisons, cause delays in diagnosis, facilitate rapid spread of infection, and trigger frequent treatment interruptions. The issue of TB and MDR-TB in prisons cannot be addressed without focusing on alternatives to incarceration, promoting the rights of prisoners and prison staff, providing adequate support to health infrastructures within prisons, and working alongside communities and prisoners to provide for more effective rights-based TB treatment and care-delivery models.

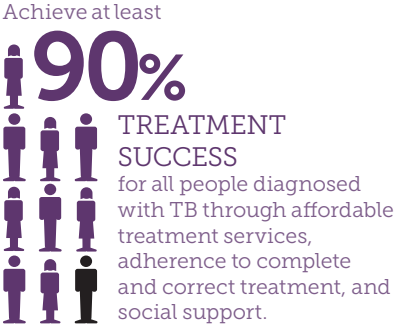
Global Plan to End TB and key populations

The Global Plan to End TB outlines the following targets to be achieved by 2020, or 2025 at the latest. The Plan refers to people who are vulnerable, underserved or at risk as TB "key populations" and provides models for investment packages that will allow different countries to achieve the 90-(90)-90 targets. The Plan also suggests that all countries:

Reach at least

As a part of this approach, reach at least

Achieve at least



- Identify their key populations at national and subnational levels according to estimates of the risks faced, population size, particular barriers to accessing TB care and gender-related challenges;
- Set an operational target of reaching at least 90% of people in key populations through improved access to services, systematic screening where required and new case-finding methods, and providing all people in need with effective and affordable treatment;
- Report on progress with respect to TB using data that are disaggregated by key population;
- Ensure the active participation of key populations in the delivery of services and the provision of TB care in safe environments.

This Guide utilizes the above recommendations to discuss structural, operational, clinical and legal solutions for addressing TB among prisoners, promotes the involvement of prisoners with TB, and calls on governments to fulfill their obligations and reconsider the structure of their criminal justice systems.

What's in this guide?

EPIDEMIOLOGICAL PROFILE

The number of prisoners with TB is estimated to be 4500 of every 100 000, while other comorbidities pose compounding challenges to timely and effective TB care delivery. This section discusses the dire situation with TB and MDR-TB globally.

IMPLICATIONS FOR LAWS, POLICY AND HUMAN RIGHTS

Despite calls by UN agencies to consider alternatives to incarceration, global prison populations continue to increase. Countries also demonstrate disregard for international commitments to prisoner health. Combined with retributionist policies in some settings, such disregard contributes to growing TB and MDR-TB epidemics among prisoners.

STRUCTURAL BARRIERS TO TREATMENT

Delays in diagnosis and interruptions in treatment are characteristic experiences for prisoners with TB and are largely caused by poor infrastructures, lack of funding and lack of proper TB management within prisons.

SOCIOCULTURAL BARRIERS TO TREATMENT

Prison populations are disproportionately made up of those from socially and economically marginalized groups. Prison culture can exacerbate these vulnerabilities, influencing health behaviours and access to care in prison.

TAKING ACTION

Prison and criminal justice reform is fundamental to making progress on the multiple public health issues plaguing global prisons. Collaboration with prison staff, increased resources for health care in prisons and holding governments responsible for their international commitments to prisoner health are also important. Meaningful involvement of prisoners with TB in the design of various strategies is critical.

RECOMMENDATIONS

Recommendations for improving the situation with TB in prisons focus on advocacy for alternatives to incarceration, the documentation of abuses, an increase in the capacities of prison staff, and collaborative activities to improve access to health services during and after incarceration.

Epidemiological profile

Globally, more than 10.2 million people are held in penal institutions at any one time, with four to six times this number passing through the world's prisons every year *(1,2)*. Overcrowding is an issue in the majority of the world's prisons. Out of 204 countries surveyed by the Institute for Criminal Policy Research, 143 reported prison occupation that exceeded or neared (>90%) capacity; in 21 countries, prison occupation was more than double prison capacity *(3)*. Overcrowding greatly contributes to the spread of TB, with the risk of TB disease in prison on average 23 times higher than in the general population; similarly, the chance of prisoners having a latent TB infection is 26 times higher than for people in the general population *(4)*. HIV – the most important risk factor for developing TB disease in individuals with latent TB infection – is a major health problem for prisoners around the world *(1,5)*. In a study of 75 countries reporting HIV prevalence in prisons, 20 countries had HIV prevalence that exceeded 10% *(6)*. High rates of HIV, combined with the poor ventilation, sanitation and nutrition associated with overcrowding facilitate the rapid spread of TB among prisoners. The number of prisoners with TB is estimated to be 4500 of every 100 000, with WHO considering 250 cases per 100 000 to be an epidemic *(7)*. In some prisons, rates of TB have been found to be 1000 times greater than in the general population *(1)*. In addition, high rates of MDR-TB have been noted among prisoners *(8)*, with up to 50% of all TB cases in prison demonstrating drug resistance in some countries *(9,10)*. A systematic review of evidence found that, in five out of six studies conducted in Russian prisons, MDR-TB was identified in over 40% of cases; 52.3% of prisoners with TB demonstrated MDR-TB in Azerbaijan, and 19.5% in Thailand *(1)*.

Table 1 highlights the parallels between overcrowding and the severity of TB prevalence in some locales where data are available.

TABLE 1. **TB CASES AVERTED BY GLOBAL PLAN COUNTRY SETTINGS**

Country	Prison Occupancy*	TB Prevalence Rate in Prisons	TB Prevalence Rate Compared to General Population at the Time of Study (fold higher)**
Russian Federation	94.2%	5.9%	200
Brazil	153.9%	2.6¬–64.5%	42–70
Mexico	125.7%	n/a	1000
Bangladesh	201%	13.8%	20
Cameroon	137.7%	3.5%	35
Zambia	229.1%	4%	10

**Data from the Institute for Criminal Policy Research (3)*
*** Data from a review of studies by Biadglegne, Rodloff, and Sack (1)*

Sex workers, people who are prosecuted for their sexual orientation or gender identity, people who use drugs, people who are homeless, or people who are otherwise marginalized and poor may carry the disproportionate burden of other infectious diseases such as HIV and hepatitis. At the same time, these populations are at the highest risk of incarceration due to existing punitive and retributionist policies *(11–13)*. They are also more likely to be incarcerated repeatedly and to spend time in pretrial detention centres, thereby increasing their risk of exposure to TB. People charged with or convicted of offences related to drugs constitute a large proportion of those imprisoned or awaiting trial in many countries (see Table 2). Similarly, several reports, including one by the UN Special Rapporteur on Extreme Poverty and Human Rights, have underlined that the majority of people who are imprisoned globally are those who are extremely poor, have lacked access to opportunities throughout the course of their lives, and are the most marginalized *(14–16)*.

TABLE 2. **PRISONERS WHOSE MAIN OFFENCE IS DRUG-RELATED OR WHO IDENTIFY AS PEOPLE WHO USE DRUGS*SETTINGS**

Country	% of prison population whose main offence is a drug offence	% of prison population who identify as people who use drugs
Russian Federation	–	14.8
Latvia	14.3	17.7
Bolivia	45	–
Argentina	33	64.4
Thailand	65	–

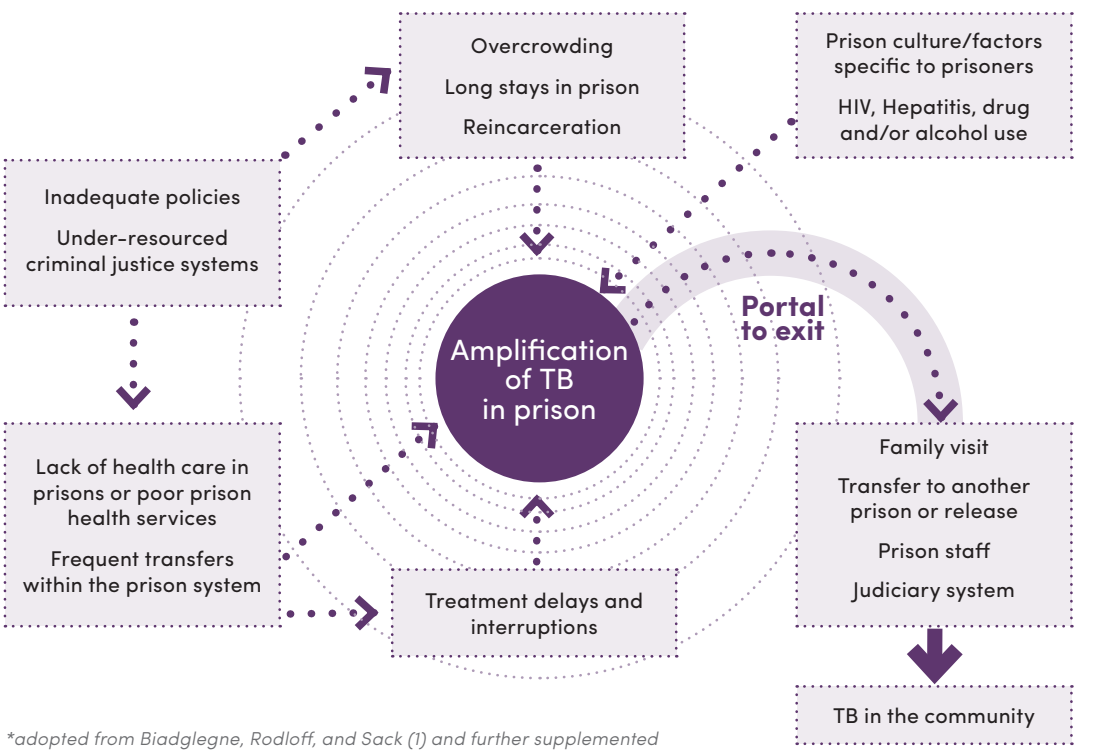
** Data from Global Prison Trends report (7)*

The presence of other comorbidities and vulnerabilities among prisoners and the extremely poor conditions in prisons caused by overcrowding in the majority of the world's locales mean that incarcerated individuals are at very high risk for TB transmission. TB in prisons is also a human rights and public health concern. Despite multiple existing international obligations and agreements, the right of prisoners to the "highest attainable standard of physical and mental health" *(17–20)* is frequently not protected. Moreover, there are limited efforts to connect those leaving prisons to health services in the community. People with TB who are released from prisons without completing treatment, or those who are at high risk for TB face competing priorities; housing, employment and other essential services may be prioritized over access to TB facilities. For example, in Eastern European countries, 60–70% of prisoners do not refer to TB facilities after release. Prisons, prisoners and prison staff are intrinsically linked to communities, and the health of prisoners has a direct impact on the health of the general population. There is evidence that mass incarceration in the countries of Eastern Europe and Central Asia has been associated with an increase in TB prevalence in the general population *(21)*. Studies have shown that 8.5% of TB infections can be attributed to transmission from prisons in high-income coun-

tries and 6.3% in middle- and low-income countries *(22)*. TB and MDR-TB in prisons present a particular challenge to the countries of the former Soviet Union, where prison populations are some of the largest in the world *(2,4)*. Recent evidence has been emerging from countries in sub-Saharan Africa, where, in addition to being held in custody in severely overcrowded conditions that facilitate the rapid spread of TB, prisoners are often malnourished and may also present with HIV *(1,10,23)*. Whereas the prisons in Eastern Europe and Central Asia have been better researched, data on TB in prisons in other regions are limited or absent. There is a clear imperative to generate more high-quality empirical data with which to inform both public health and rights-based strategies to address this issue.

The high prevalence and incidence of TB and MDR-TB in prisons results from a multitude of factors, such as overcrowding, inadequate health infrastructures, treatment delays, and frequent treatment interruptions due to the mobility of prison populations and the lack of follow-up upon release *(1,8)*. These factors in turn are the result of other accompanying factors and conditions, as discussed in Figure 1 and throughout this Guide.

FIGURE 1. **FACTORS THAT FUEL TB EPIDEMICS IN PRISONS***



**adopted from Biadglegne, Rodloff, and Sack (1) and further supplemented*

Implications for laws, policy and human rights

Overuse of imprisonment

World incarceration rates have been experiencing consistent growth for the last decade *(2)*. However, this increase has not been reflected in serious crime rates, which have been declining *(24)*. Experts attribute the population growth in prisons to the retributionist philosophies that guide many policy makers. Such policies are based on the demand for harsher punishments in response to violence *(24)*, but evidence is emerging that reliance on incarceration does little to reduce or prevent violent crime *(7)*. Policies focused on the prosecution and imprisonment of low-grade offenders for drug-related crimes, and the criminalization of individuals based on their sexual orientation and gender identity have been contested by multiple global stakeholders *(7,25–27)*. Still these policies remain, along with others that target those who are already marginalized. In addition, under-resourced and poorly regulated criminal justice systems contribute to both delays in sentencing and oversentencing of nonviolent offenders *(7)*. About one third of the world's 10.2 million prison population is in pre-trial detention, with some awaiting trial for up to four years *(7,15)*. The financial and societal costs associated with imprisonment are tremendous, and governments are increasingly struggling with prison overcrowding, budget overburdening, declining prisoner health, and an imbalance in the prisoner-to-staff ratio.

There are numerous additional negative social, economic and cultural impacts of mass incarceration, and civil society organizations and UN bodies, including the United Nations Agency on Drugs and Crime (UNODC) *(28)* and the United Nations Office of the High Commissioner for Human Rights (OHCHR) *(29)*, have called for countries to seek alternatives to imprisonment. Considering the costs that prisons impose on societies, an economic argument could be central to pursuing these alternatives, while paying special attention to the current burden of TB and MDR-TB on prisoners, the health of the public at large, and national budgets.

Prisoner health: an appalling status quo

In 1993, Human Rights Watch's Global Report on Prisons *(30)* noted that the majority of the world's prisoners were "confined in conditions of filth and corruption, without adequate food or medical care, with little or nothing to do, and in circumstances in which violence from other inmates, their keepers or both is a constant threat." A decade later, the 2013 U.S. Department of State Report on International Prison Conditions *(31)* stated: "A majority of the world's prison systems do not function at the level of the United Nations' Standard Minimum Rules for the Treatment of Prisoners. In some countries, relevant international obligations and standards are deliberately disregarded." The report highlighted universal issues threatening the health and lives of prison populations: prison overcrowding, lack of sanitation and/or medical facilities, and denial of health care to prisoners *(31)*. The re-emergence of TB and the rapid spread of MDR-TB in prisons across the world recently led several human rights bodies to express their grave concern over the state of the world's prisons and to question whether the health of prisoners meets international human rights standards *(32)*. The fact that these standards are not observed is one of the key drivers of TB epidemics within prisons and communities globally.

In addition to TB and HIV, prisoners are plagued by a variety of ailments, including viral hepatitis and mental health conditions. Studies have estimated that globally hepatitis C prevalence among prisoners is 26%, with prevalence highest

among prisoners in Central Asia and Australasia *(33)*. Disparities in the rates of mental illness among prisoners have also been noted, with rates of suicide up to 10 times higher among prisoners than in the general population *(11)*. This critical situation is again brought on by the poor policies described above and the resulting lack of resources to maintain access to adequate health services in prisons. The right to health of prisoners is protected under a range of international obligations, most notably by the International Covenant on Civil and Political Rights *(34)*, the International Covenant on Economic, Social, and Cultural Rights *(17)*, and the UN General Assembly's Resolution on the Basic Principles of the Treatment of Prisoners *(20)* and Standard Minimum Rules for the Treatment of Prisoners *(19)*. A report from the UN Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health has also underlined the obligations of countries to prisoner health *(35)*. Unless governments take these obligations seriously, it will be extremely difficult to halt the TB epidemic in places of detention.

In order to help governments and civil society stakeholders devise policies for providing health care for prisoners, WHO and UNODC have developed the following principles of good governance for prison health (from "Good governance for prison health in the 21st century. A policy brief on the organization of prison health", 2013) *(36)*:

- Prisoners have the same rights to health and wellbeing as anyone else.
- Prisoners mostly come from socially disadvantaged segments of the community and carry a higher burden of communicable and noncommunicable diseases than the general population.
- Prisons are settings with high risks of disease. Because there is a constant interchange between their inhabitants and communities outside, they present a complex and difficult challenge for public health, especially with regard to tackling communicable diseases such as HIV or TB.
- States have a special, sovereign duty of care for prisoners. They are accountable for all avoidable health impairments to prisoners caused by inadequate health care measures or inadequate prison conditions with respect to hygiene, catering, space, heating, lighting, ventilation, physical activity and social contacts.
- Prison health services should be at least of equivalent professional, ethical and technical standards to those applying to public health services in the community.
- Prison health services should be provided exclusively to care for prisoners and must never be involved in the punishment of prisoners.
- Prison health services should be fully independent of prison administrations and yet liaise effectively with them.
- Prison health services should be integrated into national health policies and systems, including in regard to the training and professional development of health care staff.

Adhering to these principles, as well as eliminating some of the punitive policies that target low-level offenders, can help to address some of the structural and sociocultural barriers described below.

Structural barriers to diagnosis and treatment

Lack of resources and poor infrastructures

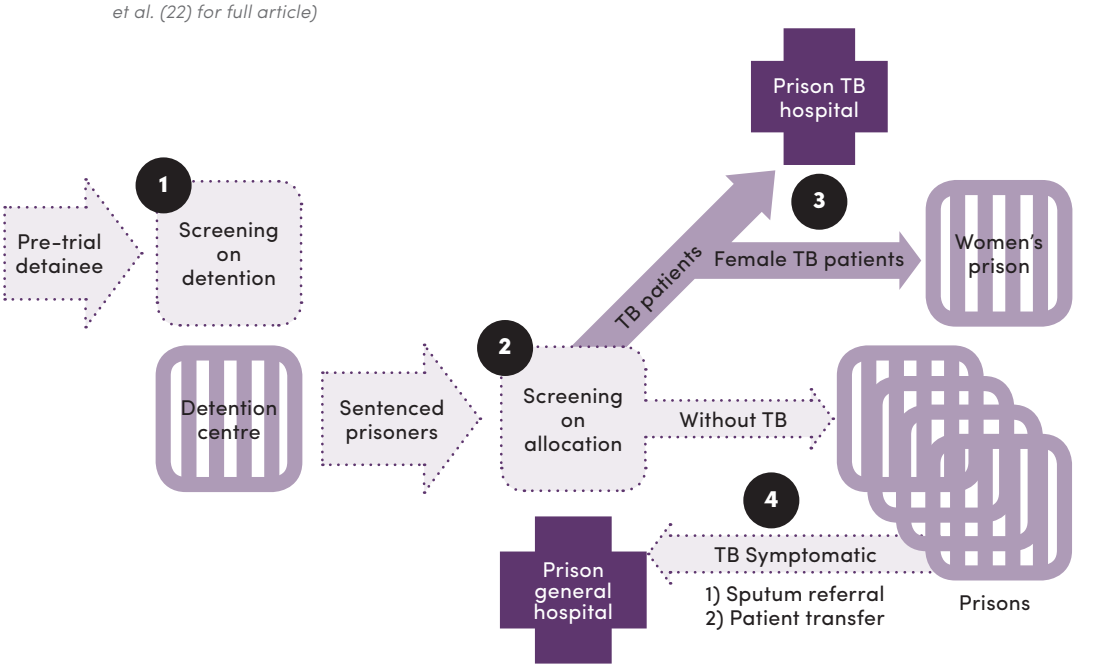
As detailed above, prisons are notoriously overcrowded and lack adequate health resources *(37)*. This issue is universal and found in high-, middle- and low-income countries. In middle- and low-income countries, this lack of resources, however, might be so drastic that even prisoners' basic needs cannot be met, which has a serious impact on individuals' health outcomes *(37)*. Since TB is spread through the air, some elementary measures for TB control inside prisons include a decent level of air circulation, which could be achieved through improved ventilation *(11)*. However, even such measures as opening windows and installing exhaust fans might be difficult to implement in low-resource settings, and the installation of ultraviolet germicidal irradiation devices could be completely out of reach. Reports from some prisons have depicted severely overcrowded facilities where prisoners are locked up in cells for 23 hours per day; this increases the opportunities for TB transmission and eliminates the possibility of air circulation – all due to a lack of staff and resources to maintain such a large prison population *(38)*. The lack of resources also results in poor health care infrastructures within prisons, lack of training and preparedness among prison health workers to deal with health crises such as TB and MDR-TB, higher prisoner-to-staff ratios leading to poor cohesion of prison populations, and many other issues that may prevent effective case-finding and patient-centric TB treatment delivery *(11,39,40)*.

Delayed diagnosis and logistics at intake and housing

Addressing prison TB among other things requires aggressive case-finding. Case-finding requires an increased number and improved capacity of prison medical staff, and committed efforts by prison authorities to prevent the spread of TB in prisons. WHO recommends two approaches to case-finding in prisons: active and passive *(11)*. Active case-finding should occur both at initial prisoner intake and throughout the incarceration period, during which time prison populations should regularly undergo TB screening. At initial prisoner intake, a medical examination should be conducted that is respectful of the individual being incarcerated and includes a TB screen using questionnaires, chest radiography, tuberculin skin testing (TST) and interferon gamma release assay (IGRA), or a combination of these methods *(11,41)*. The use of portable and affordable radiography has proven effective for rapid TB detection and TB prevention in other resource-limited environments *(42)*. In low-resource settings with high HIV prevalence, researchers have also found that low body mass index, HIV infection, and chest pain are reliable predictors of TB in prison populations *(43)*. These and other creative methods need to be tested for settings where WHO recommendations are not easily implemented. In addition, new technologies must be urgently developed to improve and simplify diagnostics.

WHO and other agencies *(11,44)* also recommend that, at intake, prisoners with suspected TB be separated from the general prison population and especially from those prisoners who are living with HIV. This temporary separation protects both prisoners with possible TB, who may be initiated on treatment, and the general prison population from contracting TB from their peers. Such a strategy enables prison authorities to fulfill their obligation to protect the health of all prisoners *(11)*. A recent study in Mongolia demonstrated that the initial screening and separation of prisoners with TB had a significant impact on the trajectory of TB in prison; over a nine-year period, the country cut TB notification rates in prison by more than half through a process of screening and isolation, and the redirection of prisoners with TB to prison-based hospitals *(45)* (see also Figure 2). However, it should be noted that such a model requires resources that are not always available.

FIGURE 1. **MAP OF SCREENING AND REDIRECTING PRISONERS WITH TB ACROSS MONGOLIA'S PRISON SYSTEM** *(see Yanjindulam P, Oyuntsetseg P, Sarantsetseg B, Ganzaya S, Amgalan B, Narantuya J, et al. (22) for full article)*



This separation should of course not equal prolonged isolation; prisoners undergoing evaluation for TB should not be spending time in solitary confinement *(39)*, nor should they suffer undue discrimination on the grounds of their health status. However, existing constraints often make it difficult to implement this simple step. Finding extra space is challenging in overcrowded prison environments, and correctional facilities segregate prisoners by the nature of their crimes, not by public health directives. Keeping people with TB separate while incarcerated requires a strong commitment from prison and prison health authorities. The initial examination and discussion with prisoners at intake can also help to establish whether they have been obtaining TB treatment in the community and therefore should continue with their regimen. Thus, stronger linkages between prison and community health facilities are required *(40)*. Not following these simple steps can often result in lengthy delays in TB diagnosis, which can sometimes lead to massive outbreaks in the general prison population *(46)*.

Passive case-finding should occur through prisoner self-referral to prison health units and the testing of all prisoners who present at prison health centres with concerns that could indicate a TB diagnosis *(11)*. This methodology is challenging, however, because it relies on prisoners to self-report symptoms. While prisoners might be eager to report their health issues, their ability to do so sometimes depends on their standing within the prison hierarchy. The seriousness with which their concerns are taken can also depend on the professionalism and attitudes of prison health staff *(11)*. It is clear that neither approach can succeed without the involvement of both prison staff and prisoners themselves.

Treatment interruptions

As mentioned, populations that are susceptible to TB might also be at higher risk of imprisonment. At the time of arrest and detention, some individuals who are about to be incarcerated might have already been receiving treatment for TB in the community. Similarly, while receiving treatment in prison, a range of punitive and/or logistical measures, such as solitary confinement, transfers between prisons and jails, and other practices might interfere with treatment *(1,11,22,39)*. If the imprisoned individual with TB is also using drugs, it is key to provide substitution treatment in order to ensure adherence. However, such treatment is often unavailable in prisons *(13)*. Interruptions and nonadherence are also sometimes the result of prison culture (see sociocultural factors below). Nevertheless, prison logistics, negligence, and lack of commitment to improve conditions and care by prison authorities and staff take precedence over these other factors *(1)*. When people with TB are released from prisons, their treatment regimen might also be interrupted and might even be unavailable in the communities where they live *(39)*. Former prisoners might not want to pursue treatment for a variety of reasons; however, connecting them to health authorities and supportive civil society organizations in the community is extremely important for facilitating treatment continuation and success.

Sociocultural barriers to treatment

Other comorbidities

People with TB in prisons often present with a variety of other comorbidities, including viral hepatitis and HIV *(4)*. This presents challenges for both prison health staff and prisoners with TB. Prison health authorities need to make decisions with regard to triaging treatment, while prisoners with TB and other comorbidities are faced with enduring side effects and interactions of various medications *(39)*. These challenges cannot be overlooked, and adequate support must be provided for prisoners with TB who also present with other conditions.

Prison culture and hierarchy

While few research reports have addressed these issues, it is evident that the hard culture of many prisons drives prisoners to engage in certain behaviours that might interfere with even the most efficient of TB programmes. Considering that TB interventions are already fragile in the majority of prisons, prison culture and hierarchy might seriously interfere with these activities. The existence of informal markets in prisons has been well documented. TB medications might become part of this market when prisoners on TB treatment start to feel sufficiently better from receiving medications, and/or circumstances or their standing in the prison hierarchy force them into selling or trading their medications *(22,39)*. Informal and anecdotal reports have also highlighted the functioning of prison hierarchies wherein "senior" prisoners might act as gatekeepers for access to medical and other services and might use this access to coerce those who are considered of lower standing *(39,47)*. In some prisons where TB programmes are known to be better funded, and prisoners with TB receive additional nutrition benefits or are relocated to in-prison TB hospitals, some prisoners may wish to fake TB symptoms and swap sputum to ensure diagnosis in order to transfer to these seemingly more appealing locations *(39,40)*. These phenomena need to be taken into account, and agencies need to promote the close observation of medication intake and education among prisoners on the dangers of unfinished treatment and of developing resistance if erroneously or repeatedly treated.

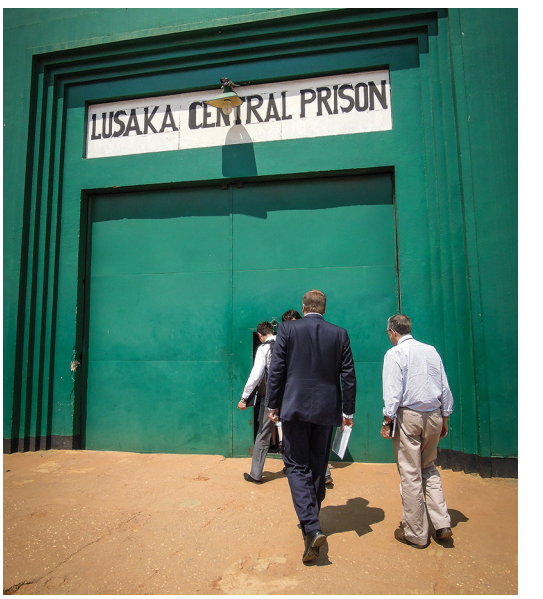
Women in prison

Up to 6.5% of the world's prisoners are women, and this figure represents a five-fold increase in female prison populations over the last 15 years *(7)*. The highest levels of imprisonment of women have been noted in Eastern Europe and Central Asia, while levels are above average in Latin America and south-eastern and eastern Asia *(7)*. According to the UN Division for the Advancement of Women, racial minorities including indigenous women "represent the fastest growing sector of the prison population" *(48)*. Research has shown that female prisoners have experienced multiple forms of oppression, abuse, poverty and marginalization *(7)*. Moreover, the majority of female prisoners have committed nonviolent crimes motivated by improving their financial situation *(7)*. It has also been documented that the overwhelming majority of those women who have committed violent crimes have themselves been victims of extreme violence or have committed the crimes in response to systematic abuse and domestic violence *(49,50)*. A high proportion of women across all regions, and especially in the region of Eastern Europe and Central Asia, are incarcerated for nonviolent drug-related offences *(7)*. Considering that the majority of women in prison are mothers *(48)* and sole providers, the overincarceration of women poses an additional societal burden and leads to broken homes. Data on TB among female prisoners are lacking. However, a study in Brazil found that time in imprisonment increased women's risk of TB *(51)*. There is also evidence that the health of female prisoners is often ignored by weak prison infrastructures *(52)*. For example, female prisoners in Zambia reported lower levels of TB testing than their male counterparts and a general disregard for their health needs *(53,54)*. These experiences are thought to be common for female prisoners globally *(7)*. Alternatives to incarceration and gender-specific services are underlined in the UN Rules for the Treatment of Women Prisoners and Non-Custodial Measures for Women Offenders (the Bangkok Rules) *(55)*. These rules should be adhered to when considering policies targeting female offenders and devising services for female prisoners.

Taking action

Advocating for prison reform and improving conditions in prisons

It is clear that, without overall improvements in prison conditions globally and without revisions to the strict penal codes that put non-violent offenders in prison, the issue of TB in places of detention will persist. UNODC recommends alternatives to imprisonment that begin with the review of laws and sentencing policies and result in the establishment of parole and community supervision schemes that produce significant savings and encourage the better integration of people destined for incarceration into communities *(28)*. These schemes could also significantly aid in the diagnosis and treatment of people with TB, who would no longer be crammed into overcrowded spaces with no ventilation, but rather would receive treatment in community health systems.



Ensuring continuity of treatment

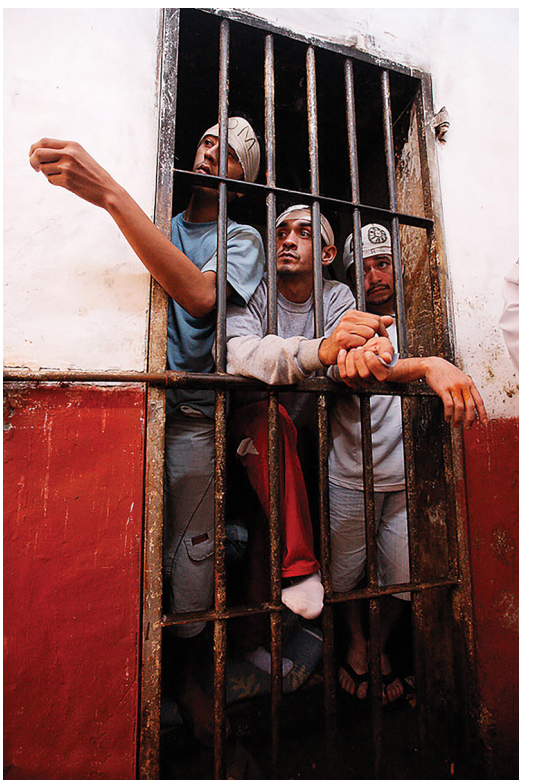
Ensuring continuity of treatment is key to the success of prison TB prevention and control programmes. Thus, it is essential to focus on strengthening connections within the prison system and creating medical records that can move with the individual with TB from one location to another. Furthermore, connecting released prisoners to community organizations is essential to ensuring treatment adherence and completion. Community organizations that work with former prisoners and provide treatment support can also provide such essential services as temporary shelter and nutrition *(56)*. Community organizations might also engage peer workers who are themselves people who have experienced incarceration and might better understand the needs of newly released prisoners *(40,56,57)*.

Taking legal action

To raise awareness of the issues of TB in prison, several former prisoners supported by human rights groups have filed cases through country and international human rights mechanisms. A court victory of a former prisoner over prison authorities in South Africa has brought to light the terrifying conditions that facilitated his acquisition of TB while incarcerated *(58,59)*. Russia's decrepit prison conditions and inhumane treatment of prisoners, which includes rampant TB infection, have been exposed by several positive decisions made by the European Court for Human Rights *(60)*. While not always representing a direct gain for the person affected by TB, these cases help to put pressure on governments and prison systems to take action.

Including and empowering prisoners

As with other communities, including and empowering prisoners to know their rights and to engage in TB prevention and treatment is essential to prison TB control. While there are few documented examples of successful programmes involving prisoners, at least two prison systems have reported engaging "incarcerated health workers" as peers who are trained much like community health workers to supervise treatment in prisons *(40,61,62)*. Prisoner education and the involvement of prisoners in devising health information campaigns related to TB have also been noted as effective and productive methodologies *(39,63)*. Implementers, however, warn that educational and empowerment programming should leave no misunderstanding as to the dangers of interrupting treatment, faking TB illness or engaging in other strategies that prisoners might consider due to the circumstances of their environment *(39)*. Some prison systems have allowed civil society organizations to work with prisoners in prisons. Such models may be even more effective, as they function through peer networks and thus can foster trust and better adherence among prisoners.



Training and fostering collaboration with prison staff

Providing education and training for prison staff, as well as creating a staff "buy-in" on collaboration with prisoners in the implementation TB screening activities and prisoner engagement in health service delivery are keys to the success of TB programming in prisons *(11,39,64)*. In addition, training and other educational activities for prison staff may serve as incentive/encouragement to make difficult circumstances more manageable and provide linkages to other professionals working in prison settings for support.

Recommendations

While these recommendations provide an outline for action for a range of key stakeholders, others, including UN Agencies and local and global health worker collectives, should take note and assess their potential for use in improving TB prevention, treatment and care for prisoners. In addition, public and private partners should take note of recommendations that concern the development of new diagnostics and other technologies that can accelerate and facilitate the detection and treatment of TB in prisons.

Civil Society	Organizations of Prisoners and Former Prisoners with TB	Governments	Donors
Advocate for alternatives to incarceration, especially for nonviolent offenders who might be vulnerable to TB; promote access to policy makers for prisoners and former prisoners;	Document the impacts of incarceration on the lives of prisoners with TB; access policy makers to tell prisoner stories;	Reduce the economic and public health burden of TB on society; consider criminal justice reform and alternatives to incarceration for nonviolent offenders;	Fund programming, policy review and reform targeted at alternatives to incarceration;
Foster relationships between civil society organizations, prisoner collectives/ organizations and prison health services;	Advocate for access to health services for all prisoners and for better interventions connecting prison health systems to health services in the community;	Ensure that health facilities are fully functional and well-staffed in all prisons; develop cost–effective models for prison health service delivery by rotating staff and using other creative approaches; facilitate collaboration between prison and health authorities with the involvement of civil society;	Promote cost–effective models for increasing access to health care for prisoners; provide initial funding to jump-start prison health services and TB programming;
Pursue strategic litigation to hold governments responsible for violations against prisoners that impact prisoner health;	Document violations of prisoner rights and hold governments accountable to international obligations; work with human rights groups and legal collectives to bring cases against prison systems in cases of neglect;	Adhere to international obligations on prisoner health;	Support documentation of violations in prisons and work alongside civil society to pressure governments to adhere to international obligations; support programmes that are in adherence with international guidelines;

Civil Society	Organizations of Prisoners and Former Prisoners with TB	Governments	Donors
Advocate for adequate financing for prison health care; use resource shortages to advocate for alternatives to imprisonment;	Advocate for system-wide improvements of medical and TB care in prison;	Ensure that there are adequate resources dedicated to TB treatment in prisons, that staff are adequately trained, resourced and supported, and that there are systems in place for testing prisoners and for providing continuity of treatment;	Help governments devise sustainable plans for providing TB treatment in prisons, and promote models of diagnosis and treatment that maintain continuity and are effective;
Advocate for access of civil society organizations to work with prisoners;	Work at the community level to create safety nets for people being released from prison, who might need supportive treatment; advocate for access to prisons, where peer support for prisoners with TB is essential;	Work with civil society to ensure their involvement in prison TB programming and to create linkages to supportive treatment in the community for released prisoners;	Support and disseminate results of programmes that effectively empower prisoners and involve civil society in the design and implementation of prison and post-release TB treatment programming;
Promote independent research to encourage the documentation of conditions in prisons.	Support health research among prisoners to improve the understanding of how to increase the effectiveness of interventions.	Encourage multi-sector collaboration to conduct research on health conditions in prisons and produce data that can be shared across sectors.	Fund research that can produce data to improve interventions.

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