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Post-COVID19 strategies to support the health care interactions of U.S. Mexican immigrants and return migrants with the Mexican health system

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ABSTRACT

Background: Mexican migrants in the United States (U.S.) are twice more likely to underutilize health care and to experience low quality of care compared to the U.S.-born population. Current and former Mexican migrants in the U.S have used health services in Mexico due to lower cost, perceived quality, cultural familiarity, and the geographic proximity of the two countries.

Objective: This study aims to characterize the different health care interactions of current and former U.S. Mexican migrants with public and private health care organizations of the Mexican health system and to identify strategies to improve health care interactions post-COVID19.

Methods: We use a typology of cross-border patient mobility to analyze the facilitators and barriers to improve the health care interactions of current and former U.S. Mexican migrants with the Mexican health system. Our policy analysis framework examines how an outcome can be achieved by various configurations or combinations of independent variables. The main outcome variable is the improvement of health care interactions of U.S. Mexican migrants and return migrants with different government agencies and public and private health care providers in the Mexican health system. The main explanatory variables are availability, affordability, familiarity, perceived quality of health care and type of health coverage.

Findings: As the Mexican health system emerges from the COVID19 pandemic, new strategies to integrate current and former U.S. Mexican migrants to the Mexican health system could be considered such as the expansion of telehealth services, a regulatory framework for health services used by transnational patients, making enrollment procedures more flexible for return migrants and guiding return migrants as they reintegrate to the Mexican health system.

Conclusions: The health care interactions of U.S. Mexican migrants with the Mexican health system are likely to increase in the upcoming decades due to population ageing. Regulatory improvements and programs that address the unique needs of U.S. Mexican migrants and return migrants could substantially improve their health care interactions with the Mexican health system.

Introduction

The number of Mexican-born migrants in the United States (U.S.) increased from 1 million in 1970 to a maximum of 12.8 million in 2007 (PEW, 2009). In 2021, an estimated 10.7 million immigrants from Mexico lived in the U.S., accounting for 24 percent of all U.S. immigrants (Mexican Immigrants in the United States [Internet] 2022). While migrants from Mexico continue to be the largest immigrant population in the U.S., the migration flow from Mexico to the U.S. has been gradually declining (Budiman, 2020). Between 2010 and 2021, the number of U.S. Mexican migrants decreased by almost 1 million or 9 percent (Mexican Immigrants in the United States [Internet] 2022). Starting in 2008, a combination of large-scale deportations and the economic consequences from the Great Recession accelerated the flow of return migrants to Mexico (Vargas Bustamante and Chen, 2014; Dominguez-Villegas and Bustamante, 2021). Net migration to the U.S. from Mexico has remained close to zero including in the post-COVID period, meaning that more Mexican immigrants have left the U.S. than those who immigrated, and this trend is expected to continue in the upcoming decades as Mexico's fertility rate continues to decline (Gonzales-Barrera, 2014; Rosenblum et al., 2012).

While the Patient Protection and Affordable Care Act (ACA) has contributed to increased eligibility and health insurance coverage among legally authorized immigrants in the U.S., it has excluded

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undocumented immigrants (Bustamante et al., 2018; Bustamante et al., 2018; Vargas Bustamante et al., 2014; Gonzalez Block et al., 2014; Bustamante and Van der Wees, 2012). The majority (43 percent) of undocumented immigrants in the U.S. were born in Mexico (Gonzales-Barrera and Drogstad, 2019). Thus, U.S. Mexican migrants continue to be underserved in the U.S. health system since 38 percent of Mexican immigrants lack health insurance coverage (Mexican Immigrants in the United States [Internet] 2022; Bustamante et al., 2009). By contrast, only 9 percent of U.S. citizens were uninsured in 2020 (Kaiser Family Foundation 2020). Lack of health insurance coverage translates into lower access to and use of health care, and U.S. Mexican migrants are twice more likely to underutilize health care and to experience low quality of care compared to the non-Latino white population (Bustamante et al., 2018; Vargas Bustamante et al., 2012; Vargas Bustamante et al., 2009). Undocumented immigrants from Mexico are particularly vulnerable since 56 percent lack a usual source of care (Bustamante et al., 2021). Restrictive immigration policies, health care navigation challenges and fear of deportation are associated with the suboptimal use of health care among U.S. undocumented immigrants (Bustamante et al., 2022).

The U.S. and Mexican health systems will soon face important challenges caused by population ageing, particularly among Mexican migrants living in the U.S. (Mexican Immigrants in the United States [Internet] 2022). Approximately 85 percent of U.S. Mexican migrants are adults between 18 to 64 years of age, compared to only 59 percent for U.S.-born individuals (Mexican Immigrants in the United States [Internet] 2022). If present trends continue, this shifting immigrant demographics imply that U.S. Mexican migrants would age at a faster rate compared to the U.S.-born population. With an increasing number of U.S. Mexican migrants approaching an age when they would need to use health care more frequently, important questions remain on how to ensure access to quality care for this population.

This is particularly salient for the increasing number of aging undocumented immigrants who have lived and worked in the U.S. for many years but are ineligible for Medicaid and Medicare (Bustamante et al., 2021). Before the 2000s, circular migration eased the health care demand from ageing immigrants, since many returned to Mexico during their productive years (Massey et al., 2016). Border security policies since the early 2000s have encouraged immigrants to settle in the U.S. (Massey et al., 2016). The great majority of Mexican immigrants (87 percent) have lived in the U.S. for more than a decade (Mexican Immigrants in the United States [Internet] 2022). Uncertainty remains on how older migrants, particularly those who are ineligible for public programs in the U.S., would be able to address their health care needs as they grow older.

For decades Mexican migrants in the U.S have used health services in Mexico due to lower cost, perceived quality, cultural familiarity, and the geographic proximity of the two countries. Mexican immigrants in the U.S. often used health care in Mexico when visiting their hometowns, or when they crossed the border to purchase more affordable health services (Gonzalez-Block et al., 2011; Bustamante, 2020). More recently an increasing number of Mexican immigrants in the U.S. have interacted with the Mexican health system after deportation or voluntarily returning to Mexico (Dominguez-Villegas and Bustamante, 2021).

Since the early 2000s the Mexican consular network in the U.S. created a program called *Ventanillas de Salud* (VDS) or Health Windows to provide health information to Mexican migrants on how to access available U.S. health services in their local communities. Over the years, VDS started offering basic health screenings for Mexican migrants, in addition to health information, health care referral and support in the U. S. (Vilar-Compte et al., 2021). This program was particularly useful during the COVID-19 pandemic when underserved U.S. Mexican migrants used VDS as a trusted source of health information and referral to COVID-19 testing and treatment in the U.S. (Vilar-Compte et al., 2021).

With an increasing number of ageing and underserved U.S. Mexican migrants and an ongoing flow of return migrants to Mexico, new research is needed to understand how the Mexican health system could address the post-COVID19 needs of U.S. Mexican migrants and return migrants. This study categorizes the main types of health care interactions of current and former U.S. Mexican migrants with public and private organizations in the Mexican health system and outline strategies to facilitate these interactions using lessons learned during the COVID19 pandemic. We use the typology of cross-border patient mobility developed by Irene Glinos and colleagues, to analyze the facilitators and barriers faced by transnational patients, in the specific case of the health care interactions of current and former U.S. Mexican migrants (Glinos et al., 2010). In this study we argue that different public and private organizations in the Mexican health system have been responsive to the needs of current and former U.S. Mexican migrants, however, regulatory improvements and programs that address the unique needs of cross-border workers and transnational patients could substantially improve the experience of current and former U.S. Mexican migrants when they interact with the Mexican health system. These proposed strategies consider the health care delivery lessons learned during the COVID-19 pandemic, such as the expansion of telehealth services that have been proven effective at delivering health care remotely.

Our period of analysis is the pre and post Covid 19 pandemic period. Since the current mobility trends of Mexican migration to and from the U.S. started after the 2008 Great Recession, our pre-COVID period of analysis is 2008-2019, and our post-COVID analysis would cover 2020-2022 (Bustamante et al., 2021). In this study we consider the needs of Mexican migrants who live in the U.S. but occasionally use the Mexican health system to address unmet health care needs, and those who have returned to Mexico due to deportation or voluntary repatriation after years of U.S. residence.

Methods

We use a qualitative policy analysis framework to compare how an outcome can be achieved by various configurations or combinations of independent variables (Gd, 2021). In this study the main outcome variable is the improvement of health care interactions of temporary and permanent U.S. Mexican migrants with different government agencies and public and private health care providers in the Mexican health system. The main explanatory variables are availability, affordability, familiarity, and perceived quality of health care offered by the Mexican health system. We use previous research from the academic and grey literature published in each of these areas to identify what are the main facilitators and barriers encountered by current and former U.S. Mexican migrants when they interact with the Mexican health system.

We first categorize the different types of health care interactions of U.S. Mexican migrants and return migrants with the Mexican health system, distinguishing the services offered to Mexican migrants currently living in the U.S. and the services offered to return migrants, either those who are forcibly removed back to Mexico (deportees) and those who return voluntarily (returnees). We use the theoretical framework of Glinos et al that seeks to understand why patients use health care abroad and how they pay for cross-border health services (Glinos et al., 2010). The study uses the different explanatory variables of this model to analyze how to improve the experience of current and former U.S. Mexican migrants when they interact with public and private health care organizations of the Mexican health system, considering the lessons learned during the COVID-19 pandemic.

Theory: the health care interaction of current and former U.S. Mexican migrants with the Mexican health system

According to Glinos et al, cross border patient mobility can be defined as “the movement of a patient travelling to another country to seek health care” (Glinos et al., 2010). This typology uses two dimensions to characterize the cross-border mobility of patients: 1)

motivation to use planned health care abroad and 2) how these services are financed.

The main *motivations* to use health care abroad are: a) *Availability* of treatment that can be defined as whether health care is accessible to the patient in terms of quantity of services and type of services, b) *Affordability/no cover* refers to whether patients can afford or are eligible to access health care services sought abroad, c) *Familiarity* is frequently present in border regions or among the immigrant diasporas since health care in a different country may be more familiar to patients as providers speak the same language and share common cultural traits, d)*Perceived quality* refers to the satisfaction of patients with interactions in the health system of another country, which sometimes differs from objective measures of health care quality since perceived quality relates to patients experiences with health care received abroad.

A second dimension to consider in this typology is the type of funding used to pay for health care abroad. The two possible financing mechanisms are: a) *With cover* for cross-border care when patients have some form of public or private health insurance protection to share the costs of services rendered aboard, b) *Without cover* for cross-border care when patients lack coverage for health care abroad and pay for these services through out-of-pocket payments. This typology can be applied to different flows of cross-border patients that in the case of U.S. Mexican migrants can be distinguished between migrants who live in the U.S. but occasionally use the Mexican health system to address unmet health care needs, and those who have returned to Mexico due to deportation or voluntary repatriation after years of U.S. residence.

Health care interactions of U.S. Mexican migrants with the Mexican health system

U.S. Mexican migrants often interact with public and private organizations of the Mexican health system when they travel to Mexico to receive health care services or when they use the Health Windows or *Ventanillas de Salud* (VDS) offered by the Mexican consular network in the U.S. These services can be used in addition to health care received in the U.S. either through public or private providers. However, Mexican migrants may choose health services offered by VDS due to their availability and cultural familiarity. Alternatively, the services offered by VDS could be a substitute to health care in the U.S. due to lack of health insurance coverage or knowledge of how to navigate the U.S. health care system.

Ventanillas de Salud (VDS) or Health Windows program

The VDS program started in 2003 as a collaboration between the Mexican Ministry of Health and the Mexican Ministry of Foreign Affairs aiming to provide U.S. Mexican migrants with information on how to access health care available to them in their local community. Over time, VDS expanded its services by offering health information and basic health screenings for Mexican migrants. Even though the Mexican government has funded this program directly, VDS operate in coordination with multiple public and private organizations in their local jurisdictions, such as U.S. local health care providers. The VDS are located within the 49 Mexican consulates in the U.S. located in 25 U.S. states, and through 11 Mobile Health Units (Flynn et al., 2021). In 2018, approximately 1.5 million individuals received culturally and linguistically sensitive services in a VDS, 2 million individuals attended orientation and information sessions, 1.8 million health screenings were conducted, 48 thousand vaccines were administered, and 316 thousand health referrals to local health care providers and insurers were issued (Flynn et al., 2021). These services were delivered in a safe and trustful environment (Rangel Gomez et al., 2017; Secretaría de Relaciones Exteriores 2017).

The *VDS* had an important role in the response to the COVID-19 pandemic. This health outreach program provided information about the virus, offered testing services and information on how to navigate the local health care system if symptoms appeared, and referred relatives to consular services for funeral arrangements and repatriation of remains (Vilar-Compte et al., 2021). They were able to convert most of their services to telehealth modalities such as telephone and online, both the physical site and the mobile health units (Vilar-Compte et al., 2021). VDS became a reliable, trusted, and accessible source of information for migrants, ranging from basic explanations of transmission mechanisms and protective measures to specialized information such as health care eligibility and economic support. At a critical point of economic inactivity, VDSs offered services to address the circumstance, such as offering food supplies and providing mental health support by identifying anxiety, depression, grief, and domestic violence. VDS were also able to connect users with Spanish-speaking mental health providers (Vilar--Compte et al., 2021).

U.S. Mexican migrants and the transnational use of health care in Mexico

Approximately four hundred thousand medical travelers visited Mexico each year for health purposes before the COVID-19 pandemic. Of these visitors, 70% were estimated to be U.S. Mexican migrants or U.S. citizens of Latino heritage (Wallace et al., 2009). The revenues from transnational patients in Mexico were estimated in approximately USD 3.1 billion (OECD 2017). Since the early 20th century, Mexican border cities offered different health care services to transnational patients such as dental, vision, elective, and preventive treatments. Highly specialized care is currently available to transnational patients in large cities (Promexico 2013). Mexican border cities with the U.S., however, still supply the majority of health care services to U.S. Mexican migrants (Secretaria de Economia 2015).

An offering of health care services to transnational patients in Mexican border towns has evolved from a relatively unregulated and disorderly industry into organized "clusters" of health care and tourism providers that have partnered with government authorities to promote the medical travel industry in cities and towns along the U.S.-Mexico border. This public private partnership enabled health care providers to include recreational services along with comprehensive health services, responding to demands of medical travelers and their companions. This association also encouraged the certification and accreditation of Mexican health care providers, facilitated links with development agencies to fund improvements and certification, and began to actively promote Mexico as a medical travel destination (Bustamante, 2020; OECD 2017).

Health care interactions of Mexican return migrants with the Mexican health system

Previous research shows that return migrants, either those forcibly removed (deportees) or those who returned voluntarily (returnees), face unique challenges upon return (Dominguez-Villegas and Bustamante, 2021). Approximately 61 percent of Mexican migrants who have returned from the U.S. since 2009 until the onset of the COVID19 pandemic have done so voluntarily, citing family reunification as the primary motivation to return, while 14 percent of Mexico's return migration was due to deportation (Gonzales-Barrera and Drogstad, 2019). Return migrants frequently face problems finding a job, enrolling their children in school, and accessing health and social services when they resettle in Mexico (Dominguez-Villegas and Bustamante, 2021). Returnees, and especially deportees, also face stigmatization and discrimination, which complicates their integration into Mexico's job market and its health care system (Wassink, 2018).

Previous research shows that return migrants, particularly deportees, are more likely to lack health insurance coverage in Mexico for at least two years after return to Mexico, compared to non-migrants (Dominguez-Villegas and Bustamante, 2021). In 2018, approximately 74 percent of returnees and 67.5 of deportees had health insurance in Mexico compared to 88.4 percent of non-migrants (Dominguez-Villegas

and Bustamante, 2021). Different mechanisms prevent deportees and returnees from getting health insurance coverage in Mexico after repatriation. Return migrants, many of whom have lived in the U.S. for decades are unfamiliar with the bureaucratic institutions and procedures used to enroll in public health insurance programs. The Mexican health system, is also highly fragmented (OECD 2005). Return migrants must learn how to navigate this highly complex system, in which health care from public insurance plans is unreliable and patients must supplement coverage with out-of-pocket payments in the private sector.

Results

Based on our theoretical framework, the health care interactions of current and former U.S. Mexican migrants with public and private organizations of the Mexican health system can be analyzed focusing on patients' motivations (availability, affordability, familiarity, and perceived quality) to seek health care abroad and type of funding (with and without cover) used to access cross-border health services.

Motivation 1: Availability

Our research shows that in the case of *VDS*, one of the key aspects of their offering to U.S. Mexican migrants is their availability in both the on-site and mobile health units in the U.S. The availability of cultural and linguistic sensitive health information and referral to health care resources in the local area was particularly important during the COVID-19 pandemic. VDS were able to offer culturally tailored information about COVID-19 and remote clinical assessments of symptoms with the support of health professionals. VDS also supported U.S. Mexican migrants on how to navigate available health care services, offered health information in Spanish, explained how to access health services during the pandemic, testing and vaccination sites, and access local government support programs and food pantries (Balderas-Medina et al., 2020). VDS adapted to remote means of outreach such as telehealth and social media (Table 1).

In the case of the transnational use of health services, different studies have documented the availability of cross-border health care services in regions and states close to the U.S.-Mexico border (Glinos et al., 2010; Vargas Bustamante et al., 2012; Byrd and Law, 2009). Almost 83 percent of Mexican migrants live in ten U.S. states and 37 percent reside in California alone (Mexican Immigrants in the United States [Internet] 2008). Thus, the availability of lower cost and culturally sensitive health services in Mexico attract U.S. Mexican migrants. Different studies have estimated that from the million individuals who cross the border to purchase health services, 70 percent are of Mexican heritage, and crossed the U.S.-Mexico to use health care, purchase medications, or receive dental treatments (Wallace et al., 2009; Su et al., 2011). Another study found that U.S. Mexican migrants visit Mexico regularly to receive hospital care for serious illnesses in response to limited access to care in the U.S. (Gonzalez-Block et al., 2011).

Most cross-border patients, however, have a legal status in the U.S. since they can cross the border frequently to purchase prescription drugs, meet their primary care providers, get dental care, or receive specialized treatments. Undocumented immigrants are largely excluded from the cross-border use of health care due to the difficulties of returning to the U.S. (Bustamante et al., 2022). Over time, undocumented immigrants become less familiar with the Mexican health system, making it more challenging to access health care for those who get deported to Mexico. During the COVID-19 pandemic, health care providers in Mexican border areas offered services to U.S. Mexican migrants who were searching treatment for the virus and COVID-19 symptoms in Mexico (Vilar-Compte et al., 2021).

In the case of return migrants to Mexico, either deportees or voluntary returnees, the availability of public health care in Mexico is restricted mostly to the government safety net services (INSABI-*Instituto de Salud para el Bienestar*, formerly known as *Seguro Popular*), or to

Table 1
Health Care Interactions of current and former U.S. Mexican migrants with public and private organizations of the Mexican Health System and Covid-19 response.

	Type of Health Care Interaction	COVID-19 response
Availability: Whether health care is accessible to the patient in terms of quantity of services and type of services	1 *VDS*: Preventive care and health information provided primarily to uninsured or underinsured U.S. Mexican migrants. 2 *Transnational health care*: Use of multiple health care services, dental care, and prescription drugs. Health care paid primarily out of pocket. Limited cross-border health insurance in California and Mexican border cities. 3 *Return migrants*: Public health insurance coverage is available, but enrollment is limited due to bureaucratic procedures and supply failures. Reliance on private health care.	1 *VDS*: Transition to telehealth, emergency response services (food pantries, mental health support). 2 *Transnational health care*: Some transnational patients crossed the border to receive treatment for the virus and COVID symptoms. 3 *Return migrants*: Access to COVID-19 treatment and vaccination in Mexico was universal, although it encountered saturation at different points during the pandemic.
Affordability: Whether patients can afford or are eligible for health care services sought abroad	1 *VDS*: All services offered at no cost at the point of service. 2 *Transnational health care*: Lower health care costs in Mexico are a key driver of cross-border health care. 3 *Return migrants*: Remittances support health spending among return migrants, particularly those without public health insurance coverage.	1 *VDS*: COVID-19 remote services and other forms of support offered at no cost. 2 *Transnational health care*: The flow of transnational health care declined during the pandemic, but quickly recovered as U.S. border restrictions were eased. 3 *Return migrants*: The flow of remittances continued to grow steadily during the pandemic and supported health spending and household income.
Familiarity: Health care in a different country may be more familiar to patients as providers speak the same language and share common cultural traits	1 *VDS*: Culturally sensitive services offered in Spanish contributed to trust. Consular setting contributes to sense of protection from U.S. immigration authorities. 2 *Transnational health care*: Cultural familiarity with health care in Mexico makes them attractive to cross-border patients. 3 *Return migrants*: Lack of familiarity with bureaucratic procedures delays enrollment into public health insurance options.	1 *VDS*: Attracted underserved migrants who trusted consular services for health navigation and information. 2 *Transnational health care*: Some migrants chose to receive treatment in Mexico due to cultural familiarity. 3 *Return migrants*: Learned to navigate the Mexican health system during the pandemic.
Perceived Quality: Patient satisfaction with interactions in	1 *VDS*: Trust and linguistically appropriate services	1 *VDS*: Perceived quality contributed to

(*continued on next page*)

Table 1 (*continued*)

	Type of Health Care Interaction	COVID-19 response
the health system of another country	contributes to perceived quality. 2 *Transnational health care*: Most important motivation to cross the border for health care after lower costs. 3 *Return migrants*: Private health services are perceived to have better quality than public health care providers.	utilization during the pandemic 2 *Transnational health care*: Those who chose treatment in Mexico for COVID19 attracted by perceived quality of services in Mexico. 3 *Return migrants*: Perceived quality contributed to utilization of private services during the pandemic.

Notes: Matrix of cross border patient mobility adapted from Glinos (2010). VDS: Ventanillas de Salud or *Health Windows*.

services offered by the private sector. Only a minority of return migrants can secure jobs with employer-provided health coverage offered by a Social Security Institute (Dominguez-Villegas and Bustamante, 2021). Previous research has shown that when return migrants want to use the services of the government safety-net health program, they encounter barriers due to the lack of official identifications, such as a birth certificate, or a voter ID, and find it difficult to navigate the Mexican health system (Ruiz Soto et al., 2019). While the Mexican government has made efforts to improve the availability of health care for deportees and returnees, the government-provided services through INSABI are limited and often experience shortages of health personnel and prescription drugs that push patients into the private sector where they would have to purchase health services out-of-pocket.

Motivation 2: Affordability

The services from VDS are offered at no cost at the point of service to U.S. Mexican migrants. Thus, the single cost that users face is the opportunity cost of attending the Mexican consulate to get services from VDS or the mobile health units. With the offering of remote services during and after the COVID-19 pandemic, the opportunity cost of reaching the VDS declined. However, it is important to mention that the offering of services for Mexican migrants in VDS and local health care networks is limited and mostly focused on preventive services. Affordability is also a key motivation for U.S. Mexican migrants to visit Mexico to access more comprehensive health services. According to estimates from the Mexican government, health care costs in Mexico are 36% to 86% lower compared to the costs of comparable U.S. health services (Promexico 2013). The affordability of health care in Mexico is one of the main pull factors of U.S. Mexican migrants who use health care in Mexico either as a complement or subsitute of U.S. health care.

After the decline of border crossings in 2020 with the onset of the COVID-19 pandemic and the introduction of U.S. government restrictions, recent estimates show that the flow of cross-border travelers and transnational travelers quickly recovered after COVID-19 vaccines became available in the U.S. (Bustamante, 2022). In part, the affordability of health care in Mexico has been one of the main factors behind the fast recovery of cross-border crossings. Health care cost differentials between the U.S. and Mexico will continue to incentivize cross-border health care use if present trends continue (Vargas Bustamante, 2020). Private health care providers in Mexico are quickly adapting to the demand of cross-border health care users, by adopting international standards to treat transnational patients, and offering ancillary services to travelers (Vargas Bustamante et al., 2012).

In the case of return migrants, important differences exist between deportees and voluntary returnees. Voluntary returnees could make a conscious decision to move and can prepare with anticipation for their health care coverage in Mexico, planning how to obtain coverage from public or private organizations of the Mexican health system. This anticipated preparation could make them more likely to afford necessary health care after repatriation. Deportees, by contrast, could be less likely to succeed after return since the deportation process is usually sudden and inhibits their ability to prepare and mobilize resources for repatriation. They usually rely on remittances from family members in the U. S. to pay for necessary health care in Mexico after deportation. The learning process of how to navigate the Mexican health system, however, can be quite onerous (Ruiz Soto et al., 2019). Access to COVID-19 treatment in Mexico was universal, although it encountered saturation at different points in the pandemic. The flow of remittances continued to grow steadily during the pandemic and supported health spending and household income, particularly among uninsured return migrants (Table 1).

Motivation 3: Familiarity

One of the most distinctive features of VDS among U.S. Mexican migrants is their familiarity with the services offered at the Mexican consulates and its mobile health units. Services are culturally sensitive and offered in Spanish, and the extraterritorial nature of Mexican consulates guarantees that migrants will not be reported to U.S. immigration authorities, which is one of the main fears related to U.S. health care use among undocumented immigrants. It contributes to the trust migrants have in the health information, preventive screenings and navigation support offered by VDS.

In the case of U.S. Mexican migrants who cross the border to Mexico for health care purposes, cultural familiarity, geographic proximity, and lower cost of health care in Mexico are the main drivers of cross-border access to and use of health care in Mexico (Gonzalez Block et al., 2014; Bustamante et al., 2008). Shared cultural approaches to health care and the use of Spanish between patients and providers attract U.S. Mexican migrants to the Mexican health system (Bergmark et al., 2010; Horton and Cole, 2011; Horton, 2013). The lack of legal status for undocumented immigrants, however, restricts the use of health care in Mexico among undocumented migrants in the U.S., since mobility across the border is highly restricted due to U.S. border enforcement (Bustamante et al., 2018; Gonzalez-Barrera and Hugo, 2013). Thus, when undocumented immigrants are repatriated to Mexico, this lack of familiarity contributes to the challenges that deportees face in the Mexican health care system.

Previous research shows that both voluntary returnees and deportees lag non-migrants in their access to health insurance, especially in the first two years after return to Mexico (Dominguez-Villegas and Bustamante, 2021; Ruiz Soto et al., 2019). The lack of familiarity of return migrants with the enrollment procedures of public and private health insurance plans in Mexico, and the challenges related to getting forms of identification and valid employment credentials delay the integration of return migrants into the Mexican job market, which also delays access to employment-provided health coverage. During the COVID19-pandemic, universal access to COVID19 treatment eliminated such restrictions. Return migrants, however, had to learn how to navigate the Mexican health system to access these services during the pandemic (Table 1).

Motivation 4: Perceived quality

Perceived quality is one of the main pull factors of U.S. Mexican migrants to services offered by VDS and to transnational patients in Mexico. For many underserved U.S. Mexican migrants, perceived quality is one of the main factors attracting users to VDS and its mobile health units to receive health care information and preventive screenings. Studies of transnational health care patients about the main motivations to use health care in Mexico shows that after lower cost, perceived quality is the second most important considerations for the use of services in Mexico (Bustamante, 2020).

In the case of return migrants, previous research shows that Mexican migrants living in the US are willing to pay more for private health care in Mexico compared with public health services (Gonzalez-Block et al., 2011; Bustamante et al., 2008). Perceived quality of public health coverage among return migrants could play a role in their lower health insurance coverage rates compared with non-migrants in Mexico. Public health care services offered by INSABI could be an unattractive option for some return migrants due to its limited health coverage, regular shortages, and perceived quality of care. A share of return migrants also may have found it costly, in terms of opportunity cost, to enroll and access health care through INSABI because of bureaucratic hurdles. Long waiting periods and scarcity of prescription drugs and other services from government health care providers could discourage some return migrants from seeking enrollment (Dominguez-Villegas and Bustamante, 2021). Preference for private health services among return migrants, may have contributed to the use of private services for COVID treatment and recovery (Table 1).

Type of Funding 1: With cover

U.S. Mexican migrants who use VDS and its mobile health units, and those who cross the border to Mexico to receive health care are more likely to be uninsured or underinsured in the U.S. (Bustamante, 2020). However, some individuals with U.S. health insurance coverage also cross the border into Mexico to use specific services or purchase prescription drugs, particularly those not covered by their health plans or where the disbursement of deductibles and co-payments would be more expensive, compared to the cost of purchasing these services in Mexico (Bustamante, 2022). In fact, insurance coverage was the main motivation to cross the border for health care only among 3% of the surveyed population. Even though uninsured individuals are more likely to be transnational patients, it is not unusual for dental treatments and other health services to be administred to individuals with health insurance coverage in the U.S., even to those covered by relatively generous public health insurance plans (Horton and Cole, 2011; Judkins, 2007).

As mentioned above, health services offered by VDS and its mobile units are delivered at no cost to the user, however, they are not comprehensive and the opportunity cost of using these services is not reimbursable by U.S. health insurers. The cost of using care in Mexico is reimbursable by U.S.-based health insurance plans for a small share of transnational workers who cross the border each day to work in California, but who reside in Mexican border cities (Bustamante et al., 2008). Currently, California is the only U.S. state where health insurance can operate in conjunction with Mexico. This was accomplished through the amendment of the Knox-Keene Act in 1998. Three private U.S. insurance companies and one insurance group from Mexico are licensed to offer this type of coverage (Vargas Bustamante et al., 2012). Providers in California offer a variety of plans with different service options that range from managed care coverage (Health Maintenance Organization or Preferred Provider Organization) to emergency coverage only (Warner, 2004).

In the case of return migrants, most of them lack health coverage when they return to Mexico. While they are entitled to receive health care coverage through the government safety net (i.e. INSABI), enrollment hurdles often times deter access to and use of health care (Dominguez-Villegas and Bustamante, 2021). Getting employer-provided coverage through a Social Security Institute, usually takes longer and is dependent on finding a job with this type of health care coverage. Previous research shows that a relatively high share of voluntary returnees has private health insurance coverage in Mexico. In fact, private health insurance coverage among return migrants is almost four times higher compared with the non-migrant population in Mexico (Dominguez-Villegas and Bustamante, 2021). Previous research has also shown that one of the main reported uses of remittances from the US in Mexico is private health spending (Amuedo-Dorantes and Bansak, 2005). Most of this spending, however, is out of pocket, and thus investing in private health insurance coverage is a sensible decision for return migrants.

Type of Funding 2: Without cover

Except for health services delivered in Mexico to cross-border workers from the U.S. who are enrolled in binational health plans, health services in Mexico from current and former U.S. Mexican migrants are not reimbursed by U.S.-based health plans. In fact, most services to transnational patients are administered mostly by private health care organizations and paid out-of-pocket. Previous research concludes that the main predictors of health care use in Mexico are health need, lack of health insurance coverage in the U.S., employment status, delay seeking care, more recent immigration, limited English proficiency, and prescription drug use (Bustamante et al., 2008; Gonzalez Block et al., 2012; Vargas Bustamante et al., 2013). For those with health insurance coverage in the U.S., however, health services received in Mexico are not covered by U.S.-based public health plans and reimbursed by private health plans only when patients have international health care coverage (Bustamante, 2022).

U.S. Mexican migrants contribute to health care use in Mexico through remittances. In 2022, U.S. Mexican migrants sent $58.5 billion as remittances to their relatives in Mexico (Banco, 2022). One of the main reported uses of migrants' remittances has been spending for health care (Dominguez-Villegas and Bustamante, 2021). Approximately 46 percent of those receiving remittances use some share of these funds for health care, which represents the single largest category of the intended use of remittances (Amuedo-Dorantes and Bansak, 2005). As suggested by the preference of return migrants into private health insurance in Mexico, a share of return migrants may prefer to use their savings or income from remittances to pay out of pocket for private health services in Mexico. In fact, previous research shows that those individuals receiving remittances from the U.S. were less likely to have health insurance coverage in Mexico (Dominguez-Villegas and Bustamante, 2021). This research suggests that uninsured households in Mexico may need economic support from relatives in the US to finance their health care spending.

Discussion

Previous research shows that U.S. Mexican migrants are twice as likely to underutilize health care and experience low quality of care compared to U.S.-born residents (Vargas Bustamante et al., 2012; Vargas Bustamante et al., 2009; Rodriguez et al., 2009). Current and former U.S. Mexican migrants interact with public and private health care organizations of the Mexican health system to address some or all their health care needs due to the availability, affordability, familiarity, and perceived quality of health care. VDS is a program that provides health information, basic screenings, and health care navigation support in the Mexican consulates in the U.S. and its mobile health units. Another way that current U.S. Mexican migrants interact with the Mexican health system is when they cross the border into Mexico as transnational patients.

Mexican migrants who lived for years in the U.S. but have returned to Mexico as deportees or voluntary returnees also interact with the Mexican health system either participating in a public health insurance program or using health care delivered in the private sector. For this population the availability, affordability, familiarity, and perceived quality of services in Mexico are important considerations when return migrants resettle in Mexico and try to find their way into the Mexican health system. Return migrants use public or private health care services, which are often financed by remittances from relatives in the U.S.

With population aging, it is expected that the number of U.S. Mexican migrants with health care needs would increase (Bustamante, 2020; Warner, 2007). This demographic change has important consequences for the Mexican health system, since an increasing number of U.

S. Mexican migrants may seek health care from VDS or from health care providers in Mexico. Some of the main push factors that may encourage aging U.S. Mexican migrants to return to Mexico are health care needs and lack of eligibility to Medicare or Medicaid. As discussed in this study, the availability, affordability, familiarity, and perceived quality of services in Mexico would be pull factors attracting U.S. Mexican migrants to the Mexican health system.

The COVID19 pandemic has encourage innovations in the way the Mexican health system interacts with U.S. Mexican migrants. The VDS used telehealth as a mechanism to offer services to underserved Mexican migrants who needed information about the virus, testing, treatment, and vaccination. Health care providers in the U.S.-Mexico border continued to operate and offered health services, including treatment and testing for COVID-19 to transnational health care patients, even at reduced capacity and observing COVID19 restrictions. The flow of return migrants to Mexico also continued and deportees and voluntary returnees have been adapting to ongoing pandemic regulation among public and private health care provides.

As the world transitions from a COVID19 pandemic to its endemic stage, the Mexican health system could outline new ways of incorporating current and former U.S. Mexican migrants in their post-COVID19 plans. The availability, affordability, familiarity, and perceived quality of health services in Mexico would continue to attract U.S. Mexican immigrants and return migrants. As health systems emerge from the COVID19 pandemic, policymakers could consider changes to improve the health care interactions of U.S. Mexican migrants and return migrants with public and private organizations of the Mexican health system.

Consider expanding Telehealth services

In the case of VDS, the offering of telehealth services has been an effective strategy to reach out to underserved U.S. Mexican migrants during the pandemic. Policymakers could consider making this change permanent. Telehealth opens new possibilities to reach out to U.S. Mexican migrants who are unable to attend in-person to the VDS of the Mexican consulates and its mobile health units to receive health information, preventive screenings, or health care navigation support during business hours. As more activities have gradually moved back in person since 2021 once the COVID-19 vaccine became available, VDS services adapted to a hybrid offering with some users receiving services in person, through mobile units, and other users receiving services through their phone lines. Telehealth, however, opens new possibilities to address the needs of vulnerable populations, potentially creating special services that could only be feasible through telehealth, such as services for Mexican migrants who are more fluent in indigenous languages instead of Spanish. The Mexican government should continue to invest and expand this health outreach programs closely coordinating with U. S. governments, health care providers, civil society and advocates (Dominguez-Villegas and Bustamante, 2021).

Adapt to an ageing Mexican migrant population in the U.S

In the case of transnational patients, demand from U.S. Mexican migrants is gradually changing from border crossing of uninsured or underinsured individuals who purchase more affordable prescription drugs, dental treatments, and pay out-of-pocket for regular doctor visits, to one of aging adults who may not be Medicare or Medicaid eligible, and who may opt for health care in Mexico driven by cultural familiarity and high cost of care in the U.S. Policymakers and health care organizations will have to respond to an increased demand for affordable and quality public and private health care services for Mexicans who will spend their productive years in the U.S. but who may need to access health care in Mexico in their old age (Bustamante et al., 2021).

Improve private and cross-border health coverage options

Transnational patients and return migrants overwhelmingly use private health care providers in Mexico, however, they primarily pay out-of-pocket due to limited private health insurance coverage options in Mexico (Dominguez-Villegas and Bustamante, 2021; Bustamante, 2020). One possibility could be to expand private health insurance coverage options that currently cover cross-border workers in California to other U.S. and Mexican states that would allow for private health insurance financing in the U.S. with health care delivery in Mexico (Vargas Bustamante et al., 2012; Bustamante et al., 2008).

Previous attempts to expand cross-border regulations in U.S. border states show that opposition could derail some of these efforts. For instance, when Texas considered a bill to establish a regulatory framework at the Texas-Mexico border, along similar lines as the scheme approved in California (Vargas Bustamante et al., 2012). Questions remain on how the legal systems of the two countries could work to solve cases of medical malpractice. The European experience could be useful to consider (Laugesen and Vargas-Bustamante, 2010). Various European directives allow the free movement of health professionals recognizing their qualifications throughout the European economic area (Jarman and Greer, 2009; Glinos et al., 2010). Government regulators in Mexico that oversee the quality of public and private health care providers should also consider health services offered to transnational patients such as private providers, pharmacies, wellness and alternative therapies (Vargas Bustamante, 2015).

Simplify enrollment procedures for return migrants

Previous research shows that health insurance coverage between return migrants and non-migrants in Mexico converges only after two years, suggesting that return migrants take some time to find their way into the Mexican health system (Dominguez-Villegas and Bustamante, 2021). Return migrants face challenges with enrollment procedures in Mexico's public health plans, ranging from obtaining a basic form of identification to finding a primary care provider or getting a referral for a specialized health care provider.

Most government programs such as INSABI require proof of residence and a Mexican ID. Return migrants often lack these documents, making them ineligible for public health services available in the Mexican health system. Deportation from the US to Mexico is usually sudden and unexpected, depriving deportees of the ability to prepare for life after deportation. Voluntary return migrants, however, also find it challenging to get the necessary documents to start a new life in Mexico. These official forms of identification are needed to work, open a bank account, or fill out any other paperwork.

Government organizations at the local, state, and federal levels in Mexico should allow return migrants to temporarily present other forms of official identification. Consular IDs or *matriculas consulares* are an official document issued by Mexican consulates in the U.S. This form of identification is particularly useful for undocumented Mexican immigrants in the U.S. who may lack other forms of official identification. The Mexican Consular ID is accepted in the U.S. as a valid identification in 377 cities, 163 counties, 33 states, 178 financial institutions and 1,180 police departments (CRS Report 2005). Thus, it remains unclear why Mexican public and private organizations do not accept Consular IDs as an official form of identification to participate in government programs, open a bank account or incorporate into the Mexican job market.

Other official documents issued by Mexican government organizations can also provide provisional identification for return migrants. Deportees get a "certificate of repatriation" issued by Mexico's INM when they cross the Mexican border after deportation. Mexican consulates in the U.S. also issue voter IDs and passports to Mexican immigrants that could serve as alternative forms of official identification for return migrants. The use of these documents could be temporary, while return migrants are able to gather all the required documentation and

proof of residence needed to get other forms of identification such as a national or voter IDs.

Prepare migrants for their return to Mexico

The Mexican government and community organization could implement return preparation programs through the network of Mexican consulates in the U.S. These preparation programs could be useful for returnees to learn the basic enrollment procedures of Mexico's health insurance programs. The Mexican consular network has successfully conducted outreach campaigns to enroll Mexican citizens in U. S. government programs including the Deferred Action for Childhood Arrivals (DACA) program that allows eligible undocumented Mexican immigrants to work in the U.S. and protects them from deportation (Dominguez-Villegas and Bustamante, 2021). Government officials in Mexico and Mexican consular authorities should draw on the expertise from previous successful campaigns to prepare voluntary returnees to access the Mexican health system.

Conclusions

Different "push" and "pull" factors incentivize current and former U. S. Mexican migrants to interact with the Mexican health system. Lack of adequate health insurance coverage and access to care in the U.S. have been "push" factors to use health care in Mexico. As described in this study, the availability, affordability, familiarity, and perceived quality of services in Mexico are important "pull" factors, even if services are mostly provided without coverage from U.S. health insurance plans. The underserved and ageing Mexican migrant population in the U.S. is projected to increase the demand of health services in Mexico due to increasing costs in the U.S. and limitied eligibility to U.S. public health coverage. As the Mexican health systems emerges from the COVID19 pandemic, new strategies to integrate transnational patients more effectively could be considered particularly the expansion of telehealth services, a regulatory framework for private and cross-border health coverage options, making enrollment procedures more flexible for return migrants and offering guidance to return migrants for their reintegration into the Mexican health system.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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