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# Eradicating slave labour by 2030: the challenge of worker health surveillance

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**Abstract** *Eradicating modern slavery is a relevant scientific, social, and institutional challenge issue. Indeed, efforts are being made globally to understand, map, and eradicate contemporary slavery as a target of the United Nations Sustainable Development Goals by 2030. However, little attention has been given to the Occupational Health Surveillance (VISAT) in the strategies and struggle against exploiting relationships. In order to fill this gap, the paper discusses contemporary slave labor (CSL) and its specificities in Brazil from an occupational health surveillance perspective. We initially highlight the link between CSL, occupational health, and occupational health surveillance (VISAT). We then present three VISAT challenges to addressing CSL: the challenging task of characterizing economic sectors and populations most affected; identifying determinants, risks, and effects on health; and strengthening occupational health practices and services to trigger specific actions regarding formation, information, and intervention in regions of high CSL prevalence. We conclude that Occupational Health Surveillance can play an essential role in the emancipation of workers engaged in slavery relationships.*

**Key words** *Slave labor, Modern slavery, Occupational health, Health surveillance, Human trafficking*

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## Introduction

New abolitionism has emerged in the 21st century in a "revival of anti-slavery activism"[1]. Efforts have been made on a global scale to understand, map, and eradicate contemporary slavery, human trafficking, and forced labor as a target of the United Nations Sustainable Development Goals (SDG 8.7) by 2030.

The new forms of slavery are structural phenomena of the global economic accumulation system, and their impact on different social formations after the formal abolition of slavery is difficult to measure comparatively. Thus, the number of currently enslaved is roughly estimated at 40.3 million people[2]. It is noteworthy that the anti-slavery movement operates on a much smaller scale than necessary to address the problem, and there is a lack of resources to build adequate solutions to the magnitude and complexity of the phenomenon.

This new abolitionism uses several strategies and involves many actors[3-5]. However, little attention has been paid to the knowledge and practices of occupational health surveillance (VISAT) and its role in identifying, controlling, and curbing slavery and providing support to victims of contemporary slave labor (CSL).

The right to health is often neglected in anti-slavery actions. The health sector is left out of political decision-making processes, and there is a lack of indicators of the impacts of slavery on health and the environment[7,8]. Thus, creating VISAT strategies are essential to offer more support to eradicate slavery. The international academic literature is limited in this regard, as it mainly focuses on the health care for people who have been enslaved, highlighting the importance of increasing clinical capacity, expanding the training of professionals to identify victims in health services[9-11] and understand the physical and mental consequences of slave labor to support appropriate treatments[12-14].

This paper addresses slave labor from the perspective of VISAT, drawing attention to some challenges in the case of Brazil, and aims to explain the connection between CSL, occupational health, and VISAT and discuss three challenges from the quantitative and qualitative data collected, particularly in the state of Mato Grosso. These data derive from the special unemployment benefits of the Ministry of Economy, the Observatory for the Eradication of Slave Labor and People Trafficking (SmartLab), the Reference Centers for Occupational Health (CERESTs), and the narratives of retrieved workers, which allows to debate (1) the issue of the economic sectors and people most affected by slave labor; (2) CSL-related health determinants, risks, and effects; (3) the strengthening of occupational health services to trigger specific interventions.

### Slave labor, occupational health, and surveillance

The relationship between slave labor and occupational health is a relevant axis of research and action that still needs to be explored and systematized better. Historically, reports linking slave labor and poor health date back to the Sumerian peoples' first written human records engraved in cuneiform clay. The level of health-disease of enslaved people is shaped by the historical-spatial characteristics of slavery, types of domination/exploitation regimes, specific working conditions in the several sectors (domestic work, plantations, livestock breeding, mines, manufacturing, and urban services), and the offer/lack of medical care. Differences between medical care for slaves and free citizens have been knowingly striking, insofar as, for slaves, there was little concern about the causes of illness and healing focused on "fixing" their bodies to enable them to return to their activities[15].

For example, during the period of African American colonial slavery in the 16th-19th centuries, diverse experiences and practices of colonial medicine and the emerging public health aimed to subject and control enslaved populations, discipline and regulate bodies at all stages of enslavement, from capturing people in their homeland, transatlantic trafficking ships, and the adequately said labor camps[16,17]. Something deserving more attention is that this model was not passively accepted. Resistance, uprisings, and struggles of enslaved groups, and their healing arts so often practiced in opposition to colonial slave medicine[18] may perhaps be the pioneering occupational health expressions in modern history.

It must also be recognized that this legalized colonial slavery left socio-cultural and psychological legacies in the Americas, which are currently reflected in racism and health inequalities, especially in the subordination of black workers, women, and the oppression of African descent people and peripheral communities[19]. In Brazil, social relationships and current employability structures are rooted in colonial legacies and based on class, ethnicity, gender inequalities, elit-

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ist political and economic hierarchies, large estates, and workers' devaluation.

We believe that CSL is linked to neocolonialism, patriarchy, racism, and sexism in capitalist development, shaping structural violence whose gradients of exploitation expose discrimination, inequalities, inequities, and repercussions on health.

However, the CSL-related health impacts should be better understood[20,21]. Studies have shown chronic and acute diseases due to unhealthy conditions, occupational and environmental risks, and hazards of the production process[22] and their contribution to spreading infectious diseases[23]. Such impacts occur at different levels of severity and affect physical, psychological, socio-cultural (including the victims' families), and territorial aspects due to environmental degradation, deforestation, use of pesticides, illegal mining, among other slave labor-based activities that affect quality air, soil, and access to drinking water[21,22].

Contemporary slavery is a multifaceted phenomenon whose definitions raise essential debates in the academic, political, social, and institutional settings. For example, in international literature, the term "modern slavery" has been used as an umbrella term to cover various forms of exploitation such as forced labor, human trafficking, sexual exploitation, child labor, debt bondage, and other similar practices.

There is no space to recompose a comprehensive and critical analysis of the entire debate in the social, economic, and legal sciences around these categories. However, we should make explicit that the way to characterize this phenomenon can expand or restrict the range of options for the emancipation of workers.

Contributions from the Marxist political economy, for example, under the section of the non-free labor concept[24], broaden the perspective to describe expropriations and exploitations covering several authoritarian forms of control and coercion mechanisms that immobilize the working class.

Patterson[25] made fundamental advances from the anthropological perspective, conceptualizing slavery as a relationship of power and domination that involves cultural, psychological, and social dimensions, interconnecting violence, genealogical alienation, and social disgrace/indignity. Slavery could thus be understood as an experience of "social death"[25].

Classic studies such as that by Elkins[26] even point out similarities between the realities of slavery and concentration camps, as institutions whose brutality leads to the dissolution of personalities and the development of a type of infantilization and psychological dependence. From other viewpoints, authors highlight three common aspects that define compulsory labor, debt bondage, child sexual exploitation, and forced prostitution: loss of the possibility of exercising free will, appropriation of the workforce, and the use of violence[5,22].

This paper adopted the term contemporary slave labor (CSL) to emphasize specific labor relationships and follow the Brazilian legal definition on which our data are based. This definition is definitely one of the most advanced due to its scope since it does not restrict CSL to deprivations of freedom but also conceptualizes it as a denial of the workers' dignity. It emphasizes that this is not a permanent condition (slaves as someone's attribute), but a context of oppression, exploitation, and situational violence characterized by four components (concurrent or not): degrading conditions, exhausting working hours, debt bondage, or forced labor[27].

The surveillance of these degrading, exhausting working conditions in contexts of indebtedness and coercion of workers is characterized not by the timely "retrieval" actions, but continuous, complex, systematic, and participatory practices, whose horizon is the gradual dismantling of the possible social reproduction of these forms of exploitation. Preventing and controlling environmental and occupational hazards and harm to change the situation of discouragement, exhaustion, physical and mental strain in CSL situations and contexts requires intervening at multiple levels and agents. Such surveillance is not restricted to monitoring CSL-related diseases, accidents, and deaths[28] as it incorporates the analysis of the magnitude and severity of cases, identifying impacted geographic areas, sectors, and occupations, and mapping the distribution of cases and their respective risks to develop concrete strategies for breaking enslavement cycles. To this end, VISAT seeks to gather social movements, public sectors, NGOs, and organized workers as fundamental agents, anchoring in different sources of knowledge – popular and scientific – to reduce health problems and promote health[28].

While few studies address VISAT's practices and experiences on slavery, it is noteworthy that the WHO Commission on Social Determinants of Health has included slavery/servile work among the priority categories for fighting health inequalities globally, highlighting the need to de-

tect affected populations, monitor inequalities, and identify potential interventions[7]. This broader view of Public Health can even overcome the limitations of legal and punitive approaches to combating human trafficking[29] by identifying risk factors and creating and evaluating preventive programs that consider the particularities of each stage of the trafficking process – recruitment, transport, exploitation, detention, integration-reintegration, and re-enslavement[30]. Based on this rationale, we highlight below three VISAT challenges in the face of the demand for the eradication of CSL.

**The challenge of characterizing economic sectors and populations affected by CSL**

A challenge for VISAT in addressing CSL is improving the understanding and monitoring of economic sectors, production processes, geographic characteristics, and populations affected by slave labor. In Brazil, according to data from the Labor Prosecution Office/Ministry of Economy[31], 45,028 workers were retrieved from slave labor from 2003 to 2018, and most of these retrievals (90.4%) occurred in the primary sector of the economy, in agriculture[31], and a more significant proportion of these cases was found in the states of Pará (24.7%) and Mato Grosso (11.4%). Data from 35,682 retrieved workers who received special unemployment benefits between 2003 and March 2018 show that a more significant proportion involved men (95%) who were single, with a low level of education, in occupations such as general agricultural worker, construction worker, cattle raising worker, bricklayer, and rural worker (Table 1).

In Mato Grosso, 4,394 workers were retrieved, and 1,799 were included in special unemployment benefits. This profile follows the national standard, involving more men (96%), with little education (28% illiterate and 41% studied up to the fifth grade), 13% of them were mestizos and general agricultural workers (77%), chainsaw operators (4%), and rural workers (4%).

These data give an idea of sectors, economic activities, and profiles of enslaved people in Brazil but are restricted to cases reported by the labor inspectorate that do not cover all situations of slavery (for example, enslavement in the sexual exploitation trade is generally outside the usual supervisory action). As a result, VISAT is challenged to produce other qualitative and quantitative information that requires new metrics, statistics, and estimates, because the affected population and exploitation patterns in various Brazilian economic sectors and regions are very likely to be larger and more complex than the affordable data suggest.

A large and invisible population is exploited in different economic activities, territories, and production processes, subjected to conditions whose parameters are equivalent to the classifications of slave labor. Available data do not necessarily cover situations such as forced labor of children and adolescents under the control of criminal gangs and drug traffickers; girls and women from more destitute regions "handed over" by their families to work in unpaid domestic services; sexually exploited women and girls trafficked abroad under false pretenses; and eventually forced labor in the penitentiary system; among other situations considered as "normal" exploitations that would fit the definition of CSL. So far, what is known about slave labor covers a negligible fraction of a broader, complex, and diverse reality.

The data described here indicated that the CSL in Brazil involved more men of working age and in situations of vulnerability. From an international viewpoint, most slavery victims are women, mainly due to trafficking for commercial sexual exploitation and domestic work[3,20]. It is important to connect this situation with Brazilian legislation, which does not criminalize commercial sexual exploitation, leading to the relative invisibility of women (and men and children) who can be enslaved in these activities. We know little about the size and type of enslavement in the sexual exploitation trade compared to other jurisdictions. Although less is known about this type of slavery in Brazil, global data point out that such slavery entails significant health risks. Of course, using a standardized framework to identify and classify the sociodemographic and health characteristics of enslaved people is a crucial job for health institutions.

In this sense, the current transformations in the economic setting, including the impacts of the COVID-19 pandemic, deserve VISAT's attention to reinforce its action mechanisms in sectors with a high occurrence of CSL cases.

In many parts of the world, CSL is highly concentrated in agriculture, construction, manufacturing and mining industries, domestic work and sexual exploitation[33]. Thus, it takes place in the production processes of a wide range of goods such as sugar, tea, palm oil, meat, cotton, metals, electronics, clothing, and the provision of services[32]. Therefore, an important strategy is to organize VISAT actions in and along production

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**Table 1.** Demographic and socioeconomic characteristics of workers rescued from slave labour in Brazil and Mato Grosso 2003-2018.

| | Brazil | | | Mato Grosso | |
|---|---|---|---|---|---|
| | N | % | | N | % |
| Marital status | | | Marital status | | |
| Single | 12.520 | (35) | Single | 451 | (25) |
| Married | 5.453 | (15) | Married | 300 | (17) |
| Unknown | 3.756 | (11) | Unknown | 215 | (12) |
| Other | 13.953 | (39) | Other | 833 | (46) |
| Total | 35.682 | (100) | Total | 1.799 | (100) |
| Gender | | | Gender | | |
| Male | 33.682 | (95) | Male | 1734 | (96) |
| Female | 1.824 | (5) | Female | 65 | (4) |
| Total | 35.682 | (100) | Total | 1799 | (100) |
| Schooling | | | Schooling | | |
| Illiterate | 11.115 | (31) | Illiterate | 500 | (28) |
| Up to 5th grade incomplete. | 13.573 | (38) | Up to 5th grade incomplete. | 736 | (41) |
| 5th grade | 1.349 | (4) | 5th grade | 55 | (3) |
| Up to 9th grade incomplete | 5.323 | (15) | Up to 9th grade incomplete | 320 | (18) |
| Elementary School | 1.514 | (4) | Elementary School | 67 | (4) |
| Incomplete High School | 941 | (3) | Incomplete High School | 37 | (2) |
| High School | 939 | (3) | High School | 33 | (2) |
| Incomplete Higher Education | 38 | (0) | Incomplete Higher Education | 3 | (0) |
| Higher Education | 13 | (0) | Higher Education | 0 | (0) |
| Did not answer | 877 | (2) | Did not answer | 48 | (3) |
| Total | 35.682 | (100) | Total | 1.799 | (100) |
| Skin color | | | Skin color | | |
| Mulatto, Caboclo, Cafuzo, Mamluk, Mestizo | 5.057 | (14) | Mulatto, Caboclo, Cafuzo, Mamluk, Mestizo | 232 | (13) |
| White | 3.021 | (8) | White | 128 | (7) |
| Black | 1.474 | (4) | Black | 98 | (5) |
| Indigenous | 481 | (1) | Indigenous | 2 | (0) |
| Yellow | 2.461 | (7) | Yellow | 125 | (7) |
| Unknown | 23.188 | (65) | Unknown | 1.214 | (67) |
| Total | 35.682 | (100) | Total | 1.799 | (100) |
| Occupation | | | Occupation | | |
| General agricultural worker | 26.601 | (75) | General agricultural worker | 1.377 | (77) |
| Construction worker | 1.399 | (4) | Construction worker | 32 | (2) |
| Livestock worker | 913 | (3) | Livestock worker | 33 | (2) |
| Bricklayer | 823 | (2) | Bricklayer | 24 | (1) |
| Sugar cane worker | 767 | (2) | Sugar cane worker | 1 | (0) |
| Rural worker | 646 | (2) | Rural worker | 74 | (4) |
| Mining worker | 627 | (2) | Mining worker | 1 | (0) |
| Chainsaw operator | 418 | (1) | Chainsaw operator | 70 | (4) |
| Other | 3.488 | (10) | Other | 187 | (10) |
| Total | 35.682 | (100) | Total | 1.799 | (100) |

Source: Information from the Integrated Action Project-MT based on special unemployment benefits for those rescued from slave labour.

chains to monitor working conditions and occupational risks in the work process behind the products, merchandise, and goods circulating in the market.

As the CSL is a global problem, more efforts are required to expand control mechanisms of production chains articulating organizations such as the WHO and ILO, favoring the moni-

toring of health and working conditions in priority economic sectors. This task transcends the responsibility of companies and private sectors involved in monitoring slavery risks in supply chains. For example, the business management intervention model to combat slavery[4] typically involves supplier mapping, inspection audits, and ethical certification schemes. However, this approach has governance limits and gaps, as it fails to detect and correct work relationships in some chain links[34]. Besides these corporate-led forms of governance, alliances between public health, unions, NGOs, movements, and other social actors can better identify and control impacts on health and the environment in production chains with a high presence of CSL[35].

## The challenge of identifying CSL-related determinants, risks, and health effects

Another critical challenge for VISAT is recognizing social determinants, occupational risks, and the effects of slave labor on health. There are still no official indicators related to the determinants, risks, and health problems related to the different slavery forms, conditions, and experiences in Brazil. Due to this gap, we explored some qualitative data from workers and social movements in the state of Mato Grosso, collected between 2018 and 2019, in the context of the Integrated Action Project, which aims to support those retrieved from slave labor in the state.

During the project activities, we could learn about accounts and narratives of experiences lived in slavery and information from social movements that provide an overview of (a) CSL nature aspects in Mato Grosso: characteristics, conditions, activities, and tasks of those who were subjected to slavery; (b) the context before and after the retrieval of workers; (c) examples of actions and strategies to combat CSL; and (d) signs and symptoms of health problems and possible illnesses. These data allow us to understand better the type of slavery, the forms of exploitation, the exposure to risks, the referred damages and injuries from workers' perspective.

This information shows that CSL involves three sets of critical situations that generate physical, psychosocial, and psychological harm: extreme violence, severe exploitation, and terrible conditions for reestablishing forces.

Violence is caused by constant and fierce surveillance, physical abuse, coercion, manipulation, armed supervision, control and restriction of freedom (including forced sleep deprivation), malnutrition, psychological threats, and corporal punishment. Workers experience extreme exploitation, characterized by dangerous forms of transport, long and exhausting journeys – more than 12 hours a day in some cases – undefined working hours, lack of or irregular payment. These situations cover both local and migrant workers and are sometimes relatively short-lived.

Generally, migrants are recruited from poorer regions and go or are taken to Mato Grosso. When they arrive, they are isolated, often housed in unsafe conditions in rural districts. They are taken to forests or farms under false promises of quick and easy financial gains. However, the reality is quite different, and they perform many intense and exhausting tasks that demand physical strength and a high level of energy expenditure, usually in strenuous and low-skilled activities, without breaks or resting opportunities. It is evident that there is no health and safety training in this work environment, and the financial return (when they receive it), in general, does not reach the value of a minimum wage.

When the worker is attracted to a remote area and control is gained over his person, this control can be realized by applying false debts, which involves "charges" for the food they eat, the tools they use, and transport costs. Such "fees" are typically overpriced by the "employer". Such control and exploitation are common along the agribusiness chain, on farms, or forests, often in clearing land, making fences, cutting wood and trees, feeding cattle, or slaughtering them for meat.

In this context, workers are exposed to different types of risks: biological (fungi, bacteria, and viruses) both in the accommodation and the work environment; physical (insects, reptiles, and other animals that are dangerous and transmit diseases, solar radiation, and old and dangerous equipment), chemical (sleeping where pesticides and fuels are stored), and ergonomic (heavy machinery and tools, repetitive movements, and cargo intense workload). Also, workers are subject to stressful situations, degrading scenarios, poor living and hygiene conditions, isolation, retention of documents, inadequate water, and poor housing. In case of accidents or illnesses, there is a slight possibility of seeking health services or medical-hospital care due to the control exercised by the "bosses" and the geographic isolation.

So, the CSL combines (a) conditions and characteristics of activities in critical situations (exposure to occupational and environmental risks, and extreme working conditions, and ex-

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hausting hours), (b) strict control and violence forms (psychological, physical, and negligence); and (c) poor reproduction conditions (accommodation, food, clothing, water, and mobility/ transport). Therefore, CSL is a process of imposing situations with a high potential to cause illness, accidents, and a wide range of suffering.

The workers' reports evidence severe impacts on their health. For example, in the physical dimensions, there is mention of diseases and conditions resulting from the work process, environmental context, pressures, and violence of CSL, such as malaria, fevers, respiratory problems, diarrhea, inflammation, muscle damage, and blindness, which clearly shows how much CSL forges damaged and weakened bodies, often driven to exhaustion. Life threat is constant, and even murder cases are reported.

Several psychosocial and psychological consequences emerge in the narratives of the retrieved in a dramatic setting like this, such as the feeling of abandonment and loneliness due to broken family ties, high degree of devaluation and dehumanization (feeling of being treated like an animal), alcohol use due to the pressures of this context, and manifestations of feelings and reactions such as fear, anger, sadness, aggressivity, and anxiety, which may also culminate in trauma and post-traumatic stress disorders (Chart 1).

Workers also report several risks and vulnerabilities as inducers and social determinants for the situation of enslavement. Most formerly enslaved people suffered abuse in the family, experienced child labor, parental abandonment, poverty, and limited access to school, housing, food, and medical care. Their life stories refer to discrimination, racism, and socio-cultural disadvantages that bring feelings of lesser value and a view of themselves as "second-class citizens" or even "things".

Several studies point out that poor and discriminated social groups become vulnerable to the CSL and that the increased poverty, environmental destruction, corruption, socioeconomic crises, conflicts, and violence pressure towards these forms of exploitation[5,12,30,34]. Policies to reduce poverty and corruption and improve access to education, employment, income, and housing are critical drivers in combating the CSL. Even so, more research is required to "investigate the main structural, social, and individual factors leading to exploitation"[20] and their interactions with the social determinants of people's health-disease status[7].

CSL typifies a dangerous situation with a high probability of causing harm because it involves a cycle of generation and exposure to environmental and occupational health threats and human rights violations. According to Zimmerman and Kiss[20], even these three elements, coercion, exploitation, and damage to health, are all connected in cases of contemporary slavery.

This situation means that CSL can be understood as the loss of freedom and the opposite of health. Health is not the absence of disease, but good conditions that make life possible, such as food, shelter, income, work, transport, and access to health services. All of these elements are absent, neglected, or beyond the control of enslaved workers.

Furthermore, if health is the capacity of each social group to control these key elements[36], then the lack of control and access to these elements shows CSL's high-risk level. The academic literature also evidences several risks and health effects similar to our results[9,10,37].

In terms of mental health, according to two different theories – psychodynamics of work[38] and the demand-control model[39] – workers' lack of control and autonomy over their activities, mobility, work process, working hours, hierarchical relationships, and rigid work organization can lead to high levels of stress or pathogenic suffering causing bodily and psychological effects. In this regard, depression, anxiety, and post-traumatic stress are commonly cited as effects of enslavement[10,13,14]. Furthermore, CSL is a profound social suffering experience impacting workers' physical, psychosocial, and psychological dimensions. Slavery is a frontal attack to the right of health workers. Therefore, VISAT is an alternative to address, better understand, and intervene in the root causes of this form of social suffering[7] shaped by social and environmental contexts that interconnect the coercion of neglected, poor populations with little access to land in authoritarian, bossiness and violence settings associated with unfair development processes that destroy knowledge, local traditions, and personal potential. Therefore, CSL is associated with reducing life possibilities and situations that limit material-corporal existence because it is an accelerated consumption of workers' energies, which can induce the breakdown of their physical and mental potentials.

**Chart 1.** Perceived aspects related to health determinants, risks, and effects arising from slave labour.

| Determinants | Scratchs | Health effects |
|---|---|---|
| History of child labor, exploitation, abandonment, and violence<br><br>Vulnerable families<br><br>Barriers to access to educational institutions<br><br>Need to feed and support the family<br><br>Poor implementation of public policies for inclusion, education, employment, and income<br><br>Government incentives in commodity chains focused on an economic level only<br><br>Inequality and lack of opportunity<br><br>Unsustainable economic development policies. | **Violence**<br>Constant surveillance, bodily abuse, coercion, manipulation, forms of punishment, behavior control, strategies of domination and deprivation of freedom, psychological and physical violence, and negligence<br><br>**Severe exploitation**<br>Inadequate working conditions, long working hours, exposure to occupational and environmental hazards, lack of occupational health and safety plans and strategies, low pay or no payments, armed controls, and supervision<br><br>**Poor living conditions**<br>Isolation (difficulty in collecting demands), poor nutrition, dirty water, low access to health services, inadequate shelter, confiscation of documents, and lack of medical and sanitary assistance | **Physical**<br>Malaria, fever, occupational accidents and incidents, respiratory problems, signs of weariness, diarrhea, murders, blindness, exhaustion, and tiredness<br><br>**Psychosocial**<br>Use of alcohol and other drugs, isolation from family networks and ties, feeling of wasting time and opportunities, humiliation, and feeling of little value<br><br>**Psychological**<br>sadness, anxiety, anger, fear aggressiveness, and concern with the future |

Source: Authors, based on interviews carried out in Mato Grosso with rescued workers and social movements in the 2018-2019 period and the experience of the Integrated Action Project supporting these workers.

### The challenge of strengthening services to trigger specific interventions

Another relevant challenge worth noting is the need to strengthen workers' health services/actions in the SUS and the expansion of ethical-political practices to prevent, protect, and promote workers' health in enslavement contexts.

In light of Brazilian experiences in combating slave labor, it would be strategic (a) to expand the capacity to identify cases of slave labor at the SUS entry points, (b) expand the network of medical and psychosocial care for victims, (c) promote actions to reduce the risks of (re)enslavement, articulating interventions, information, and training.

A first element to consider is the presence of articulating workers' health services in regions with records of slave labor, thus indicating a potential basis for greater participation by the sector in networks for confronting CSL. For example, when we mapped the location of each Occupational Health Reference Center (CEREST) and the spatial distribution of Brazilian municipalities with more than twenty workers retrieved from CSL, we noted that 67% of these cities are in the area covered by the CERESTs (Figure 1)[31]. Two of the five municipalities that concentrated 13.53% of all freed workers (Confresa, Ulianópolis, Brasilândia, Campos dos Goytacazes, and São Desiderio) have CEREST headquarters.

Despite CERESTs' limitations and the structural problems of the Brazilian health network, there are possible ways to organize operational plans in the face of CSL, considering three temporalities: before, during, and after the cases.

Possible actions before the occurrence of slavery relate to the means to prevent its social reproduction by focusing on its determinants through territorial surveillance attentive to tradi-

tional populations and vulnerable communities (e.g., quilombolas, indigenous people, peasants, fishers, riverside dwellers, and settlers), especially in settings of socio-ecological conflicts, the performance of large production chains, and seasonal migration, which means acting considering the CSL's roots and driving factors (high levels of poverty, inequalities, discrimination, racism, history of exclusion, pressure on traditional populations, and migrants) to reduce the degree of vulnerability, inhibit facilitators of recruitment/trafficking, and develop healthy and sustainable work and life alternatives within their territories, safeguarding local cultures, knowledge, potentials, skills, capacities, and vocations. Here, surveillance gains importance as an articulator of experiences in solidarity economy, agroecology, local productive arrangements, fair work networks, support for family farming, protection of territories and traditional peoples, associated with social and income policies. This surveillance aims to develop slavery-free territories with intersectoral and participatory plans built on alliances and collaboration between health services (CERESTs and Community Health Workers who have in-depth knowledge of the local reality), vulnerable communities and workers, organized civil society, social movements and NGOs, considering the prevailing socioeconomic features and dynamics there.

The integration of the theme in the Social Control agendas – Health Councils, State Councils for the Eradication of Slave Labor, Human Rights Forums – expands the concrete possibilities of building local plans and programs in this regard.

On the other hand, the intervention setting during the cases refers to efforts to detect cases and repress the use of slave labor, delimiting possible points of entry and recognition of situations of enslavement by health services, especially emergency and urgent care networks, hospitals, family health units, and health surveillance.

The sector and health professionals can quickly identify forms of servitude, forced labor, violence, degrading conditions, and exhausting working days during routine care/surveillance practices and in interaction with service users, migrants, and precarious workers, paying attention to where they live and work, what they do, and under what conditions. Regarding Primary Care, surveillance is crucial here, given its teams' peculiar level of knowledge to retrieve suspected cases, generate information, and support investigations.

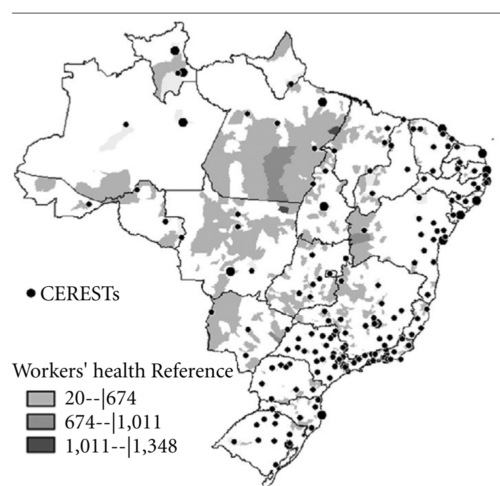


**Figure 1.** Municipalities with rescued workers (2003-2018) and distribution of CERESTs in the Brazilian territory (2018).

Source: Geographical location of Cerests according to data from Renast-Online existing in 2018; SmartLab data on rescued of workers in the Brazilian territory in the 2003-2018 period.

From the viewpoint of inspection-supervision of work environments and processes, the health sector can offer relevant contributions by participating in collaborative intervention processes, together with other actors such as tax auditors, the Pastoral Land Commission, the Labor Prosecution Office, and workers' organizations with more significant experience in inspecting slave labor claims. Interdisciplinary intervention with large and multiple teams – preserving the legal competencies of each entity – increases the investigative capacity better to characterize risks and effects to workers' health, identifies degrading conditions, perceives constituent elements of exhausting working hours, servitude, coercion, and offers the necessary support and referrals to clinical and psychosocial care, safeguarding the retrieved right to health.

In this last aspect, more steps need to be taken to break the helplessness of workers who are retrieved in inspections, as there is still no comprehensive care line, consolidated guidelines and practices of reception, listening, care, and social reintegration of these workers in a flow of intersectoral network with social assistance, education, and other relevant sectors around the country.

This sphere of action after the occurrence of cases refers to strengthening health care experi-

ences, opportunities for physical and psychosocial recovery according to victims' needs, symptoms, and specific realities, because enslaved people must be made visible and recognized as a specific group with particular health needs.

It is necessary to overcome reductionist approaches centered on the diseases and traumas of slavery and restricted to the individual understood in isolation and detached from the socio-cultural, ecological, community, and structural reality. Broader psychosocial, socio-cultural, and collective approaches can direct services and health professionals to social dialogue with initiatives such as the Integrated Action Projects and Integrated Action Network to Combat Slavery and other similar projects that support workers freed from slavery and victims of labor exploitation to access care, overcome bondage, and avoid re-enslavement. Thus, it is necessary to create conditions to expand autonomy and increase opportunities for workers removed from slavery relationships to have autonomy, economic-political agency, and even have their voices and knowledge recognized as essential for improving the entire CSL surveillance cycle. Freed workers are fundamental actors to assist in elaborating and implementing prevention, work process inspection, health promotion, and health care plans. Their knowledge can indicate paths and generate relevant information about reasons, consequences, and paths of liberation from the CSL cycles.

From the perspective of information, surveillance already has several vital sources available within and outside the health sector (maps, data, and information), such as the Observatory for the Eradication of Slave Labor and People Trafficking[31], besides sources of approaches in communities and data from social movements in the territory, especially data from the Pastoral Land Commission and NGOs such as *Repórter Brasil*. However, in the sense of epidemiological surveillance information and notification of morbimortality caused by the types of exploitation and violence of CSL, it is necessary to improve records and protocols to assist health teams in this process. We highlight the need to expand the mechanisms for notifying violence cases, such as the use of the Interpersonal/Self-inflicted Violence Notification Form of the Notifiable Diseases Information System (SINAN), which already contains fields on slave labor.

From the formation viewpoint, CSL is not a theme generally addressed in the traditional curriculum of health education. The health sector can fill this gap by organizing courses and training to make the public and health professionals aware of this crime and improve the competencies, skills, and capacities of the Health System in partnership with unions, workers, and vulnerable communities. Municipalities with higher prevalence can be prioritized in offering these training sessions while being pilots in victim assistance and public health campaigns.

Of course, the challenge of eradicating slavery transcends technical and instrumental issues, as it requires the sociopolitical struggles to sustain feasible paths for the concrete emancipation of workers in the correlations of forces and dominations existing in these forms of exploitation (forced labor, sexual slavery, and domestic servitude). Overcoming slave labor and mitigating its impact on health, as a structural problem, requires considering its roots in economic, cultural, and social relationships, especially in Brazil, a nation born under colonization, genocide, and different forms of slavery.

Considering VISAT in its emancipatory nature, such challenges posed by CSLs complexities require renewed strategies by the working class, in its capacity for organization and resistance, since under no circumstances should they be represented as passive victims, subjected, dominated, and incapable of autonomy and emancipation. Breaking these systems of domination requires solidarity between different strata of workers, to associate former enslaved and those formally free in their resistance, in a way that is also connected to the struggles of black and traditional people against exploitation, socio-environmental degradation, and discrimination. After all, in the struggle to overcome CSL, the risk of naturalizing the so-called "normal" exploitation of wage labor relationships and other gender, ethnicity, and skin color oppressions must be avoided. Once absent from the dialogues between trade union movements, neo-abolitionist organizations, and movements for the defense of workers' health, these complex issues would become limiting factors for the ideal of eradicating CSL.

## Final considerations

The paper highlighted some challenges of occupational health surveillance for the eradication of CSL and showed the importance of (a) identifying affected economic sectors, regions, and populations; (b) increasing knowledge about social determinants, risks, and health effects of enslaved

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populations to compare regions and other working populations; (c) and strengthening workers' health actions and services to increase the participation of this sector in anti-slavery actions.

We did not aim to design an operational plan for VISAT to address slave labor but draw attention to its theoretical-practical role and potential in breaking worker enslavement cycles. The challenges mentioned here are limited and do not cover the complexity of the demand that these work relationships attach to VISAT. However, with a critical spirit, one can broaden the horizon and better understand the task required in health-work-environment relationships to envision concrete alternatives to strengthen the struggle for workers' emancipation, especially in this unfavorable socio-political situation in the Brazilian reality.

## Collaborations

LHC Leão contributed to the conception, design, analysis, and interpretation of data; P Sieberst, A Trautrims, V Zanin, K Bales contributed to the writing of the paper, its critical review, and approved its final version.

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