

Abstract

This article proposes two premises that underlie biomedical health care delivery provided through medical missions to Madiha (Kulina) Indigenous Amazonian people living in forest villages. First, that health care is implemented through a set of detached transferable goods and services. Second, that health is a condition that requires the importation of knowledge and resources. The premises were induced through qualitative research on the Brazilian government's medical missions that provide biomedical care to Madiha (Kulina) in the southwestern Amazon as part of the national health care system. Despite policy rhetoric, delivery practices disregard embedding health and health care in local infrastructure and cultural conditions. There is little or no collaboration with Indigenous healers, capacity building of the local (Indigenous) health care system, education of resident lay health monitors, or extensive and lasting infrastructural development. The article recommends reorientation of delivery to prioritize local health care infrastructure development.

Key words Amazonia, health care, Kulina, Madiha, medical missions

Underlying premises in medical mission trips for Madiha (Kulina) Indigenous people in the Brazilian Amazon

CHRISTIAN FRENOPOULO

Introduction

This article proposes that the delivery model of the medical mission is one conspicuous reason why the Brazilian government's health care system is not able to meet patient and health care staff expectations for improving the health of Indigenous Amazonians living in forest villages. Although it has morphed over the decades, the traveling medical mission is still the core of biomedical health care delivery in these villages. The consequence is that biomedical self-sufficiency and independence has never been successfully achieved there.

The mission trips described in this article are a government

service of the national health care system in Brazil and, as such, they implement an iterated non-specific model of delivery that responds to universal health care targets established by the government authorities.[1] Despite policy and political rhetoric that intends to present them as part of a coherent and cohesive primary health care organization specially designed for Indigenous populations,[2] the research presented here shows that their actions mirror Short Term Medical Missions (STMM) and other types of medical missions, and for that reason, can justifiably be considered in the context of the literature and research on medical missions. Dependency on medical missions to supply health care in remote areas, insufficient local infrastructure, and culturally insensitive and decontextualized interventions are issues that have been examined many times in the literature [e.g., 3,4,5,6,7,8]. The specific locality discussed here is representative of this type of problem.

The contribution of the article is its analysis approach, drawing on the literature of medical missions to interpret government-funded interventions. The intention is to show how a national

health care system can provide a service that may be just as neocolonial as Short Term Medical Missions (STMM) funded and staffed by expatriates.

Medical mission trips, regardless of their funding or staffing, share some core characteristics that are summarized in this article as two basic premises. Firstly, medical mission delivery treats health care practice as a set of transferable goods and services. Secondly, health is managed as a condition that requires imported knowledge and resources. In the trips observed in this research, these premises appear to go unrecognized by most actors. The few staff members who do perceive them, do not consider them problematic. On the contrary, these premises are integral to the narrative of heroism that pervades their work,[9 p347] being used as arguments to convey the relevance of the trips.

These premises need to be made explicit because they are potential contributors to certain problems that staff persistently complain about, but do not see as outcomes of mission delivery. Specifically, there is a chronic perception among the workers that there are insufficient staff and resources, and also that there are enduring cultural barriers that obstruct patient adherence. The workers seem to think of these problems as self-sustaining and unrelated to the delivery format.

This article notes that health workers do not see these issues as intertwined with delivery. Instead, they consider the delivery model intrinsically beneficial. Staff believe that the problems are due to defective and insufficient implementation. They tend to think that the solution for deficient health care is to intensify the delivery format and to further its implementation. In contrast, this article highlights a fundamental flaw in the approach itself.

It is important to clarify that the problem is not mission delivery per se, which can offer valuable support to deal with certain types of health concerns. Rather, the issue is the reliance on a model that is implemented in tandem with a disregard for developing the local health care infrastructure, thus perpetuating dependency on external resources and actors.

The research shows that where these missions are carried out, there is almost no concurrent investment in the improvement of the local health care infrastructure, and above all, its independence. For example, there is virtually no strategy to reduce disease prevalence and incidence by targeting local structural factors. There is very little attempt to improve the population's living conditions. There is scant attention to the education of the population and resident village lay health

monitors. There is no engagement with the Indigenous medical system and no significant attention to Indigenous understandings of health and disease. Although there have been attempts to improve drinking water supply and waste management, these have been short-lived investments.

In short, biomedical health care provided through the format of the medical mission in Amazonian villages does not express a public health approach of attempting to promote long-term improvements in health status by addressing local structural changes. Instead, the medical mission format localizes disease as a problem limited to individuals, detected and treated in the fleeting clinical encounter. Most of the nursing work is certainly oriented towards prevention and screening, such as universal immunization and prenatal care. However, actions are limited and mostly focused on individuals, not on generating health care infrastructure.

This article presents data obtained through qualitative research of the medical missions that provide health care for Madiha (also known as Kulina) living in the Upper Purus River region in the southwestern Brazilian Amazon, mostly during 2009-2010. The data shows that there is little verifiable improvement in health indicators, that there is low patient adherence to professionals' directives, and that staff share a persistent perception of insufficient resources and staffing. The article shows that these recurrent problems are attributable, to some extent, to the medical mission delivery format.

This argument is intended to be very straightforward and understandable to a broad readership. Yet, since biomedical delivery in remote or rural areas of the Amazon has long applied the medical mission model for decades, it is apposite to continue to analyze this type of health care delivery.

The article is relevant for nurses, among other health professionals and administrators, because it tries to expose underlying conceptual assumptions of a particular delivery format that is taken for granted as unproblematic. The conceptual basis of nursing and health care education and practice often loses ground to a narrow focus on procedural and technical skills.[10,11] Nurses working with remote populations or with populations that are culturally very distinct could benefit from this article by questioning the conceptual basis of their work, asking themselves if they consider that health is something that is "taken" to a location and otherwise unavailable locally, and if their work genuinely supports local health care infrastructure and autonomy or if, instead, it perpetuates dependency.

The article concludes by proposing that these medical missions should be redesigned as supports for the development of local

health care infrastructure. Medical missions should become elements of a multilayered process oriented towards long-term capacity-building at the local level. This delivery format should apply resources and actions to providing long-term benefits for the local health care system, and should respond to planning that is based on local health priorities.

Despite funding stability[12] and administrative reorganizations[13] over the past decades, the delivery of biomedical care for Indigenous Amazonians living in forest villages in the region of this research has been broadly inefficient to significantly improve community health.

Epidemiological indicators do not demonstrate notable declines in disease incidence and prevalence for endemic diseases between 2004 and 2009.[12,14,15,16,17,18,19]. In terms of patient utilization, the population was generally reluctant to use services and found them discomforting. Patients avoided diagnostic analyses and often did not adhere to treatments. In terms of staffing quantity and quality, there was a constant turnover of health care workers. Difficulties in recruitment and retention of professionals persistently occurred. The researcher personally observed these occurrences from trip to trip, and heard them repeatedly recounted in interviews and conversations with staff and other professionals. Concurrently, the same types of issues have also been documented for Indigenous health care in other regions of Brazil [e.g., 20].

Supplementary interviews in 2020 obtained updated information that revealed a persistence of the model and its underpinnings. A permanent health post was recently built in one of the villages in 2017, which is an important step in the direction of infrastructure development. However, it is only open when the traveling team is present. Otherwise, the general delivery format is the same, especially for the remaining villages.

Theoretical background: Medical mission delivery

In this article, the term “medical mission” is used as an analytical category for a particular health care delivery format involving traveling health care teams. It is applied here to the government-funded medical and nursing trips to remote forest villages in Brazil that are part of the national health care system.

Government-funded medical missions in Brazil

The medical mission delivery format has always been a staple of the Brazilian government’s health care services for its Indigenous population, despite a succession of evolving

bureaucratic structures intended to supersede it. Government-funded health care, which began in the early twentieth century, variously consisted of combining the actions of traveling medical teams, attempts to epidemiologically isolate Indigenous lands and populations, the permanent (or semi-permanent) residence of a nursing professional (or team) in or very close to select key villages, and sometimes outsourcing medical and sanitary services to NGOs or other organizations with their respective traveling teams.[2,21,23]

Specifically, in the 1950s, the Aerial Sanitary Units Service (Serviço de Unidades Sanitárias Aéreas) would fly to offer basic services to remote villages, such as immunization, dentistry, and tuberculosis control.[2 p7] Later, they were replaced by the Traveling Health Teams (Equipes Volantes de Saúde) in 1967, also traveling sporadically to offer care to Indigenous communities.[2 p7] As funding decreased, NGOs and the Catholic Church began to offer services in the absence of government teams, also relying on traveling teams.[1 p121-126 p133-136,22,23,24,25] In the 1980s and early 1990s several meetings proposed reorganizing delivery on the basis of local districts, to rationalize administration of resources, which eventually evolved into the current system.[2 p8]

The current delivery model began in the 1990s. In the current model, traveling health teams visit the villages to offer basic medical and prevention services, and conduct epidemiological surveillance. They travel to the villages with variable regularity depending on the region and environmental conditions.[2 p14] The teams are called Multidisciplinary Indigenous Health Teams (Equipes Multidisciplinares de Saúde Indígena).[2,26] In principle they should be comprised of a physician, a nurse, a dentist, and a nutritionist, each with an assistant, and some other technicians and specialists.[2 p14, 26 p46] In practice, they are never so complete, as numerous professionals are consistently lacking [e.g., see 20].

Each village also, ideally, has a permanent resident lay health monitor (usually barely trained and equipped with a minimal set of basic over-the-counter medications) and a lay sanitation monitor, who are theoretically also part of the team but in practice not always significantly included.[2 p14] Care that entails more than basic medical or nursing services requires transport out of the village to hospitals or clinics in the nearest towns or in major cities.[2 p14] The current organization intends to complement the traveling health teams with other supplementary structures (e.g., Indigenous representatives in administration and supervisory boards, attempts to introduce water and waste sanitation infrastructure, etc.), but the core frontline of medical, nursing and prevention services for the villages is still the traveling team.[2,26]

There is an established health care policy for Indigenous populations since 2002.[2] It mandates the implementation of a differentiated delivery that encompasses the “cultural, epidemiological and operational specificities of those populations”, [2 p6] and which must develop and implement “appropriate technologies based on the modification of conventional Western service delivery” [2 p6] as well as the “formation of staff for work in intercultural contexts”. [2 p13]

Successive studies of the Indigenous population’s health care system over these past decades have reiterated the lack of achievement of these policy objectives. Langdon and Garnelo[1] confirm the gap between the legal guarantees and cultural rights of the Indigenous populations, and actual objective results. They explain that the policy recognizes the legitimacy of Indigenous knowledge and practices, and mandates an approach that integrates Indigenous medicine with biomedicine. Biomedicine is assigned a role of complementary medicine.[1] Yet, in practice, there has been little impact in that direction. There is a disconnection between the policy and the actual “therapeutic practices of the multiprofessional teams that provide primary care in Indigenous villages”. [1]

In practice, biomedical health care personnel conceive of Indigenous medicine and culture in essentialist terms, and do not recognize Indigenous agency or the recreation and reinvention of tradition [e.g., 27,28]. Indigenous peoples and their views are “negated or ignored by an official health system that limits itself to a vague ordering of administrative health routines” that is “marked by a high degree of standardization of rigid prescriptive technical norms, whose biomedical character makes them impervious to local contexts and singularities” [e.g., 1,27,29,30,31]. Attempts to build intercultural or intermedical health care have mostly originated from Indigenous actors, and administrators and providers of biomedical care have been uninterested in this integration, consistently dismissing or segregating Indigenous medical knowledge and practices.[20 p179]

Specifically regarding nurses working in Indigenous health care, a recent study by Calvacante[20] in the state of Pará (northern Brazilian Amazon), showed that the nurses were focused on technical and biological aspects of delivery, and did not have sufficient cultural competencies.[20 p200] The nurses confirmed that their actions in the villages were focused on fulfilling technical procedures and bureaucratic duties, following the administration’s calendar, which, they acknowledged, did not match the context or calendar of the Indigenous communities.[20 p170]

In their interviews with Calvacante, the nurses recognized Indigenous cultural practices, but only as anecdotal narratives of cultural contact, not as genuine care and medical practice. She asserts that the nurses sustained the hegemonic interventionist and technocratic biomedical approach, independent of the social and cultural context of the patient population.[20 p177] In self-assessed questionnaires, the nurses recognized that they had some knowledge of the population’s dietary or social norms, but had less knowledge of the belief system regarding life, death and illness, as well as treatments and rituals. That is, the nurses knew less about Indigenous care approaches and practices than about other aspects of the population’s culture.[20 p176]

Scholars have characterized this relationship between the Indigenous patient population and the Brazilian state in the health care system as a “postcolonial asymmetry” that involves the “legal and moral subalternization of the Indigenous peoples”. [1] This asymmetry is translated “at the technical level in the hegemony of the primary health care model developed in a mechanical and standardized form on Indigenous reserves”. [1]

Indeed, government services for Indigenous populations often establish and reinforce colonial types of inter-societal relationships, sometimes called “internal colonisation”. [32,33,34] From the Indigenous population’s perspective, national citizens who attempt to occupy Indigenous lands, such as ranchers or gold miners, are labelled as “invaders” [e.g., 35]. National citizens are, to Indigenous peoples, cultural and ethnic foreigners who bring imported (i.e., locally unavailable) goods and services into their communities [e.g., 36].

This type of technical procedural delivery of health care services to Indigenous populations has also been characterized as a form of “structural violence”. [21,38] “Structural violence is perceived as a subjectless and blameless systematic violence which transcends those immediately involved in relations of care (health professionals and patients), thus placing constraints on the possibility of action” [21]. Structural violence is a form of “violence exerted systematically—that is, indirectly—by everyone who belongs to a certain social order”. [38 p307] The point about structural violence is that it presents itself to the subjects involved as “nobody’s fault”, [38 p307] since individual actors are not individually responsible for the oppressive structure.

Identifying this type of violence and neocolonial relations embedded in the health care delivery structure is relevant for nurses in the Brazilian Amazon, as they are at the frontline of

service delivery in this context. Calvacante's [20 p169 p171] research confirms the pattern that the nurses are decisive members of the medical mission teams, due to the constant lack of physicians. Thus, in addition to their nursing duties, the nurses frequently have to make clinical decisions, evaluate cases and take on the functions of other professionals. [20 p171] They are also required to maintain bureaucratic and administrative records. [20 p170]

The majority of the nurses in Calvacante's study had no prior experience of working with Indigenous patients. They frequently used the metaphor of feeling like they had "dropped in a parachute" into the field, highlighting their unpreparedness for its unique characteristics. [20] In self-assessment questionnaires, the majority recognized that they never or rarely made decisions or carried out actions in conjunction with the Indigenous healers (shamans) and/or midwives. [20 p142] They never or rarely self-examined their own cultural background, never or rarely recognized the risk of cultural imposition, and rarely accepted different perspectives on health, illness and care between patients and biomedicine. [20 p128-9]

"Medical missions" as an analytical model

This article interprets the government's traveling Multidisciplinary Indigenous Health Teams as "medical missions", due to their strong resemblance with other types of traveling medical teams.

The archetypal medical mission would be the Short Term Medical Mission (STMM). Typically, such enterprises are composed of voluntary labor and address health crises. [3] They often attract young medical practitioners, and have become a common training experience globally. [4] Habitually, the health care staff, administration and organization are external agents (often expatriate foreigners), without a personal long-term investment in the delivery location. [4]

A generic model of the "medical mission" can be proposed on the basis of STMMs and other types of traveling medical teams. Namely, a medical mission is a delivery model that consists of a group of traveling health care professionals who provide services to a distant population in the population's location of residence. The goal of a medical mission is to provide care to a population who suffer from a considerable problem of access. Medical missions typically operate obliquely to existing local health care systems, superimposing a divergent delivery model. [39 p1450] They are isolated efforts to provide health care in specific locations for a limited period of time. In contrast to local health care systems, medical missions

usually tend to focus on relief and remedial care. [39 p1450]

As a delivery structure, medical missions have some particular characteristics that distinguish them from the delivery of biomedicine in stationary urban clinics, hospitals or doctor's offices. This is partly due to their mobility and to their typically short time demarcations. For instance, medical missions typically focus their scope of intervention on a limited select number of procedures and diseases. They have limited supplies of materials, and the professionals may have limited or no access to ancillary services, such as imaging technology or laboratory tests. Thus, medical missions have limited diagnostic and therapeutic scopes [40]. Also, stationary clinics can also usually redirect their patients further along the health care network with less duress and discomfort for complex or specialized diagnostic or therapeutic needs, compared to mobile clinics [41,42].

Globally, there is also often a high rate of turnover of professionals between trips. There may be little or no opportunities for follow-up encounters with patients. Often, the professionals have little or no prior acquaintance with the patient population. There may be significant ethnic, cultural and linguistic differences between patients and professionals. The work often requires enduring spartan conditions, long hours and intense schedules. [4]

In terms of their efficacy, it is not sufficiently demonstrated that medical missions have lasting impact on the health of communities. [5 p336,43 p424] There is also persisting concern that they may have deleterious effects. [43 p424] As in this article, some recurrent critiques attribute their shortcomings to the delivery format itself. Namely, that medical missions typically focus on treatment of individual problems and rarely engage in prevention or address the health needs of the community as a whole. [6] Mission workers are usually unfamiliar with the local health needs and endemic diseases, the strengths and limitations of the local health care system, and standards of care. [6,7 p339] There are often scant relations with the local health care system. [6] Care is provided under conditions of short amount of time, large numbers of patients, lack of follow up, and limited medications and technology. [6,7 p339] They may provide only temporary therapies that do not address root causes, leave behind waste, and impose burdens on local health facilities. [8 p317] In addition, the care offered may be culturally irrelevant or inappropriate. [8 p317] Medical mission workers are often unaware of the local cultural health belief systems. [5 p335-336], are frequently unacquainted with the local culture, and may confront language barriers. [6,7 p339]

As a consequence, their practices may entrench paternalism, inequitable relationships, and appear ignorant of underlying power and privilege issues relevant to the context.[44 p163] This kind of delivery entails dependency on outside resources and personnel.[5 p338]

Montgomery[5] identified four major assumptions underlying the medical mission delivery model. Firstly, there is an assumption that no localized knowledge is needed and that participants do not require awareness and training regarding the population's medical systems, beliefs and practices. Medical mission workers may remain ignorant of possible conflicts regarding health beliefs and practices, miscommunication and non-compliance. Secondly, there is a naïve realism that assumes that approaches suitable in one setting may be applied intact in another location. This is related to the third assumption, which is a technique or formulaic approach. Mission planners apply a generic design that is essentially identical for all settings, and do not seem to think that special planning or the design of locally appropriate projects is necessary. The fourth characteristic is the assumption that a short-term, quick-fix project is sufficient or satisfactory. Consequently, a longer-term preventive approach is precluded.

As expressed by Dohn and Dohn,[43] the consequence is a delivery model in which the focus is on a technologically oriented program, based on facility resources and the authority of trained specialists who control the health agenda.

A fifth assumption may be added here to Montgomery's list, in view of the frequent lack of evaluation and regulation of medical missions.[8,45] It would seem that planners perceive medical missions as inherently beneficial, such that deliberations regarding their practices and design are unnecessary. In preparation for this article, it was found that there is a paucity of published discussions regarding their ethics, design, and implementation. In a review of articles published in English between 1985 and 2009, the majority (78%) of articles were descriptive of specific mission trips and only 5% had theoretical or conceptual analysis.[6] Very few discussed the ethics, policies, standards or evaluations of short-term medical missions.[6]

Thus, when compared with stationary delivery in urban centers, medical mission delivery may appear volatile, precarious, and restricted. Delivery is not implemented in a way that seamlessly emerges from the unique characteristics of the location and population. Instead, it is usually enacted upon the population as a beneficent foreign practice that is transported without modification from its location of origin.

This type of critique is also developed by Fassin in his analysis of humanitarianism. Fassin argues that humanitarianism reduces aid to the biological lives and biological survival of recipients, oversimplifying recipients' histories, complex realities of suffering and injustice, and subjectivities.[46] Fassin is critical of humanitarianism's "self-congratulatory ethic of rescue". In his view, the medical model of "rescue" is a distraction from how to achieve long-term change and should be replaced by practices that consider structural elements, since humanitarianism does not substitute or resolve systematic oppression or inequality.[47] Due to the focus on the individual, as opposed to community conditions, social processes are translated into the clinical language of individual suffering.[48]

Analytically, "humanitarian" action can be contrasted to "development", which aims for long-term lasting improvements.[49 p1] As such, suggestions to redirect and reorganize medical missions place emphasis on achieving more congruence with the local conditions and culture, and as supports for long-term improvements [e.g., 4]. Melby et al.[4] call for a "paradigm shift" regarding medical missions grounded on four factors: 1) cross-cultural effectiveness and competence, 2) bidirectional relationships, 3) local capacity building, and 4) long-term sustainability.[4] The intention would be to contribute to local infrastructure and human resource development in order to avoid dependence on a repetitive and disjointed cycle of traveling medical teams.[4]

Generally speaking, medical missions must become elements that contribute to local development.[43 p424] They should provide support to local organizations and individuals.[5 p337] They should help with the training of local providers and patients' access to local care.[5 p338,8] Medical missions should supplement local services.[5 p340]

The recipient population, not the mission workers, should be the ones who define the needs to be met.[5 p340,16] All efforts should be coordinated with existing health services and location-specific projects, instead of applying general formulas.[5 p340] The emphasis should be on supporting the local system with skill and equipment assistance, instead of targeting patient volume.[5 p340] The effects of the missions must be assessed in terms of their contribution to the local delivery system.[5 p340] Periodic evaluation should be conducted to improve design and implementation.[8]

Thus, medical missions should move towards community-based health and preventive programs.[43 p424,16] The mission team should help improve local capacity for health care, and address systemic problems related to poor health,

such as poverty, hygiene, and illiteracy.[43 p424] Medical missions should move away from a disease and relief orientation towards prevention and local development.[43 p424]

Additionally, mission workers should be trained in cultural awareness and cross-cultural communication, acquire proficiency in the native language, and receive training on the contextual realities of the mission sites.[6,50 p379] Mission planners should promote consciousness-raising among the workers and long-term relationship building with the community.[44 p163]

Broadly speaking, this article contends that the characteristics of the medical mission as an analytical category would apply to the Brazilian government's Multidisciplinary Indigenous Health Teams. These teams are mostly staffed by Brazilian nationals, funded by the state as part of the national health care system, and intended to provide care with some reliable regularity. However, their strategies, practices, and logistical implementation follow the medical mission model. For instance, there are strong cultural differences with the recipient population and the Indigenous medical and health system is neglected or segregated. There is a high turnover of professionals, little coordination with infrastructure development, and a formulaic procedural approach to intervention. Finally, there is little involvement of Indigenous participants in planning and execution.

Other scholars of the government's health care system for Indigenous populations in Indigenous territories in Brazil have not explicitly used the "medical mission" model or the STMM literature to interpret the implementation model and its problems [e.g., 1,20,21,27,28,29,30,31]. Such use is an innovation of this article.

This article advocates that understanding these traveling teams as medical missions could contribute to inform a "paradigm shift"[4] in their design and implementation, in order to reorient their organization and practices towards local health care infrastructure development that could contribute to an increased ability to resolve and prevent health problems in the villages.

Research methods

Qualitative approach

A qualitative approach guided the research. Specifically, the goal of this article is to uncover conceptual assumptions that underlie a set of practices and behaviors. The article intends to unearth the unspoken notions about health and health

care that orient medical mission delivery design and actions. These notions are not quantifiable nor objectively empirical elements, but conceptual assumptions about the nature of health and care [e.g., see 51].

Additionally, the research sought to obtain data from a naturalistic setting, without imposing a controlled and artificial manipulation of variables, and allowing for sufficient flexibility and adaptability for unforeseen and unpredictable events that could emerge during interactions with participants and other situations. Generally speaking, qualitative approaches tend to provide researchers with sufficient elasticity to work under such conditions [e.g., see 52].

In terms of positionality [e.g., 51,53,54,55], the researcher is neither Indigenous nor a Brazilian national, and therefore is not a cultural native in the research settings. The researcher would be classed as "White" (branco) by the participants, which is term that is broadly applied in this region (by the Indigenous and by Brazilian nationals) to people with an urban industrial middle class culture. The researcher's status as a foreigner was not evident to participants, and sometimes came as a surprise revelation. This is possibly because the researcher had traveled to Brazil many times before, including this region, and was fluent in Portuguese and comfortable with cultural immersion. The researcher was also quite adaptable to the austere and particular living and travel conditions that characterize the lifestyle of the Brazilian nationals in this region [e.g., see 55]. The researcher did not feel any significant culture shock [e.g., see 56].

As an adult male with a university background, and perceived as "White" (branco), it is possible that the researcher was able to have unfettered access to a number of physical locations. For instance, it may have allowed him to travel alone, to explore locations with independence, and to establish his own routine, thus facilitating passive observations [eg., see 55]. As a male, he may have been expected to accept physical discomforts and spartan conditions. It also may have facilitated social integration with the other male members of the health team and the male boat crew. His positioning may have also potentially implied some degree of assumed authority in interviews, especially with the administrative staff and health care workers. This may have facilitated access issues, including to their grey literature and internal records, and may have implied some degrees of impression management on behalf of some interviewees. Conversely, the researcher did not integrate much with Madiha villagers, and had almost no direct contact with Madiha women or children. He also did not engage in recreational activities with Madiha individuals.

In terms of research gaze and interests, the researcher was mostly focused on the way interethnic relations were carried out in health care interactions, exclusively for academic purposes.

The researcher's individual personality may have stood out, as he is a generally reserved and quiet person, prone to observe and listen. This type of reserved behavior was also a research strategy, to avoid participants feeling invaded and to avoid any demeanor of foreign expert or academic superiority. He was hesitant to participate in some male leisure activities, such as soccer [e.g., see 55 p264].

The researcher assumes that his composure and his blending in with the culture of Brazilian nationals, coupled with the hospitality of the research participants, may have contributed to the rapid formation of comfortable rapport and interactions. It is expected that most of the behaviors observed during research and the information provided in conversations and interviews are naturalistic, representative, and would have occurred in the same way regardless of the researcher's presence [e.g., see 55].

In terms of reliability, as the results of the research echo and reiterate similar findings about comparable settings and programs, it seems reasonable to assume that the results are reliable [e.g., see 57]. In terms of validity, the methods produced data that was coherent with the objectives and the data replicated itself as observations progressed. It seems reasonable to assume that the research and analysis were not significantly impaired by any methodological or personal biases of the researcher or context limitations [e.g., see 57,58].

The researcher recognizes that the opinions and interpretations of the Madiha patient population were not researched systematically, and that some of the information about them was obtained indirectly through the health workers. It is possible that future research that engages the patients' interpretations and experience in a direct manner may qualify or refine the interpretations presented here.

Research population

The core research population considered in this article were the health workers that traveled to Madiha villages to provide biomedical health procedures. The workers formed part of a team of varied professionals. When complete, the team consisted of a physician, nurse and dentist, each with an assistant, and support staff (boat crew and cook).

For this particular location, the team was traveling with some reliable regularity to the villages, ideally once every month.

Depending on the size of each village, the team stayed in them for one or two days, sometimes less than a full day.[9] The team lived on the boat during the trip, sharing the living space and all activities. The space was very cramped, and things were constantly being moved around to make space for changing activities. Most of the team members also worked together in an office in the town of Manoel Urbano, where they carried out bureaucratic and organizational duties, and also voluntarily helped any Madiha villagers who were in town to deal with circumstantial needs.[9]

The cooks, boat crew and assistants were residents from the town of Manoel Urbano, except for the dental assistant who was from the nearest town Sena Madureira. One nurse, and the physicians and dentists were from other cities. The nurse had taken up permanent residence in Manoel Urbano, but the physicians and dentists would come specifically for the boat trips and would stay in a hotel if they had to linger in Manoel Urbano. Except for one of the cooks, the workers were quite young, either unmarried or with small children.[9]

The health workers are Brazilian nationals and the language of research was Portuguese. The researcher is fluent in Portuguese. Any conversations or brief interviews with Madiha were also in Portuguese, as the researcher does not speak Madiha. This limited the number of Madiha who could be spoken with directly, mostly adult men. The research did not focus in detail on how the health care actions were received or interpreted by the patient population, which is a very valuable concern to investigate, but was excluded for logistic and legal reasons. Much of the information about the receptivity of the patient population is derived from the opinion of the health workers.[9]

Research location and setting

The researcher accompanied three trips between 2009 and 2010. Each trip took about twenty or more days. The boat traveled from Manoel Urbano along the Upper Purus River and into the Chandless River, located in the state of Acre in the southwestern Brazilian Amazon, not far from the border with Peru. There were six Madiha villages on the team's route, which varied in size from just over one hundred to less than forty people. All the villages had a constant traffic of canoes throughout the day, with villagers visiting one another's village. There were also some nuclear families living in temporary camps along the river.[9]

At each village, the health team unloaded the equipment and carried it up to the village. They set up the equipment in the school house or if there was no school (as in the small villages),

on somebody's front porch. Most health actions took place in that single location. For some cases, staff visited individuals in their homes.[9]

The Madiha villages mentioned in this article are located in the municipality of Manoel Urbano, in the state of Acre. The municipality has only one small town. The rest of the municipality is more than 90% tropical forest, with Indigenous villages and mestizo riverine farm homesteads sprinkled along the banks of the river. The Purus River is an affluent of the Amazon River. It runs south to north, starting just across the border in Peru.[71]

As the researcher observed, and as described in the literature, Madiha are hunters and manioc farmers, and they also fish with nets. They live in villages that range in size from just over one hundred people to about thirty or less. Headmen are usually prestigious hunters, and always males. Villagers are usually interrelated as family members.[67,72,73,74] Many Madiha do not speak Portuguese. They are primarily monolingual, and their language is not mutually comprehensible with that of any other Indigenous group in Acre. Their language belongs to the Arawan stock.[74,75,76] As the researcher observed, Madiha shun interactions with other ethnic groups. They do not interact very much with the neighboring Huni Kuin (Kaxinawá) Indigenous people. They also do not interact very much with the riverine farmers. Madiha also rarely visit the town.[9]

The Madiha medical and healing system thrives in the villages. The researcher did not observe Madiha healing and did not research it first-hand. The following brief descriptions of the Madiha medical system are taken from published ethnographic sources. Shamans are males, but the women play an important role in choral singing during ceremonies.[67] Midwives are elderly women. Sorcery is a primary diagnosis for internal illnesses. An enemy, who is usually assumed to be a Madiha male in another village, magically introjects a caustic masculine substance, called dori, into the victim. The dori hardens into a stone, and may eventually cause death. Shamanic treatment attempts to remove the stone. Dori is also what makes men brave and "wild", as opposed to women who are "tame" and nurturing.[67,77] Illnesses on the skin or other external illnesses may be caused by physical contact with a harmful object or animal, such as a cut or an insect bite. In this case, rubbing the location with strong smelling plants or strong smelling industrial products is a standard treatment.[67] Small children are particularly prone to epetuka'i illness, which is caused by parental violation of taboos, such as food taboos.[67]

As observed by the researcher, there is a resident lay health

monitor in every village, who is always male and receives a modest government salary. The monitors have little to no training in biomedicine and, according to the medical mission workers, are not always called upon by villagers in cases of illness. The monitor is equipped with some basic over-the-counter medications and a small supply of gasoline to transport patients to the town if necessary. Pregnancy and childbirth are the domain of women and the midwives, thus the monitors do not participate.

Research ethics

The main research was conducted for a doctoral dissertation in medical anthropology at the University of Pittsburgh.[9] The doctoral research was declared "exempt" by the Institutional Review Board of the University of Pittsburgh, reviewer: Nicholas Landolina, IRB # PRO08120207 [e.g., see 65].

In addition, informed consent was obtained in written form from the regional Indigenous Health Care administration. At the time, this was Mr. José Carlos Pereira Lira, FUNASA regional coordinator for Acre, and from nurse Neiva da Silva e Silva, administrator of Pólo Base de Saúde Indígena de Manoel Urbano.

The researcher also obtained informed consent verbally from individual interviewees prior to interviews, and by the villagers at village meetings prior to observations [e.g., 51, 66]. Participants are not named in this article [e.g., 51].

The behaviors observed for this article were all public behaviors. The observed health procedures were carried out in a public space with a large number of onlookers, that included villagers, staff and boat crew, in addition to the researcher. Very few health procedures were private (e.g., cervical cancer screening) and the researcher did not observe or attempt to observe those procedures. Instead, he relied on the nurses' descriptions and opinions [e.g., see 65]. The ethnographic literature confirms that health concerns are a community affair for Madiha, and healing ceremonies are public and involve the community.[67]

Consequently, there was no apparent invasion of privacy and the researcher did not impose a presence or role that was different from that of other onlookers, with the exception of registering some actions with a video or photographic camera. Even so, this behavior was not extraordinary as the nursing staff also took photographs of their work for their own reports.

Data collection methods

The objective of the article is to infer premises or assumptions about health and health care that underlie the behaviors and

interactions of health care workers with the patient population [e.g., see 59,60].

For this article, the main instrument was the observation of behaviors, in particular the interactions between staff and patients. The secondary instrument was the conversations and interviews with the staff. The main variable considered was the degree to which health care actions required transported knowledge and resources, including human resources. The main indicators being the potential independence of the knowledge and resources from the location of delivery, and the role assigned to local knowledge, resources and personnel [e.g., 61,62,63].

The findings presented here focus on a single issue that emerged from a larger research study that aimed to analyze how biomedical health care workers perceived their agency to work in an intercultural health care context.[9] The data presented here is a subset of the data obtained from the larger study. The purpose of isolating a subset of the data is to focus analytical attention specifically on the clinical encounters between health care professionals and patients as signifiers of the general approach to health and health care implemented in the medical missions.[64]

The principal research for this article was conducted by accompanying three medical mission trips, during which the researcher lived on the boat with the health workers and shared all living spaces with them. He shadowed them as they worked and rested [e.g., see 66].

The main data collection method relevant to this article was passive observation of the health workers carrying out health procedures with patients. Three techniques were used: short film recordings, photographs, and direct naked-eye observations registered in a journal.

The main justification for using observations was to register behaviors. The intention was to determine regularities and patterns in the health workers' behaviors when interacting with patients, focusing on the clinical encounter for this article.

The researcher carried out the film recordings and photographs, and obtained consent prior to shooting. The recording technique consisted of remaining standing near the interactions without interfering or participating, only witnessing the actions. The types of interactions were selected for their representativity, registering samples of the whole range of procedures carried out by the staff. The film recordings demonstrated interactions, procedures and roles. The photographs were useful to reveal relative roles, spatial layout and positioning.

As a research method, the use of visual records (such as videos, photography) has received some critique in the literature, for instance, as a colonial medium of museumification or for photogenic montage of subjects and actions [e.g., 68]. In this research, however, none of the recorded actions were staged, there was no purposeful composition, and the selection was based on a convenience sample of representativity of the range of clinical interactions. The researcher did not interfere with or direct any of the actions.

Interviews were a complementary data collection method. These mainly consisted of informal unstructured conversations with participants during the trips, bringing up certain topics and questions depending on the convenience of the occasion. Some formal semi-structured interviews were also carried out in the office in Manoel Urbano town, between trips.

As a research method, the interview technique has been discussed and critiqued by some authors. The researcher recognizes that the quality of his relationship with the participants, their personal contextual and biographical conditions, contextual issues of the setting, and other elements may affect the co-production of meaning and responses in the interview encounter. Many of the responses, though, were repeated by participants when questioned at different opportunities and in their conversations among themselves, suggesting reliable representativity of their responses in interviews [e.g., 65,66,69].

The main justification for carrying out interviews was to complement observations with respondents' own opinions about their behaviors and their work, as well as their views and values regarding diverse aspects of their work, their relationship with the patient population, their experience and biography, and to obtain some information about past events and circumstances.

The formal interviews were carried out in private in a room in the office. Informed consent was obtained prior to the interview. The interviews were recorded, with the recorder remaining visible on the table in full sight of the participant. The interview guide and journal were also kept on the table and in full sight. The language of interview was Portuguese. An interview guide included some prompts, and respondents were encouraged to speak freely about these prompts. The interviews ranged in duration from 21 minutes to one hour. The interviewees were the staff living permanently in Manoel Urbano: nurse, dental and nursing assistants, and boat crew. As the researcher had already participated in trips and other interactions before the formal interviews, it is expected that participants were at ease and adequate rapport had been

sufficiently established previously [e.g., see 65].

The informal interviews or conversations occurred during the trips and also in Manoel Urbano. The researcher usually approached the staff during relaxation moments. Informal interviews were not recorded and were framed as casual conversations. The responses were recorded later in writing in a journal. Unlike the formal interviews, the conversations mostly focused on a single issue or inquiry at a time, involving a short and quick interaction. Some information was also obtained during other conversations, for instance, when initiated by the participants as part of their daily friendly interactions with one another and the researcher.

There was also some degree of participant observation, as the researcher shared the living spaces and some activities with participants. He traveled on the boat, sleeping, eating, bathing and spending all of the time with the team. The researcher assisted with some tasks, such as carrying loads, and also participated in recreational activities. There was a lot of conviviality among the team members, among whom the researcher felt very welcome and at ease, generating adequate levels of rapport to carry out the research tasks unobtrusively. Most of these daily informal interactions and events, and reflections, were recorded in a field journal [e.g., see 55,56].

The researcher held a few unstructured short conversations with some Madiha individuals, mostly the lay health monitors who were fluent in Portuguese. These were not especially extensive or in-depth, and were more focused on the monitors' tasks, training and expectations.

In order to acquire updated information, the researcher conducted two interviews in September 2020 using social media (whatsapp®). One interview was with the head nurse and the other was with a nursing technician, who are by now long-term staff, residents in Manoel Urbano, and whom he met during fieldwork. He asked a structured set of specific questions, exclusively focused on the issues raised in this article, requesting information about delivery since 2010 to the present. The interviewees responded briefly to each question in writing and with some audios. They spontaneously added some other pieces of information about the work, setting, population, and some health actions and logistic improvements. The nurse also spontaneously sent the researcher a number of photographs and short videos, which show some of these logistic improvements, as well as examples of the health care work. These photographs form part of the aforementioned continuous photographic log that the workers carry out of their health actions. These photographs taken

by the workers repeat the same kind of photographs taken by the researcher, demonstrate the same kind of positioning and roles he observed, and support the findings he concluded from his photographs and film recordings.

It may be worth noting that the nursing professionals have such a fundamental role in the type of delivery studied, that the researcher approached them right away for updated information in 2020. The nursing staff were "key informants".[56] They have a distinctive view of the phenomenon due to being hierarchically intermediate workers, demonstrated mediatory abilities in their interactions, and consistently exhibited goodwill to assist the patient population and the researcher over the years.

Analytical approach

Analysis for this article is mostly inductive. The attempt has been to distill underlying values or principles on the basis of the observed behaviors and participants' narratives. The analytical focus was placed on repeated and recurring behaviors and interaction modes, which were also the prevalent type of behavior observed [e.g., see 51,61,65,70].

Due to the repetitive nature of the behaviors and somewhat consensual stance of the health workers regarding their work, it seems justifiable to assume that there were shared underlying principles guiding their actions and opinions. The majority of interactions seemed to follow recognizable patterns, especially during health procedures. Health procedures were also the majority of the interactions with the patient population, as the team spent as much time as possible during the day performing procedures, though team members also mingled with the villagers for some of their leisure and relaxation activities (e.g., ball games).

The descriptions of behaviors presented further below in the article provide a summarized and synthetic general representation [e.g., 70], focusing on the recurring behaviors. Visual data was used primarily to identify the behaviors, and also their relative frequency. In turn, information obtained through interviews and observations inform the descriptions of the ideological elements that characterize the health workers' approach towards the villagers' health status and native medical resources. (Examples of singular detailed descriptions of a particular day or activity, and interview excerpts, can be found in [9]).

Research results: Underlying premises and effects of delivery

Succinct statement of argument

The core argument of this article is as follows:

The researcher proposes that the medical mission delivery described here is supported upon two premises: 1) health care is a transferable good or service; and, 2) health is a condition that requires imported knowledge and resources. These presumed premises were not clearly recognized explicitly by any actor, but seem to underlie the practices and approach. These two premises were induced based on observations and interviews.

It is suggested here that these two premises each result in an observable effect: 1) the notion that health care is a transferable good or service is, at least partially, what leads to a chronic perception of insufficient staff and resources; and, 2) the notion that health requires importing foreign knowledge and resources is, at least partially, what reinforces cultural barriers that obstruct patient adherence.

As for these alleged effects, interviewees did explicitly mention these as constant problems. They constantly pined over insufficient staff and resources, and they recognized the existence and relevance of cultural barriers. Yet, while interviewees seemed to perceive them as self-sustaining conditions, this article proposes considering them effects of the delivery format.

That is, with this article, the researcher has organized the data obtained from varied observations and interviews into a causal analytical model. On the one hand, participants recognize certain recurring issues of health care delivery insufficiency or inefficacy as serious problems, but they tend to think that their causes are external to the actual delivery, emerging from structural factors of the setting (such as, its remoteness and the cultural differences). On the other hand, by examining the delivery practices themselves, the researcher instead proposes an alternative causal link (though not exhaustive) with such practices. Consequently, rather than contribute to solving the recognized problems, the delivery practices potentially exacerbate them.

The theoretical complement proposed here is to draw attention to the structural factors of the delivery format itself as a potential iatrogenic source of health care inefficacy, and not just attribute insufficiencies to the availability or quantity of resources, which is how the health care staff think about their problems.

The objective of this article, then, is to propose this analytical model by suggesting causal links between information and facts that seem unconnected to the participants. For this reason, the article moves the discussion from empirical data

into inferred premises that seem to underlie the structure of the delivery format.

The way that such alleged effects of the delivery format eventually contribute to the low improvement of health indicators also implies two mechanisms: 1) the reliance on imported goods and services leads to a neglect of the improvement of local conditions that cause health problems or which may improve health status; and, 2) patients are reluctant to comply with foreign medical recommendations that they do not share or which they understand differently.

The following sections present each of the elements of this argument, providing the empirical support and detailing the connections.

Premise 1: Health care is a transferable good or service

The medical missions researched here supply health care as a literally deliverable good or service. The fieldwork shows that health care is provided as a compact bounded set of procedures that are fully detached from any locally habitual tools or behaviors. It is a self-contained commodity that has no metonymic association with any local individuals, relations or objects.

The following is a brief description of how this product or service is executed, according to the researcher's observations. There are four salient observable features that characterize the professionals' health care actions: a) assembly line arrangement, b) concentration on execution of procedure, c) focus on specific body part, and d) minimal or no communication with the patient.

a) The assembly line organization maximizes space and time constraints. The professionals set up their equipment in the same room, creating three independent stations. Patients are then propelled consecutively from one station to the following. This assembly line arrangement creates a constant flow of patients that facilitates universal coverage. There is practically no individuation or differentiation of procedure between patients. With this delivery format, biomedicine is presented as a set of identical technical procedures to which all village residents are consecutively submitted.

b) The professionals spend almost all of their working hours focused on the exclusive performance of required procedures, statically posted at their respective station. There is strong pressure to perform as many procedures as possible within a short time frame. There is little opportunity for performing unplanned procedures or distractions, and no option to delegate procedures onto another worker.

c) At each station, professionals perform only a restricted set of actions. Coupled with the assembly line formation, this steers professionals to an engrossed repetitive and circumscribed focus on specific body parts, one patient after the other. For example, comprehensive immunization coverage is achieved in a short span of time through a highly mechanized process in which the nursing technician is mostly concentrated on filling needles and pricking arms, one after the other, as the line of villagers flows past her.

d) The mechanization of delivery allied with the linguistic barrier make most health care interactions silent encounters. The silence amplifies the focus on mechanical procedure, and fosters a very fragmentary and partial knowledge of the other party. Many Madiha do not understand Portuguese and none of the professionals have any relevant fluency in Madiha language. The professionals who reside in the nearby town have learned some isolated Madiha words and commands that are relevant to their tasks. For instance, they know words such as “man”, “woman”, “come here”, “open your mouth”, and so on. However, they cannot carry out any meaningful conversation or construct a single complete sentence in Madiha language. Newly arrived professionals learn these words from their colleagues and do not pursue further language learning.

Medical consultations constitute the exception to the pattern of silent health care interactions. They primarily consist of verbal interrogation. Yet, there is almost no direct communication between the physician and the patient, and the conversation flow is vectored. Patients do not speak much during consultations. They mostly only answer questions, and usually only speak with the interpreter. The interpreter is usually the village lay health monitor, who does not have any specific training in medical interpretation or in biomedicine.

Consequently, health care is delivered as an impersonal product that is distributed in an identical manner to each patient through a set of fairly uniform procedures. It is composed of discrete set of mechanical procedures repeatedly performed on distinct body parts, one patient after another in an assembly line fashion. Procedures are performed perfunctorily. Minor adaptations are mostly according to the patient’s frailty or resistance. The procedures are usually silent, as there is virtually no verbal communication between patients and workers.

Effect 1: The chronic perception of insufficient staff and resources

It is proposed here that the premise that health care is a transferable good or service, at least partially, leads to a

chronic perception among staff that the medical missions suffer from insufficient staffing and resources. That is, the perception of insufficient resources is a distortion that is produced by the delivery format itself.

In regards to the perception of understaffing, according to the researcher’s observations and interviews, most of the mission teams truly were incomplete for most of the time. However, a precision is required. The mission teams did not suffer from generalized understaffing. Rather, they suffered from understaffing of two specific positions: physician and dentist. The teams frequently travelled without a physician and most of the trips did not have a dentist. The other posts (i.e., nurse, assistants, boat crew, cook) were well staffed. Thus, there was a chronic insufficiency of only physicians and dentists.

Yet, because the medical and professional orientation of the delivery model awards those two posts a primary status (in terms of hierarchy, decisions, etc.), their persistent understaffing was perceived as a fundamental obstacle to delivery. The impact of their vacancy was always strongly felt. These two posts were charged with core functions of the mission service. As explained to the researcher, they are the two highest-ranking positions and are assigned the principal medical duties. Meanwhile, the teams always travelled with a sizable number of other competent health care staff, such as nurses and assistants, and supplies, but these were underrated due to the approach.

With the current staffing organizational design, all of these posts are dead-end jobs. Due to the way that the Indigenous health care system in Brazil is structured, there is no opportunity for career promotion or diversification in this delivery model. Thus, the researcher learned that medical mission work was unattractive to professionals seeking to make a career and only retained workers who sought local residential stability. The physicians and dentists on the trips were all recent graduates, who quickly moved on to other employments, and they expressed in interviews why they saw this only as temporary employment. Consequently, the lack of career paths made recruitment and retention attractive only to nearby residents. This rendered the peculiar staffing pattern of the teams a chronic problem. The subordinate positions of nurse, nursing assistant, dental assistant, and boat crew were always well staffed. Town residents wanted to commit to the job as a long-term prospect and filled these positions. In contrast, in the years surrounding the research, only young fresh graduates applied for the posts of physician and dentist. There was a very high turnover rate, as observed between trips, recounted in interviews, and recognized by the administrators that were interviewed. Generally speaking,

physicians and dentists did not want this job as life-long career, as they expressed in interviews. Thus, the delivery model is incongruent with the supply and demand conditions for employing physicians and dentists, leading to a chronic situation of understaffing.

Additionally, this staffing problem placed an extra burden on the nurses, who were required to carry out additional (unpaid and unrewarded) duties during the trips without a physician, such as medical consultations and clinical decisions. It is reasonable that the regular staff would feel the brunt of this problem. Nurses' routine duties are already onerous. As observed during the trips and in conversations with a nurse, their regular duties include carrying out an assortment of interventions, such as immunization, pregnancy screening, growth and development assessment, nutritional surveillance, and supervising the nursing assistants who also perform these tasks. The nurse also is the trip manager, who organizes the scheduling, task distribution, control of stocks and supplies, purchases, and so on. The nurse is also the primary mediator between the team members and the villagers. One nurse is a stable figure from trip to trip. Villagers make all sorts of tangential and personal requests through her, such as assistance with government documentation, help with purchases, and so on. Thus, the nurse is a pivotal figure in the particular configuration of relations with the villagers that exceeds not only her specific nursing duties by requiring her to assume other types of circumstantial health care tasks on occasions, but also more generally by helping the villagers in their dealings with the national society and the government.

In regards to the perception of insufficient resources, this article suggests that this impression is induced by the complete reliance on imported technologies and resources. The workers' frustration would be a result of their dependency. Their distorted perception is a consequence of evaluating traveling mission delivery according to the standards of stationary urban delivery, though this comparison could be questionable. Several workers explicitly expressed to the researcher that they desired the boat to operate as a sort of mobile clinic. They wished that the boat was stocked with all the tools and resources typically found in a stationary neighborhood primary health care clinic. Also, several workers considered ideal the eventual installation of a permanently staffed and equipped stationary health post in or near the villages. Thus, it would seem that these workers perceived their medical missions as a rudimentary and incomplete form of delivery. Consequently, they expressed a constant lamentation of insufficient resources.

That is, the workers were measuring or evaluating the quality of

their delivery against the standard of an urban clinic, abstractly and without contemplating the particular context and network facilities typically available for an urban clinic. The workers seemed to want to replicate the urban delivery model, but just relocated into the villages or floating on the boat. Thus, they always perceived delivery as deficient, because it always lacked core elements of urban delivery (such as certain staff and resources). Alternatively, a different way of evaluating their delivery could be proposed based on how their resources and capacities fit into the conditions of the target location and facilities, i.e., the congruence with the local context.

Premise 2: Health is a condition that requires imported knowledge and resources

These medical missions provide a form of health care that relies on the importation of all knowledge and resources. The health work is carried out in a way that seems to suppose that health (or, at least, certain types of healing and prevention) cannot be achieved with local resources and cannot be grounded in the current local conditions.

The medical missions conform to the fundamental disposition of so many other types of missionary enterprises, such as religious. In general, missionary activity typically presumes that there is a lack of soteriological resources in a given location and, consequently, missionaries are charged with transporting and delivering such resources to the deprived population. In this research, the health workers saw themselves as trustees of the Madiha population's health, and openly said so in interviews.

The following is a brief description of how the observed delivery format prioritizes imported (i.e., non-local) health means and ignores local health resources. There are three salient observable features that characterized this format of imported health means: a) ideological supremacy of biomedicine, b) subordinate status of local resources, and c) medical segregation.

a) The entire enterprise of the medical mission delivery that was researched is imbued with the certainty of the ideological supremacy of biomedicine. This is evident in the exclusion of Indigenous healers and their practices, but it pervades the activity in more subtle ways. The truth-value of biomedicine is entrenched in the health workers' subjectivities, such that it influences their interpretation of events and issues. For instance, a nurse once praised their work by telling the researcher how the teams "take health" to the villages. Her statement illustrates the assumption that health is perceived to be a transportable good, and also that health does not fully

exist in the delivery location.

b) The missionary delivery that was studied involves a hierarchy of resources and knowledge. Generally speaking, local knowledge, resources and personnel are subordinate to their imported or external counterparts. There is a generalized neglect or disregard of local knowledge and local resources. The overall pattern is that the people with the closest and fullest understanding of the location and target population are subordinate to people with less or no experience of the setting. That is, the people with the least first-hand knowledge or direct local interests occupy the highest hierarchical positions.

This pattern of hierarchical subordination pervades the biomedical organizational structure. Firstly, all of the workers are subordinate to the administration, which is located in the capital city and has very little contact with the target population and only a certain degree of interaction with the health workers. Secondly, the personnel who live permanently in the nearby town and who have accumulated experiential knowledge are subordinate to incoming young professionals who often only have knowledge acquired in the university and whom stay for short periods of time due to high turnover. Thirdly, the target population's own medical knowledge, resources and practitioners are entirely excluded from participation in the delivery of the health care.

c) There is a state of segregation between the Indigenous medical system and biomedicine. Although in interviews the health care workers and administration staff recognized the existence and legitimacy of the Indigenous medical system, and did claim that it has its scope of efficacy, in practice, the Indigenous system plays no practical role in the medical mission's health care delivery. The two medical systems coexist side by side in a state of mutual exclusion. There is no support or collaboration between the Indigenous medical system and biomedicine. The team does not considerably discuss health and disease issues with the shamans and midwives, they do not concord to share responsibility for patients' health, and the village healers are not trained or introduced to biomedical concepts and practices. Conversely, the biomedical workers do not participate in the Indigenous healing rituals and do not know much about them. The health workers have only a bare understanding of the Indigenous medical system and have never shown an interest in increasing their knowledge. Their standard strategy is to ignore Indigenous medicine.

Effect 2: Importation reinforces cultural barriers that obstruct patient adherence

It is proposed here that the premise that health requires

importing foreign (i.e., non-local) knowledge and resources reinforces cultural barriers that obstruct patient adherence. In this particular setting, biomedicine does not match the legitimacy of the Indigenous medical system. It is a minority medicine in this context. Madiha make constant use of their own medical system and only resort to biomedicine after failed persistent recourse to the native methods, as the researcher observed in some cases and learned from the health workers.

This article does not intend to romanticize the Indigenous medical system, which was not studied directly. Rather, the starting point to be made in this section is that biomedicine is a marginal medical system from the patients' perspective in this particular setting, and cannot count on the type of taken for granted legitimacy that it has in other locations. This was not always entirely obvious to all of the workers, who were all evidently convinced of the utility of their own medical practice. For instance, the idea that there is more than one type of medicine was a novel idea for one physician. He seemed genuinely surprised when the researcher pointed out to him in a conversation that the term "Medicine" that he was using only applied specifically to biomedicine. The physician had been using the word "Medicine" exclusively to refer to biomedicine, as if it were the only medical system. This conversation was also surprising for the researcher, who had imagined that the physician would be aware that the patient population had its own medical system that could also be described with the word "Medicine". Overlooking this legitimacy difference is part of the delivery problem.

Due to total importation, biomedical practices are unrelated and detached from the patient population's daily routines or healing practices, as far as the researcher could ascertain, such that there is no obvious connection between the imported practices and the population's habitual practices. Equally, the knowledge grounding of the biomedical care offered to the population is also unrelated to their cultural knowledge or to their social environment. This is possibly a significant reason why patients show low adherence to professional recommendations and treatments.

Certain biomedical practices also appear to run counter to Indigenous medical understandings. For instance, ethnographic sources state that Madiha are reluctant to take pills because they believe that medications are transformed by the body's digestive system.[67,77] Similarly, the researcher noted that pregnancy and childbirth is the domain of women from the kin group, which automatically excludes consulting with unrelated male physicians.

It was observed that the health workers make no use of the

patients' own health knowledge. There is no attempt to render biomedical knowledge comprehensible or approachable to the patients by using terminologies, concepts or practices that are accessible to them. Health workers make only a bare attempt to explore and comprehend the population's own etiological understandings regarding disease. The workers only know that Madiha attribute many diseases to sorcery (dori) but they do not know the particulars of such etiology, such as causation pathways or the details of Indigenous treatments. The workers also do not know in which cases Madiha attribute disease to other sources, cited in ethnographic sources, such as contagion.[67,77]

It was observed that biomedical procedures and explanations are presented to patients in cognitive terms that are generally foreign to them. If there is any potential indigenization or appropriation of this knowledge by the patients, it is a process that occurs independently from the health workers, and of which the workers (and researcher) are unaware. The workers do not really know what the patients understand, how the patients understand, or what the patients make of the information and practices they are exposed to.

Due to the travel schedule of the team, biomedical delivery is a regular, but infrequent, event for the Madiha. As a consequence, most Madiha have only sparse contact with biomedicine. It is a bounded episode that interrupts their habitual routines for a day or two every month or so. They experience biomedicine through only a small restricted set of procedures. It is presented to the patients as a self-contained independent and circumscribed set of practices.

Additionally, biomedical workers only communicate in Portuguese, reinforcing the foreigner status of the medicine. The health workers do not make any significant use of Madiha language in their communications with patients. It was observed that patients are spoken to in Portuguese, and using Portuguese vocabulary for ailments, symptoms and other factors. The workers know very few words and phrases in Madiha. They admitted to the researcher that the language difference makes communication difficult. Yet, they show no attempt to learn the language to any meaningful degree. The use of untrained interpreters increases the vulnerability of the communications. There is no monitoring, evaluation or training of interpreters. The health workers do not know how the interpreter is transmitting information to patients, nor if the patients' responses are being transmitted back to the workers satisfactorily.

Discussion: Program continuation and suggested reorientation

In July 2017, the health care team was able to fulfill the aspiration of having a permanent health post set up in one of the Madiha villages. This new building has simplified some of their work, primarily avoiding the constant transport of heavy equipment and certain supplies, and providing a single stable location for sleeping and resting while they are in the Indigenous territory.

There are many improvements with this health post. As emerged from the update interview with the nurse and some photographs she shared, the team now has an ample and well-built location for carrying out health actions. They have access to better space, more hygienic conditions and solar-powered electricity. They can maintain the vaccines refrigerated. They have desks, several rooms, some laboratory equipment, and so on.

Their leisure and recreation conditions have also improved. Instead of being cramped on the boat, they have more comfortable spaces for cooking, eating, sleeping, bathrooms, and so on.

Thus, the new building has made the working conditions more comfortable for the staff. This may eventually impact the long-term delivery problem of insufficient staff and resources, as larger and more permanent equipment can be gradually incorporated, and improved working and resting conditions may make the work less strenuous and require less heroism.

It remains to be confirmed to what extent the new building will significantly impact the health indicators or patient satisfaction. The fundamental orientation of the delivery approach is unchanged in this new hybrid arrangement. The work still requires the importation of knowledge and resources, and continues to be culturally distant. The basic conceptual underpinnings of the delivery format that have been presented in this article endure. The health post does not substantially modify the underlying premises of delivery, though it is a step in the direction of developing infrastructure.

Continued focus on procedures

The focus of the work continues to be the fulfillment of an established number of technical interventions. The work is still concentrated on the same limited set of procedures and techniques as before. As mentioned before, biomedical presence in the villages is a restricted set of actions.

The nurse spontaneously provided the researcher with photographs from recent years. They show the same kinds of procedures, arrangements, and interactions that the researcher had registered earlier. Thus, the actual health care behaviors and interactions have fundamentally remained the

same. Some of them are now carried out in the health post, and many are still carried out in the villages following the same layout and equipment set up that had been observed before, as the nurse explained.

It is possible that the framing of the health actions as institutionally based and not emergent from the villagers' home setting may have been intensified. Previously, the team members would spend all their time in the large boat while anchored at each village. Now, the team individually visits each village during the day using small boats exclusively to carry out health procedures and then returns to the building in the evening. The team members now sleep and take most meals in the new building. So, there is a stronger physical dissociation between work and leisure. They go to the villages to work, while domestic and informal activities are carried out in the new building.

Additionally, as the nurse explained, some procedures are now no longer carried out in the other villages as some equipment is set up permanently in the post. That is, villagers are now required to go to the post for some procedures. This is the case for some dental procedures and some screening tests.

Dependency on the presence of the team

The dependency on the traveling team to carry out biomedical health actions and to use the equipment and resources persists. During the weeks when the team is not there, the health post does not provide care. The nursing technician confirmed in her update interview that the health post remains closed. The nurse explained that the lay health monitor only goes there to regularly check on the functioning of the equipment, such as the freezers.

The nurse and nursing technician both confirmed that the lay health monitors and lay sanitation monitors still do not receive formal training. Their major form of learning comes from advice spontaneously provided by the team members.

Medical segregation and cultural distance

The pattern of medical segregation persists. The nurse and nursing technician confirmed that the biomedical team is not involved with the Indigenous medical system. The nursing technician said that the team members are not invited to the village curing rituals, which are usually held at night. She says she only once participated in a ritual.

A significant indicator of persisting cultural distance is the scarcity of language proficiency improvement. The team members, including the few with a now long-term presence, have not pursued or progressed with language learning. The

nursing technician said that one of the main problems they continue to face is language. She said that Madiha women don't speak much Portuguese, and their husbands translate for them during medical consultations. Even so, she feels that the team's knowledge of Madiha language is sufficient. She says that it is basic, but enough for procedures. The nurse explained that they know some relevant terms relating to the illnesses and procedures, but they cannot hold a conversation.

Incipient move towards stationary primary health care clinic model

The opening of the health post suggests that the conceptual orientation of future delivery is to gradually evolve away from medical mission delivery towards providing health care from a permanent stationary primary health care clinic.

This may satisfactorily address some of the perceived problems of delivery, and it seems to be congruent with the expectations and preferences of the health care staff. Their desire to replicate the urban biomedical delivery model was a permanent trope during fieldwork. It is possible that the problem of having sufficient and adequate equipment, and stabilizing the staff turnover rate may be improved.

The nursing technician said that the problem of constant staff vacancies and insufficient materials has improved in recent years. When the researcher specifically asked her about impact of the new Jair Bolsonaro government on Indigenous health care, she named logistic improvements. She said that they have received more equipment, including outboard motors, and the new health post building.

Regarding staff stability, this has also improved. Although staff turnover continued over the years, including nursing and dental assistants, the nurse informed that the team was complete at the time of the update interview. Importantly in reference to this article, there has been a stable physician since 2015 (i.e., for five years), according to the nurse. The physician arrived through the "More Doctors Program" (Programa Mais Médicos). The program existed from 2013-2018.[78,79] It primarily employed Cubans. In 2018, out of a total of 372 physicians employed by the government to work for the Indigenous Health Care Department (Secretaria Especial de Saúde Indígena) all across Brazil, 81% (n=301) were Cubans.[80,81] The new Jair Bolsonaro government changed their work authorization conditions, leading to an abrupt removal of the majority of them, triggering a widespread crisis in Indigenous health care in various parts of Brazil.[80,81,82] However, although she received her medical degree in Cuba, the physician working with this particular team is a Brazilian

national and she remained in the post, as the nurse explained. The nursing technician said that the current dentist has been working with them since 2018 (i.e., for two years).

In response to the observation that the health post is closed when the team is not traveling, the nursing technician thinks that the solution would be to duplicate the workforce. Her idea is that there should be two teams that would alternate in the field. That way, there would always be at least one team in the villages.

Thus, it seems that there is an emergent reorientation of the delivery model that would consist of replicating the model of the stationary clinic, through a permanent presence in one of the villages. However, the nurse said that the villagers were reluctant to go to the new post, and that's why the team still had to go out daily with the small boats to each individual village. That is, the apparent forthcoming delivery model still does not capitalize on local resources and persons.

Suggestion for reorientation based on supporting local infrastructure development

Considering the two premises on which medical mission delivery appears to be based, it is possible to propose in this article a reorientation of the delivery model that would award a more active status to local resources and conditions by grounding delivery on opposing premises. This alternative is proposed for medical mission delivery, but also in case of the eventual consolidation of a permanent clinic. The intention of an alternative orientation is for the villagers to become less dependent on the presence of external resources and workers, and increase their access to care in their home locations. Namely, the traveling teams could supplement their work by awarding a more fundamental role to: a) local health care resources and conditions; and, b) local health knowledge and practices.

Notably, convergences between the health care workers and the local population's culture and values have only been spontaneous, either stemming from the health workers' interests or from the initiatives of other sympathetic third agents. Despite the explicit policy directives,[2] there has been no programmatic implementation of a system that stimulates such convergences. Two examples of convergence can be cited here. For instance, the nurse recounted that an NGO organized an event in 2018 in the new health post during which the Madiha shamans and midwives showed the biomedical team some of the herbal plants they used, and participants learned to recognize the plants in the forest. A second example occurred in 2016 in which a researcher

invited Madiha shamans, midwives and lay health monitors to meet with all nursing staff that worked in a nursing facility for Indigenous patients in the city of Rio Branco, capital of Acre state, in order to share with them some of their understandings, preferences and claims, in a limited intervention designed to increase the nurses' cultural competency for working with Indigenous patients.[83,84] Both examples were isolated efforts that were well received by the nursing staff, but are not built into the delivery structure in any formal or enduring way.

In the history of medical mission delivery for the Madiha villages contemplated in this article there was a period during the late 1990s in which an indigenist NGO, called the Comissão Pró-Índio do Acre (CPI/AC), provided biomedical health care to the villages.[22,23,24,25] Their medical missions had some relevant differences with the services described in this article, and are illustrative as an alternative model. Although they did not work in collaboration with the village healers or as supports to the Indigenous health system, they did place priority on addressing public health issues, improving local infrastructure, and provided training for the lay health monitors. They also made an attempt to bridge biomedical knowledge with Indigenous understandings, and to learn about the Indigenous medical system.

The CPI/AC team was aware of the problem of the limited acquaintance and legitimacy of biomedicine in this context. For instance, a report from 1999 recounts that "the Kulina practically didn't approach the health team for care. It was necessary to visit every house in the village to see if anyone was sick".[23 p15]

There are three elements that distinguish the CPI/AC approach that can be gleaned from their reports and from the testimony of Madiha in interviews: 1) coordinated multiple fronts of action, 2) focus on the lay health monitors and, 3) social and cultural analysis of health conditions.

1) In regards to the coordinated fronts of action, there were three fronts: medical missions to the villages, lay health monitor training courses, and the promotion of rudimentary infrastructural changes to improve hygiene and sanitation in the villages. These three fronts were interconnected at the level of planning and execution, and carried out by the same staff.[22-25] This kind of coordination no longer happened when the government took over.

2) The focus on the resident lay health monitors was a key element. The monitors were the core focus of the program [22,23,24,25]. For instance, the CPI/AC report states that "medication was administered by members of the CPI-AC team and also the village health monitor in order to acquaint him with

the activity and to obtain legitimacy from the community”.[23 p6] The training courses instructed the monitors in community health promotion and disease prevention practices, as well as diagnosis and treatment of disease. Also, the courses did not only deliver biomedical knowledge, but also sought to elicit knowledge of the Indigenous medical system from the participants. In this way, the non-Indigenous participants learned about the Indigenous medical system.[22-25] The health team reported that “the Kulina did not know the names of body organs or body areas in Portuguese”.[22 p22] As has been stated in this article, in the current delivery model the lay health monitors have had practically no training and very reduced roles.

3) The project sought to obtain knowledge of social and cultural conditions related to health and disease. For this, each mission trip included an anthropologist. This professional examined the public health conditions of community life, such as living and hygiene circumstances, as well as other relevant features of the society and culture. This knowledge was used to plan future interventions.[22-25] Since the government took over, anthropologists or other similar social scientists do not systematically participate in the teams.

Due to a lack of data, it is not easy to evaluate the lasting health impact of the CPI/AC approach, compared with the later government services. Regrettably, comparative epidemiological data is unreliable, and it is not easy to obtain the opinion of health professionals working at the time, as most of them departed. Furthermore, as far as the researcher could uncover from their records, the NGO only conducted two trips to these specific Madiha villages.[23,24] Yet, twenty years later, when interviewed by the researcher, informants from the patient population tended to recall the CPI/AC interventions as the better ones. This, at least, implies higher levels of satisfaction. Notably, this was a shared opinion among the lay health monitors, who were the key targets of the CPI/AC project.

The CPI/AC approach illustrates how an alternative delivery model could work. The health team members were concerned with analyzing the local infrastructure (housing, drinking water sources, etc.), food production system and diet, personal and domestic hygiene, leadership system, and learning about the Indigenous medical system.[23,24] The CPI/AC approach conforms to the strategy of trying to build up local resources, conditions, knowledge and practices, and to value the role of the resident lay health monitors. One report states that “we think that this type of work will require a medium or long-term period and must be in tune with the cultural characteristics of the group”.[23 p24]

Conclusion

This article has argued that the delivery of biomedical care provided by the Brazilian government to Madiha villagers in the form of traveling medical teams is itself part of the reason for the health workers’ persisting sense of frustration. The delivery model does not take into account village conditions or the cultural context. Furthermore, it does not provide much support for the development of local abilities to deal with health issues independently from the traveling health care team.

Delivery is primarily offered through a medical mission model, in which health care is conceived of as a transferable good or service, and in which health requires importing knowledge and resources to remote communities. The consequence of these underlying premises is that implementation of delivery leaves health workers with a persisting sense of insufficiency of staff and resources, and that they face a constant obstacle of cultural barriers.

Conforming to the ambitions of some of the workers, a permanent health post was built in one of the villages in 2017, though the style of the work has remained fundamentally the same since the health post is only operative when the traveling team is present, and most of the care still involves visiting each of the villages to perform an established routine of limited health actions. The health post has not reduced dependency on external resources and staff.

While the national policy for health care for Indigenous populations in Brazil mandates a culturally modified delivery, and one in which biomedicine takes on the role of complementary medicine,[2] in practice this is not how it is implemented. Instead, there is no tailoring and there is little development of local conditions for providing health care, for instance, by training the lay health monitors and by involving the Indigenous healers and midwives in the biomedical activities. In its place, the delivery format reinforces the foreign status of biomedicine and the dependency on external actors and resources to provide care.

Reflection on this type of delivery can be helpful to nurses and other health care agents in order to contemplate the extent to which their care may involve similar types of underlying premises. There is a risk that this type of care reinforces colonial types of imposition and unintentionally exerts structural violence.[21,38] The focus on the completion of established impersonal procedures, with a formulaic approach, and the pressure to accomplish as many procedures as possible within a limited schedule, may end up enhancing the perceived alienation of the patient population, already

grounded on cultural differences.

Medical missions per se are not the problem, as they certainly can provide resources and skilled professionals to help deal with certain issues. The concern is that biomedical care is being implemented as a disjointed and superimposed service, instead of being an integral and complementary element of the local (Indigenous) health care system. A reorientation of delivery could recognize local health care capacities, and could view health as grounded in local conditions. Similarly, instead of evaluating delivery against the standard of urban stationary clinics, as some team members seem to do, it might be more appropriate to evaluate the service in regards to its coherence with the specific context and conditions.

Health care delivery can be reorganized in several ways. Essentially, the goal should be to reorient or complement the work of the traveling team towards becoming a support for the development of the local health care infrastructure in a way that capitalizes on locally available resources, including the knowledge and prestige of the lay health monitors, shamans and midwives. The traveling teams should contribute to a long-term local capacity-building process,[39 p1450] following public health priorities that emerge from the analysis of the specific village context, and targeting a limited and specific problem or set of problems.[39 p1450]

The biomedical team would work with, and not independently from, the Indigenous health system. Importantly, the travelling workers should receive relevant training in the local culture, health issues, and language. With this, the health trips would not operate as intermittent foreign incursions, but as supports for the local means of health production. By providing support for the local (i.e., Indigenous) health system and infrastructural conditions, they would promote autonomy and local resolution. The teams could also lead epidemiological research specific for the location and help the community identify and develop health goals and program planning. Thus, the medical missions would work as an integral and complementary element of the local health care system, instead of providing a disjointed and superimposed service.

References

- 1.Langdon, EJ & Luiza Garnelo. Articulación entre servicios de salud y “medicina indígena”: reflexiones antropológicas sobre política y realidad en Brasil. *Salud Colectiva* 2017; 13(3); <https://doi.org/10.18294/sc.2017.1117>
- 2.Brasil. Fundação Nacional de Saúde. Política Nacional de Atenção à Saúde dos Povos Indígenas. 2a ed. Brasília: Ministério da Saúde. Fundação Nacional de Saúde, 2002.

- 3.Compton, Bruce. Short Term Medical Mission Trips: Research and Recommendations. *Health Progress* Sept-Oct 2016:33-36
- 4.Melby, Melissa, et al. Beyond Medical “Missions” to Impact-Driven Short-Term Experiences in Global Health (STEGHs): Ethical Principles to Optimize Community Benefit and Learner Experience. *Academic Medicine: Journal of the Association of American Medical Colleges* 2016; 91(5):633-638. DOI: 10.1097/ACM.0000000000001009
- 5.Montgomery LM. Short-Term Medical Missions: Enhancing or Eroding Health?. *Missiology* 1993; 21(3):333-341.
- 6.Martiniuk ALC, Manouchehrian M, Negin JA, Zwi AB. Brain Gains: a literature review of medical missions to low and middle-income countries. *BMC Health Serv Res* 2012; 12:134.
- 7.Crutcher JM and Beecham HJ. Short-Term Medical Field Missions in Developing Countries: A Practical Approach. *Milit Med.* 1995; 160(7):339-343
- 8.Suchdev P, Ahrens K, Click E, Macklin L, Evangelista D, Graham E. A Model for Sustainable Short-Term International Medical Trips. *Ambul Pediatr.* 2007; 7:317-320
- 9.Frenopoulo, Christian. The Referential Functions of Agency: Health Workers in Medical Missions to Madiha (Kulina) Indians in the Brazilian Amazon. PhD thesis, Department of Anthropology, University of Pittsburgh, 2012.
- 10.Gul, Raisa. Importance of Philosophy and Philosophizing for Nurses. *Silent Voice: First Independent Nursing Journal of Pakistan* 2009; 1:4-9.
- 11.Drummond, John & Paul Standish (eds.). *The Philosophy of Nurse Education*. New York: Palgrave MacMillan, 2007.
- 12.CORE/AC (Coordenação Regional do Acre), FUNASA (Fundação Nacional de Saúde), Ministério da Saúde. Relatório de Gestão 2008. CORE/AC – FUNASA/ Ministério da Saúde, 2008;
- 13.Consórcio IDS-SSL-Cebrap (Institute of Development Studies-Saúde Sem Limites-Centro Brasileiro de Análise e Planejamento). Modelo de Gestão da Saúde Indígena. Julho 2009, 2009. Available from: Biblioteca Virtual em Saúde, Ministério da Saúde. http://bvsm.saude.gov.br/bvs/publicacoes/modelo_gestao_saude_indigena.pdf
- 14.DSEI ARPU (Distrito Sanitário Especial Indígena do Alto Rio Purus), FUNASA (Fundação Nacional de Saúde), Ministério da Saúde. Relatório de Gestão 2004. DSEI ARPU – FUNASA/ Ministério da Saúde, 2004.
- 15.DSEI ARPU (Distrito Sanitário Especial Indígena do Alto Rio Purus), FUNASA (Fundação Nacional de Saúde), Ministério

da Saúde. Relatório de Gestão 2005. DSEI ARPU – FUNASA/ Ministério da Saúde, 2005.

16. DSEI ARPU (Distrito Sanitário Especial Indígena do Alto Rio Purus), FUNASA (Fundação Nacional de Saúde), Ministério da Saúde. Relatório de Gestão 2006. DSEI ARPU – FUNASA/ Ministério da Saúde, 2007.

17. DSEI ARPU (Distrito Sanitário Especial Indígena do Alto Rio Purus), FUNASA (Fundação Nacional de Saúde), Ministério da Saúde. Relatório de Gestão 2009. DSEI ARPU – FUNASA/ Ministério da Saúde, 2009.

18. Evangelista AC, Leon MCL, Leitão MCdS, Silva NSd. A gestão da saúde indígena no DSEI Alto Rio Purus: análise de um processo em construção. Monografia (Especialização em Gestão de Sistemas e Serviços de Saúde), Departamento de Ciências da Saúde, Universidade Federal do Acre, 2006.

19. Dantas, Fernanda Lage. Perfil de morbidade da população indígena infantil referenciada para a Casa de Saúde Indígena (CASAI) de Rio Branco. Master's thesis, Faculdade de Saúde Pública, Universidade de São Paulo, 2010.

20. Calvacante, Inara Mariela da Silva. Atividade educativa para o desenvolvimento de competências culturais de enfermeiras(os) que atuam na saúde indígena na Amazônia paraense. PhD thesis, Escola de Enfermagem, Universidade de São Paulo, 2020.

21. Teixeira, CC and C Dias da Silva. Indigenous health in Brazil: Reflections on forms of violence, *Vibrant: Virtual Braz Anthr* 2019; 16:e16204, <https://doi.org/10.1590/1809-43412019v16a204>

22. CPI/AC (Comissão Pró-Índio do Acre). Relatório do curso de agente de saúde. Período de 03 outubro à 20 de novembro/98. Projeto Capacitação de Agentes de Saúde em Higiene e Saneamento Ambiental. Rio Branco: MS, 1998.

23. CPI/AC (Comissão Pró-Índio do Acre). Projeto Capacitação de Agentes de Saúde em Higiene e Saneamento Ambiental e Assistência Primária de Saúde. Dezembro de 1999. Rio Branco: MS, 1999.

24. CPI/AC (Comissão Pró-Índio do Acre). Programa de saúde: Sujo, Limpo & Contaminado da Comissão Pró-Índio. Projeto Capacitação de Agente de Saúde em Higiene e Saneamento Ambiental e Assistência Primária de Saúde. Relatório de Viagem à Terra Indígena Alto Purus. Período de 02 de abril a 02 de maio de 1999. Rio Branco: MS, 1999.

25. CPI/AC (Comissão Pró-Índio do Acre). Programa de Saúde: Sujo, Limpo & Contaminado da Comissão Pró-Índio. Relatório de Curso de Formação de Agentes de Saúde. Período de 10

de maio à 10 junho/99. Projeto Capacitação de Agentes de Saúde em Higiene e Saneamento Ambiental e Assistência Primária de Saúde. Rio Branco: MS, 1999.

26. Brasil. Fundação Nacional de Saúde. Lei Arouca: a Funasa nos 10 anos de saúde indígena. Brasília: Funasa, 2009.

27. Cardoso MD. Saúde e povos indígenas: equívocos na política atual. *Cadernos de Saúde Pública*, 2014; 30(4):860-866.

28. Langdon EJ. The notion of inclusion in Brazilian Indian health policy: services and cultural practices. *Revista Anales - Nueva Época* 2010; 13:153-181.

29. Pontes AL, Rego S, Garnelo L. 2015. O modelo de atenção diferenciada nos distritos sanitários especiais indígenas: reflexões a partir do Alto Rio Negro/AM, Brasil. *Ciência & Saúde Coletiva*, 2015; 20(10):3199-3210.

30. Welch JR. 2014. Fórum saúde e povos indígenas no Brasil: Introdução. *Cadernos de Saúde Pública*, 2014; 30(4):851-854.

31. Novo MP. Política e intermedialidade no Alto Xingu: do modelo à prática de atenção à saúde indígena. *Cadernos de Saúde Pública*, 2011; 27(7):1362-1370.

32. Tully, James. The Struggles of Indigenous Peoples for and of Freedom. In: Duncan Ivison, Paul Patton and Will Sanders (eds). *Political Theory and the Rights of Indigenous Peoples*. Cambridge: Cambridge University Press, 2000; 36-59.

33. Short, Damien. Australian 'Aboriginal' Reconciliation: The Latest Phase in the Colonial Project. *Citizenship Studies* 2003; 7(3):291-312.

34. Howitt, Richard, Olga Havnen and Siri Veland. Natural and Unnatural Disasters: Responding with Respect for Indigenous Rights and Knowledges. *Geographical Research* 2012; 50(1):47-59.

35. Laraia, Roque de Barros. Antropologia e direito. *Ilha: Revista de antropologia* 2008; 2008:311-317

36. Sadiq, Kamal. When being "native" is not enough: citizens as foreigners in Malaysia. *Asian Perspective* 2009; 33(1):5-32

37. Yashar, Deborah. *Contesting Citizenship in Latin America: the rise of indigenous movements and the postliberal challenge*. New York: Cambridge University Press, 2005.

38. Farmer, P. An Anthropology of Structural Violence. *Current Anthropology*, 2004; 45(3):305-325; <https://doi.org/10.1086/382250>

39. Berkowitz AL. Neurology missions(s) impossible. *Neurol*

- Neuroimmunol Neuroinflamm 2014; 83:1450-1452.
- 40.Dainton, Christopher & Charlene Chu, Symptom clusters on primary care medical service trips in five regions in Latin America, *Journal of Epidemiology and Global Health* 2015; 5(3):259-264; doi.org/10.1016/j.jegh.2014.12.002
- 41.Yu, Stephanie et al., The scope and impact of mobile health clinics in the United States: a literature review. *Int J Equity Health* 2017; 16:178; doi: 10.1186/s12939-017-0671-2
- 42.Philips, Erica et al. Do mobile clinics provide high-quality antenatal care? A comparison of care delivery, knowledge outcomes and perception of quality of care between fixed and mobile clinics in central Haiti; *BMC Pregnancy and Childbirth* 17, 2017; 361(2017); doi.org/10.1186/s12884-017-1546-7
- 43.Dohn MN and Dohn AL. Quality of Care on Short-term Medical Missions: Experience with a Standardized Patient Record and Related Issues. *Missiology* 2003; 31(4):417-429.
- 44.McLennan S. Medical voluntourism in Honduras: 'Helping' the poor?. *Progress in Development Studies* 2014; 14(2):163-179.
- 45.Sykes KJ, Phong TL, Sale KA, Nicklaus PJ. A 7-Year Review of the Safety of Tonsillectomy during Short-Term Medical Mission Trips. *Otolaryngol Head Neck Surg* 2012; 146(5):752-756
- 46.Kloos, Stephan. Book review of "Humanitarian reason. A moral history of the present", by Didier Fassin. *Social Anthropology*, 2012:338
- 47.Robbins, Bruce. The Politics of Life: Rethinking humanitarianism in an age of planetary inequality. Book review of "Life, A Critical User's Manual" by Didier Fassin. *The Nation*, May 13, 2019. <https://www.thenation.com/article/archive/didier-fassin-life-a-critical-user-manual-humanitarianism-aid-review/>
- 48.Guilhot, Nicolas. The Anthropologist as Witness: Humanitarianism between Ethnography and Critique Humanity. *Humanity*, Spring 2012:81-101
- 49.Benthall, Jonathan. Humanitarianism as Ideology and Practice. In: Hilary Callan (ed.). *The International Encyclopedia of Anthropology*. John Wiley & Sons, Ltd, 2018. pp.1-12. DOI: 10.1002/9781118924396.wbiea2089
- 50.Chiu Y-W, Weng Y-H, Chih-Fu C, Yang C-Y, Lee M-L. Perceptions and Efficiency of Short-Term Medical Aid Missions Among Key Groups of Health Professionals. *Eval Health Prof* 2014; 37(3):379-393. doi: 10.1177/0163278712461503
- 51.Hennink, Monique, Inge Hutter & Ajay Bailey. *Qualitative Research Methods*, 2nd ed., London: Sage Publications Ltd, 2020.
- 52.Gummeson, Evert. Qualitative research in marketing: Road-map for a wilderness of complexity and unpredictability. *European Journal of Marketing*, 2005; 39 (3/4): 309-327.
- 53.Patnaik, Esha. Reflexivity: Situating the Researcher in Qualitative Research. *Humanities and Social Science Studies*, 2013; 2(2):98-106
- 54.Macbeth, Douglas, 2001. On "Reflexivity" in Qualitative Research: Two Readings, and a Third. *Qualitative Inquiry*, 2001; 7(1):35-68
- 55.Musante, Kathleen, Participant Observation, ch. 8, In: Russell Bernard, H. & Clarence Gravlee (eds.). *Handbook of Methods in Cultural Anthropology*, 2nd. ed., Lanham: Rowman & Littlefield, 2015.
- 56.DeWalt, Kathleen & Billie DeWalt. *Participant Observation: a guide for fieldworkers*, 2nd ed. Lanham: Altamira Press, 2011.
- 57.Golafshani, Nahid. Understanding Reliability and Validity in Qualitative Research. *The Qualitative Report*, 2003; 8(4):597-607.
- 58.Morse, Janice et al. Verification Strategies for Establishing Reliability and Validity in Qualitative Research. *International Journal of Qualitative Methods*, 2002; 1(2):13-22.
- 59.Klopper, H. The qualitative research proposal. *Curationis*, 2008; 31(4):62-72
- 60.Brannigan, Michael. *Cultural Fault Lines in Healthcare: Reflections on Cultural Competency*. Plymouth: Lexington Books, 2012.
- 61.Morse, Janice. Qualitative Research: Fact or Fantasy?, ch.1, In: Morse, Janice (ed.). *Critical Issues in Qualitative Research Methods*. Thousand Oaks: Sage Publications, 1994, pp.1-7.
- 62.Zakus, David. Resource Dependency and Community Participation in Primary Health Care. *Soc. Sci. Med.* 1998; 46(4-5):475-494; doi.org/10.1016/S0277-9536(97)00192-5
- 63.Maclure, Richard. Primary Health Care and Donor Dependency: A Case Study of Nongovernment Assistance in Burkina Faso. *International Journal of Health Services* 1995; 25(3):539-558; doi.org/10.2190/X4E7-P8LN-3NHR-B6GF
- 64.Kleinman, Arthur. Interpreting Illness Experience and Clinical Meaning: How I See Clinically Applied Anthropology. *Medical Anthropology Quarterly* 1985; 16(3):69-71; doi.org/10.1111/j.1937-6219.1985.tb00985.x
- 65.Taylor et al. *Introduction to Qualitative Research Methods*.

New Jersey: John Wiley & Sons; Taylor et al. 2016

66.Mack, Natasha et al. Qualitative Research Methods: A Data Collector's Field Guide. Research Triangle Park: Family Health International, 2005.

67.Pollock DK. Personhood and Illness among the Culina of Western Brazil. PhD dissertation, Department of Anthropology, University of Rochester, 1985.

68.Gallagher, Kathleen & Isabelle Kim. Moving towards postcolonial digital methods in qualitative research: contexts, cameras, and relationships, ch 6, In: Gallagher, Kathleen (ed.). The Methodological dilemma: Creative, critical and collaborative approaches to qualitative research. Abingdon: Routledge, 2008, pp.103-120.

69.Qu, Sandy & John Dumay. The qualitative research interview. Qualitative Research in Accounting & Management 2011; 8(3):238-264; doi/10.1108/11766091111162070

70.Morse, Janice, "Emerging From the Data": The Cognitive Processes of Analysis in Qualitative Inquiry, ch. 3, In: Morse, Janice (ed.), Critical Issues in Qualitative Research Methods. Thousand Oaks: Sage Publications, 1994, pp.23-43.

71.Acre. Governo do Estado do Acre. Atlas do Estado do Acre. Rio Branco: Secretaria de Estado de Desenvolvimento, Ciência e Tecnologia, Governo do Estado do Acre, 2008.

72.Silva DAB. Música e Pessoaalidade: Por uma Antropologia da Música entre os Kulina do Alto Purús. Master's thesis, Department of Anthropology, Universidade Federal de Santa Catarina, 1997.

73.Lorain C. Cosmic Reproduction: Economics and Politics among the Kulina of Southwest Amazonia. J R Anthropol Inst 2000; 6(2):293-310

74.Dienst S. A reference grammar of Kulina, an Arawa language. PhD dissertation, La Trobe University, 2006.

75.Vogel AR. Gender and gender agreement in Jaurára (Aruan). Master's thesis, University of Texas at Arlington, 1989.

76.Dienst S. A Grammar of Kulina. Berlin/Boston: de Gruyter Mouton, 2014.

77.Pollock, DK. Health Care Among the Culina, Western Amazonia. Cult Surv Q 1998; 12(1):28-32.

78.Santos, Leonor Maria Pacheco, Ana Maria Costa and Sábado Nicolau Girardi. Mais Medicos Program: an effective action to reduce health inequities in Brazil. Ciência & Saúde Coletiva 2015; 20(11):3547-3552.

79.Pereira LL, Santos LMP, Santos W, Oliveira A, Rattner D.

Mais Médicos program: provision of medical doctors in rural, remote and socially vulnerable areas of Brazil, 2013–2014. Rural and Remote Health (Internet) 2016; 16(1): 3616.

80.Maissonave, Fabiano. Saúde indígena perderá 301 de seus 372 médicos com a saída de cubanos. Para especialistas, êxodo colapsará atendimento na região amazônica. Folha de São Paulo 19/11/2018. <https://www1.folha.uol.com.br/cotidiano/2018/11/saude-indigena-perdera-301-de-seus-372-medicos-com-a-saida-de-cubanos.shtml>

81.Calazans, Michelle. Menos médicos: saúde indígena permanece deficitária após fim do prazo de inscrição dos médicos brasileiros. CIMI - Conselho Indigenista Missionário 19/12/2018. <https://cimi.org.br/2018/12/menos-medicos-saude-indigena-permanece-deficitaria-apos-fim-do-prazo-de-inscricao-dos-medicos-brasileiros/>

82.Lothaire, Fanny & Laura Damase. En Brasil empiezan a hacer falta los médicos cubanos que se fueron del país. France 24 20/09/2019. <https://www.france24.com/es/20190919-en-foco-brasil-salida-medicos-cubanos>

83.Frenopoulo, C. Capacitação em Competência Cultural na Saúde Indígena: Avaliação de uma Oficina de Capacitação para Profissionais de Enfermagem. Revista Multidisciplinar Núcleo do Conhecimento, 2017; 2(1):336-357.

84.Frenopoulo, C. Efeitos Mantidos no Tempo após Capacitação em Competência Cultural: Segunda fase de uma Pesquisa com Profissionais da Saúde Indígena. Revista Científica Multidisciplinar Núcleo do Conhecimento, 2017; 2(7):30-50.

Acknowledgements

This work was supported by the Tinker Foundation; and the University of Pittsburgh (Department of Anthropology, Center for Global Health, Global Studies Center, University Center for International Studies, Dietrich School of Arts and Sciences, and Center for Latin American Studies). I am grateful to Dr. Marieka Sax for her helpful comments on the manuscript.

To contact the author:

*Christian Frenopoulo Ph.D.
Universidad de la República
Centro Universitario de Tacuarembó
Universidad de la República
Campus Ruta 5 km 386.
Tacuarembó, CP 4500
Uruguay*

Email: freno@gorfain.com