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## Editorial

### Probable Impacts of United States Immigration Reform: Some Scenarios for Mexican Rheumatology<sup>☆</sup>



### Impactos probables de la reforma migratoria estadounidense: algunos escenarios para la reumatología mexicana

Carlos Pineda,<sup>a,\*</sup> Hugo Sandoval<sup>b</sup>

<sup>a</sup> Dirección de Investigación, Instituto Nacional de Rehabilitación Luis Guillermo Ibarra Ibarra, Mexico City, Mexico

<sup>b</sup> Unidad de Vigilancia Epidemiológica Hospitalaria-Investigación Sociomédica, Instituto Nacional de Rehabilitación Luis Guillermo Ibarra Ibarra, Mexico City, Mexico

For more than 50 years, hospitals and specialized medical centers, organizations for basic and clinical research, the drug industry, high-tech health-related firms and institutions for higher education that, together, constitute the biomedical research sector of the United States (U.S.),<sup>1</sup> have benefited from the immigration of skilled students, scientists and academics from the entire world. Making use of this source of immigrant talent is unquestionable. In 2016 alone,<sup>1</sup> of a total of 897,783 registered practicing physicians in the U.S., 206,030 (22.95%) graduated from a medical school from outside the territory of the U.S. or Canada<sup>2</sup>; nearly 30,000 medical residents were registered to be trained in that country<sup>2</sup> and more than 50% of the positions of residents in internal medicine were occupied by an international resident.<sup>1,3</sup>

Given that around half of the growth of the entire U.S. economy can be explained by the motor represented by the constant innovation in science and engineering,<sup>4</sup> the sustained increase in the scientific and technological knowledge of the U.S., for more than half a century, has counted on the valuable participation of millions of immigrants. The recent toughening of the U.S. immigration policy<sup>5</sup> has the potential of provoking a disruption in this global trend, that has permitted that 5% of all of the current students in the U.S. are foreigners.<sup>4</sup>

There is, for example, the latent proposal concerning the possibility of a massive deportation of undocumented immigrants contemplated in the program Deferred Action for Childhood Arrivals (DACA). Under this initiative, it is estimated that 5400 physicians would no longer be eligible for introduction into the U.S. health care system over the next few decades.<sup>6</sup>

The current immigration policy has also risked the health of certain seriously ill patients, since the temporary prohibition of accepting refugees could mean denying hospital admission for 800

persons who urgently need medical care and treatment. It has been calculated that, prior to the prohibitions, an average of around 200 refugees with different medical conditions, were being resettled in the U.S. every month.<sup>7</sup>

The fear of being deported can likewise provoke an increase in the costs of health care services by means of extra out-of-pocket expenses. Since there is no universal health coverage in the U.S., payments of this type can, on occasion, represent a catastrophic volume of expenses associated with the impoverishment of both families and individuals.

The lack of alternatives for vulnerable groups also signifies that a growing number of immigrant patients are turning to the services offered by certain chains of pharmacies and retailers in the U.S. that run medical clinics attended to by nursing professionals and certified medical assistants, referred to as retail clinics.<sup>8</sup>

It is expected that establishments of this type will undergo an annual growth of 14% in 2017, numbering more than 2800 clinics, and will represent more than the levels registered in 2014, when there were approximately 1914 retail clinics.<sup>9</sup>

Concomitantly, the U.S. government has announced stricter requirements for applying for a visa, as well as additional security controls in airports, international flights and customs.

In the hypothetical case of massive deportation of undocumented immigrants, it should be considered that the population returned to Mexico may need some supplementary type of medical care over the short term. An excess in the demand could saturate the capacity to respond of the Mexican health care system.

Likewise, the incidence of different common mental disorders,<sup>10</sup> as well as infectious diseases found in certain immigrant groups, could require the implementation of additional health services to reduce the burden of diseases of this type along the border and prevent a possible health crisis.<sup>11,12</sup>

All these changes and threats, in combination with deportations and restrictions for the entry of refugees, are actions that can affect supply and demand of U.S. and Mexican medical care, as is shown in Table 1. For these reasons, a stricter immigration policy could lead to a series of negative effects, that commences with the criminalization of immigrants.<sup>13</sup>

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\* Corresponding author.

E-mail address: [carpineda@yahoo.com](mailto:carpineda@yahoo.com) (C. Pineda).

**Table 1**  
Probable Impacts of the Immigration Policy of the United States (U.S.) on Other Public Policies in the U.S. and Mexico.

	U.S.			Mexico	
	Immigration policy →	Fiscal policy →	Social policy	Foreign exchange policy	Health policy
Feasible type of impact	Immigrant deportations; restriction for entry of refugees; access controls	Budget cuts in NIH, CDC and other key components of the U.S. biomedical research system	Pressure on social factors that determine health	Depreciation of the Mexican peso against the dollar	Pressure on the care-giving capacity of the health system
Supply	↓International medical graduates ↓Foreign physicians ↑Unattended U.S. population in rural and poorer zones ↑Offer of retail clinics ↓Resettling severely-ill patients for treatment ↑Unattended immigrant population	↓Population covered in hospitals ↑Uninsured patients ↓Scientific productivity	↑Uncertainty because of the implementation of DACA	↓Importation of materials and scientific equipment ↓Scientific productivity (meetings, scientific articles) ↑Medical tourism	↑Incidence of diseases in immigrant groups ↑Burden of disease on the border ↑Pressure on the health care system
Demand	↓Costs of helping the immigrant population ↑Costs associated with toughening immigration	↓Budget allocation for NIH ↓Scientific innovation ↓Frontiers of knowledge	↑Out-of-pocket expense ↑Catastrophic expenses	↓Costs of fellows ↓Costs to access databases, catalogs and journals	↑Public spending for emergency care for immigrants and deported individuals

CDC, Centers for Disease Control and Prevention; DACA, Deferred Action for Childhood Arrivals; NIH, National Institutes of Health.

Source: designed by the authors.

Mexico has the third largest immigrant community in the world, after only China and India. Ninety-five percent of Mexican immigrants are concentrated in the U.S.; of the more than 32 million Mexicans residing there, more than 1 million have technical and higher education, including college and postgraduate levels.

After India, Philippines and China, Mexico is ranked fourth as the origin of highly skilled immigrants living in the U.S., and is the first from the entire American continent as a whole.<sup>14</sup>

It is considered that the Mexican economy would have saved the U.S. 81,000 million dollars, over a period of 14 years, corresponding to the costs of the education of immigrants (skilled and unskilled). This amount represents an average of nearly \$6 billion a year, equivalent to nearly half a percentage point of the U.S. gross domestic product.<sup>15</sup>

Even omitting this important fact, if we add all the direct and indirect taxes paid by Mexican immigrants during that period of time, it is calculated that the U.S. economy received around 2.5 times what Mexico obtained in terms of transfer of funds. Thus, the net economic balance of this type of immigration is favorable for the U.S.<sup>15</sup>

In the case of Mexico, the recent shifts in immigration policy are even more aggravating because of (1) the insistence of the U.S. in constructing a border wall, (2) the possible cancelation (or renegotiation) of the North American Free Trade Agreement, (3) the presence of 7 million undocumented immigrants in the U.S. and (4) the threat to impose tariffs to protect the heavy industry and manufacturers of the so-called "Rust Belt".<sup>16</sup> The results of this whole adverse setting has provoked the depreciation of the Mexican peso against the dollar.

There is an inverse relationship between the type of change and the funding of science in Mexico since, as the peso continues to depreciate, it also reduces the purchasing power of Mexican scientists, who need to import a large part of their supplies, reagents, materials and equipment from the U.S.

The depreciation also limits or cancels attendance at international meetings, makes it difficult to subscribe to scientific journals, catalogs or specialized repositories, and reduces options for publication in peer-reviewed international journals, many of which require the payment of a fee in dollars.

Making the immigration policy tougher can likewise change the destination and numbers of Mexican fellows. Although, in 2016, the Mexican Council of Science and Technology awarded 1550 grants to postgraduate students and researchers to study in the U.S. (which is still the primary place for human resource training outside of Mexico), a cooling of the relationships between the two countries can reduce and, at some time, channel the flow of researchers toward options like the European Union, China and Japan.

The economic integration between Mexico and the U.S. is intense and increasingly involves the scientific setting. From 1940 to now, for example, Mexican researchers have published a total of 104,057 articles in collaboration with international colleagues; of these, nearly a third (equivalent to 36,057 articles) have been published with U.S. scientists as coauthors.<sup>17</sup>

The new immigration rules can have a larger or smaller impact on U.S. government budgetary allocations. For the time being, multiple cuts in public spending have been proposed for the purpose of freeing resources to finance the wall along the Mexico-U.S. border and to increment militarism.

In the initial proposal, which will be spelled out in May, the U.S. government asks to reduce the budget of the National Institutes of Health (NIH) by \$5.8 million<sup>18</sup> and cut that of the Prevention and Public Health Fund of the Centers for Disease Control and Prevention (CDC) by nearly 1000 million dollars, in addition to eliminating 403 millions of dollars destined to health professions and programs for nurse training, among others.

These adjustments would have a direct impact on the biomedical research sector, given that funding from the NIH is distributed among more than 2600 institutions around the U.S. and is responsible for the creation of more than 313,000 full- and partial-time jobs.<sup>19,20</sup> The cuts could undermine the economic stability of the universities, of U.S. medical schools and of centers for training specialists, many of which depend on funds of this type.

In addition, the effects on public spending, together with the generated uncertainty, could provoke an increase in uncovered health care, as well as a reduction in the number of insured patients in hospitals. An example of this would be the recent legislative failure to replace the Patient Protection and Affordable Care Act by the so-called American Health Care Act.

In the case of Mexico, the announced budget cuts cast doubts on a large part of the funds for scientific collaboration with Mexico. The National Science Foundation, to mention a case, is currently backing approximately 200 projects with Mexican collaborators,<sup>21</sup> which could be affected by the announced adjustments.

Another impact for Mexico would be provided by the proposal to eliminate Fogarty International Center, an institution that invests 69 million dollars every year to encourage joint work on the part of health research centers in different countries with the NIH.<sup>18</sup>

Although the scenarios for Mexico are in general pessimist and are influenced by uncertainty, the depreciation in the exchange rate could have an unforeseen collateral effect: an increase in medical tourism.

In agreement with the CDC,<sup>22</sup> Mexico is now the second destiny in the world for this activity, with an expanding market for plastic surgery, odontology, cardiology, orthopedic surgery, bariatric surgery, fertility, transplantation and eye surgery.

The offer of health care services is attractive because of considerable comparative advantages, such as the enormous differences in the cost of certain procedures and the emphasis on rehabilitation after surgery,<sup>23</sup> a common border, skilled specialists, a wide range of available procedures, avant-gardism in infrastructures, as well as high-quality services with international accreditation.

The Mexican Secretariat of Economy estimates that medical tourism reached 3300 million dollars in 2015 and that it increased by 7% in 2016. On average, the savings in dollars for an individual from the U.S. ranges between 40% and 65% for a variety of specialties and procedures.<sup>24</sup>

In the case of rheumatic and musculoskeletal diseases, the growing cost of medications prescribed in the U.S. has become an additional cause for concern. Given that biological agents are now part of the arsenal of therapies for several rheumatic conditions, such as rheumatoid arthritis, lupus erythematosus, spondyloarthritis and certain systemic vasculitides, the cost of treatment has increased.<sup>25,26</sup> This situation could lead to the search for new options in countries like Mexico, in order that patients with chronic conditions not incur in catastrophic expenses. In short, it is highly probable that the impact of immigration restrictions and the proposed budget cuts be differentiated. In their case, Mexican rheumatologists devoted to research should expect:

- 1) changes in the international funding of clinical, biomedical and technological research projects;
- 2) a lesser capacity to carry out projects because of the depreciation of the Mexican peso; and
- 3) a decrease in the opportunities to do postgraduate studies and send students as fellows to other countries.

All of these situations could make it even more difficult to train young scientists since, rheumatology is an integrating activity within the basic research setting, as well as multidisciplinary in the clinical field, with a constant interaction with other health professionals.

However, the depreciation of the Mexican peso and uncertainty resulting from the reform of the U.S. health system could open a window of opportunity toward the future for the clinical exercise of the profession, stimulated by a growing demand provided by a search for high-quality specialized care, through medical tourism.

The scenarios mentioned here are not definitive, but they offer an analytical basis for impending discussion on the probable impacts that the shifts may have on the present and future of rheumatology in Mexico, as well as on the type of strategies and public policies to be implemented to prevent that these effects become more severe, given that the immigration policy underway

is contrary to the deontological and behavioral concepts and to the professional performance of rheumatologists.<sup>27</sup>

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