A border health crisis at the United States-Mexico border: an urgent call to action



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Summary

In this Viewpoint, we provide an overview of the worsening trend of traumatic injuries across the United States—Mexico border after its recent fortification and height extension to 30-feet. We further characterize the international factors driving migration and the current U.S. policies and political climate that will allow this public health crisis to progress. Finally, we provide recommendations involving prevention efforts, effective resource allocation, and advocacy that will start addressing the humanitarian and economic consequences of current U.S. border policies and infrastructure.

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Introduction

In January 2017, President Trump signed the Border Security and Immigration Enforcement Improvements executive order directing the fortification of the United States-Mexico border to deter further unauthorized crossings.1 This led to the construction of the Southwestern border wall from 8 to 10 feet up to 30-feet, including regions in California, Arizona, New Mexico, and Texas. Despite the increase in wall height and coverage, Customs and Border Protection (CBP) encounters continue to rise and reached nearly 2.4 million encounters in 2022.2 As physicians at the frontlines, we have endured an unintended consequence of our new border infrastructure: a record number of traumatic injuries from border falls. Given the political, economic, and violent conditions across the globe driving migration and the current U.S. political climate, we anticipate this to only get worse.

Traumatic injuries at the U.S.-Mexico border

The health hazards from border barriers to those seeking refuge is an international humanitarian concern. The Greece–Turkey border witnessed 398 border-related deaths, from drownings to hypothermia, from 2000-2019.³ Although heat exhaustion and drownings have historically been a major cause of injury and death throughout the U.S.-Mexico border, traumatic injuries from border wall falls have become a more prevalent mechanism of injury.^{4–8} With the rise of these

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border walls to 30-feet, this has now become a public health crisis. Liepert et al. reported a five-fold increase in trauma admissions after border falls from 67 in the 2016–2018 period compared to 375 admissions in 2019–2021 period when most of the San Diego–Mexico border had risen to 30-feet.⁹ This was accompanied by an increase in Injury Severity Score (ISS) from 8·3 to 10·4 and an increase in mortality from zero to 16 deaths after border wall construction. Along, with the increased frequency and severity, hospital length of stay and costs to treat patients with traumatic border fall injuries also rose significantly.

Tenorio and colleagues have found an associated increase in traumatic brain, cerebrovascular, and spinal injuries, after the border fortifications in this same region.10-12 Spinal injuries after border falls increased significantly with an accompanying increase in surgical interventions, hospital stays, and hospital charges for these patients. 10 More troubling, all instances of traumatic brain and cerebrovascular injuries from border falls occurred after the border wall was fortified to 30feet.11,12 Patients who suffered a traumatic brain injury from a border fall were found to have a mortality rate of 7.1% compared to 0.3% for all other border fall patients.11 The most recent report from the two Level-1 Trauma Centers in the San Diego region that care for the majority of these patients in California show that this trend is progressing. Annual admissions from traumatic border fall injuries at these hospitals have increased nearly ten-fold from 39 in 2016 to 377 in 2021.13 Hospital costs from traumatic border fall admissions have risen 636% from \$11 million in the 2016-2019 period to \$72 million from 2020 to 2022.13

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This highlights that the new border infrastructure not only led to increased morbidity and mortality but resulted in an increased resource burden on the U.S. healthcare system.

A similar trend has been reported in other Southwestern regions. Polmear and colleagues noted an increase in monthly median border fall admissions from zero in 2016 to 18.5 in 2021 in El Paso, Texas.14 Patients falling from greater than 18 feet were more likely to have an ISS greater than 15, further highlighting the consequences of raising the border to 30-feet. The Mexican Consulate released a report in January 2023 detailing a similar trend on the other side of the border. 15 646 Mexican Nationals were injured or died attempting to cross the San Diego-Tijuana border from 2020 to 2022, with 80% of these cases occurring after border falls. Mortalities rose 162% from 16 deaths in 2020 to 42 in 2022. We are only capturing a fraction of what is occurring. Data is limited to patients who suffer severe traumatic injuries and transported to borderserving hospitals. The true humanitarian and economic impact of our current border infrastructure is far greater.

International factors driving migration

With the current political, violent, and economic conditions throughout the world, particularly Latin America, this trend will only worsen. Colombia and Venezuela endured economic devastation during the COVID-19 pandemic. ¹⁶ Nicaraguans migrating to the United States increased 60 times in 2022 compared to 2020, as the country is overwhelmed by an authoritarian government and political instability. ¹⁷ Haiti has been devastated by a Cholera outbreak and gang warfare terrorizing their nation. ^{18–20}

These circumstances have led a record number of migrants to cross through the infamous Darién Gap; a 66-mile path known as one of the most dangerous migrant routes in the world. It is currently a site of unspeakable violence, causing injuries and deaths, especially among women and children, and the subsequent healthcare needs of the victims are largely unmet.21 The United Nations recently estimated that 400,000 migrants are expected to cross this path in 2023, an increase from 250,000 in 2022.22 An estimated 20% are children under five-years old. This displacement influences both the countries providing temporary shelter and the country of final destination. Globally, there are 108.4 million forcibly displaced people, with 43.3 million children.23 75% are hosted in low and middle-income countries placing the burden on underresourced countries.23

U.S. border policies and the political climate

These international events illustrate the shift in immigration patterns from voluntary migration to seek

employment to forced migration to seek refuge in the U.S.²⁴ This rise in unauthorized immigration has been followed by a rise in anti-immigration sentiment in the U.S.²⁵ Unfortunately, the U.S. has decided to take a deterrence-based approach, which has been well documented to have little impact on unauthorized crossings and has pushed migrants towards more hazardous routes of entry.²⁵⁻²⁸ One such policy was viewed as a prominent driver for unauthorized crossings. On March 2020, Title 42 was enacted under the Trump administration that allowed expedited expulsion of unauthorized individuals due to public health concerns regarding COVID-19. Given the dire circumstances many were fleeing from, this led to repeated unauthorized border-crossing attempts, and a record number of border encounters in 2021.^{2,28,29} Our hospital saw a record number of traumatic border fall admissions that year.9-12 Although Title 42 has been replaced by Title 8 as of May 2023, it is doubtful the new border policies will slow down the record number of traumatic injuries from border falls. Asylum processing is still limited, expedited pathways for removal still exist, and the number of border fall injury admissions continues to rise.25,30

Given the horrifying conditions these migrants have endured at home and during their journey, these 30-foot barriers are unlikely to deter them from seeking reprieve in the U.S. Estimates on a completed border wall predicted it would have minimal impact on border crossings. Since the border wall's fortification, the U.S. continues to have a rising number of total border encounters, with 2,475,669 encounters across the Southwest through September 2023. With a fall in the birth-to-death ratio (deaths will exceed births by 2040 in the U.S.-born population) and low unemployment, the U.S. would benefit from more immigration of employable-aged individuals, which could include most refugees and asylum seekers.

Unfortunately, given the politics involved with unauthorized crossings, border infrastructure policy is one of the most controversial subjects amongst legislators. We have shared our concerns to both state and federal legislators, including President Biden's domestic policy advisors. Nevertheless, many ongoing border construction projects have finalized contracts and obtaining bipartisan support for their termination appears unlikely. This should not deter our efforts as we have seen the devastation these heightened barriers have caused.

Recommendations

We must seek alternative solutions to help slow down this humanitarian crisis threatening one of our most vulnerable populations. This will ultimately entail a multipronged approach aimed at primary injury prevention, improving health outcomes, addressing the healthcare resource burden, closing the knowledge gap, and greater physician advocacy.

Preventive efforts

The effectiveness of prior preventive efforts to decrease border crossing injuries has been unclear. The U.S. previously acknowledged border crossing injuries and deaths as a significant concern and launched the Border Safety Initiative (BSI) in 1998.33 This called for primary prevention in the form of public awareness campaigns. However, the effectiveness of these campaigns was unclear given incomplete data collection and reported migrant deaths rose through the program's first 5 years.34 Nevertheless, given the affordable cost of such efforts and potential substantial benefit, re-igniting these efforts with a new focus on border wall fall injuries is worth pursuing. Social media, particularly TikTok and Facebook, has been identified as a prominent mode of communication amongst migrants making their journey to the United States. 16,35 This has been a critical source of accurate and inaccurate information regarding policy updates and directing migrants toward certain authorized and unauthorized routes of entry. This is a promising method of communication for public awareness campaigns, whereby we can provide migrants with accurate policy updates and the dangers of certain routes of entry and directing them through safe pathways.

Preventive efforts should also entail addressing the root causes of immigration. One effort that has shown potential is foreign aid to countries of origin. One example is The European Union Emergency Trust Fund for Africa, focused on economic development and conflict prevention to help tide the number of African immigrants seeking refuge in Europe.³⁶ How these funds are utilized and allocated to definitively address unauthorized migration is still being determined.³⁷ Nevertheless, there are promising preliminary results for those directed in increasing employment opportunities for young workers.³⁷ These types of binational partnerships would also serve the interests of resource-limited sending countries to limit the economic consequences and disruption in human capital accumulation from immigration.38

An immediate response to the recent increase in asylum seekers is also needed until the root causes are addressed. An alternative to current deterrence methods is allocating resources to increase asylum-processing and approval capabilities. The U.S. has an ethical obligation to welcome asylum seekers with dignity and has shown the ability to accommodate an increase from Southeast Asia in the 1970s-1990s and Ukraine in 2022.25,39,40 This would decrease dangerous unauthorized crossings, as desperate migrants are often left waiting for months in Mexican border cities and resort to alternative methods of entry. 25,41 This should include just and humane processing including: fair and timely evaluation at the border; ability to await their court date in the U.S.; release to non-governmental organizations (NGO) with support to assure humanitarian, medical, legal and travel needs are met. The humane treatment of asylum seekers should further include: no child separation, long-term detention, or exclusion of specific racial/ethnic/religious groups. Despite the rising sentiment opposing immigration expansion, the U.S. can absorb an increase in asylum seekers, who have shown to be vital contributors of the U.S. economy and do not boost crime rates.⁴¹

A recently launched prevention effort is the formation of the Border Wall Fall Injury Prevention Group in San Diego. This group consists of local healthcare providers and allied health professionals, representatives from the Mexican Consul, and binational nongovernmental organizations. The purpose is to exchange information on the current state of border policies and migrant injury, help with our advocacy efforts, and exchange ideas for initiatives that address decreasing traumatic injuries at the border. Given its infancy, the effectiveness of this group is yet to be determined but may serve as a hub for these prevention effort proposals.

Improving health outcomes and addressing the strain on healthcare systems

A key target to close the health outcomes gap is postdischarge care. Tenorio et al. found that only 16% of border fall patients who suffered a spinal injury were discharged to a health facility and only 14% had follow up clinical visits.¹⁰ Similarly, only 4% of all border fall patients in San Diego County and 6% in the Rio Grande Valley sector were discharged to healthcare facilities, with the majority either routinely discharged or discharged back to CBP custody.7,13 This largely stems from healthcare coverage. Marshall et al. found that 97% of border fall patients in the San Diego region were uninsured and federal funding mechanisms often only cover in-hospital care.13 This also highlights the disproportionate resource burden placed on healthcare systems due to our current border infrastructure, with costs totaling \$83 million to care for this population in the San Diego region since 2016.13 Reimbursement rates for varying government funding mechanism often fall well short of the true cost of care. 7,13 Addressing these challenges entails increasing awareness of the limits in postdischarge care and tailor in-hospital care accordingly, along with advocating for greater healthcare resources for border-serving hospitals.

Closing the knowledge gap

Currently, there is limited understanding of the full extent of the consequences of our border infrastructure. The current transparent data is limited to migrants who suffer severe traumatic injuries, are apprehended by CBP, and transported to major trauma centers near the border. Those who are injured and never apprehended, treated at a local clinic or migrant shelters, or those who suffer a mortality and never found are not accounted for.

Viewpoint

Furthermore, data on the long-term health outcomes is currently unknown due to limited follow-up care. A comprehensive data-driven approach is essential to fully analyze the impact of these 30-foot barriers and develop policy recommendations for sensible alternatives. These alternatives should include both addressing root causes of migration and expanding legal pathways for entry with humane processing discussed previously. Without a comprehensive record the effectiveness of prevention efforts would be difficult to measure, which was also lacking in the U.S.'s prior effort to address this through the BSI program.³³

Physician advocacy and partnering with human rights organizations

Physicians have historically demonstrated to be effective advocates for policy changes with advocacy becoming a core component of medical education in the U.S.⁴² Given the heavily politicized nature of injuries from unauthorized crossings, a key step for effective advocacy will be partnering with human rights organizations. They have long been at the frontlines of this advocacy work and have developed robust relationships with policymakers. These organizations will help providers engage with local, state, and federal legislators to increase awareness and advocate for greater resources to border-serving healthcare systems, the migrant population, and to further study this evolving and progressive crisis.

Furthermore, we must acknowledge the health implications from the rise in anti-immigration perspectives in recent years contributing to predominantly reactive deterrence-based policies. ²⁵ As healthcare providers, we encourage a broader view and avoid policies that have a detrimental health impact on a vulnerable population. Finally, if we are to curtail these border crossing injuries, we challenge healthcare provides to take on a larger role of advocating for directly addressing the global drivers of forced displacement, including violence, poverty, and climate change. Ultimately, it is imperative healthcare professionals worldwide join in this call to the presidential administration to end further deterrence-based 30-foot border wall construction.

Conclusion

The recent fortification and height extension of the U.S.-Mexico border has led to a record number of traumatic injuries. Importantly, it likely has had minimal impact on reducing border crossings. It has resulted in unnecessary human suffering and stressing the U.S. healthcare system. Given the presence of international factors driving migration and the current U.S. political climate, we anticipate this public health crisis to progress. A practical solution will require a multidisciplinary effort aimed at primary injury prevention including

addressing the root causes of immigration and expanding legal entry pathways, adequate resource allocation, and advocacy. The ultimate goal should be safe, effective, and controlled migration. These 30-foot barriers are not the answer, and without action our most vulnerable populations will continue to suffer.

Contributors

AT: conceptualisation, investigation, writing-original draft, writing-editing.

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Declaration of interests

AT declares no competing interests.

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References

- Border security and immigration enforcement Improvements, 82 Fed. Reg. 8793 https://www.federalregister.gov/documents/2017/ 01/30/2017-02095/border-security-and-immigration-enforcementimprovements; 2023. Accessed January 5, 2024.
- Southwest land border encounters. U.S. Customs and Border Protection. https://www.cbp.gov/newsroom/stats/southwest-land-border-encounters. Accessed December 28, 2023.
- Pavlidis P, Karakasi MV. Greek land borders and migration fatalities humanitarian disaster described from the standpoint of Evros. Forensic Sci. Int. 2019;302:109875. https://doi.org/10.1016/j.forsciint.2019.109875.
- 4 Sapkota S, Kohl HW, Gilchrist J, et al. Unauthorized border crossings and migrant deaths: Arizona, New Mexico, and El Paso, Texas, 2002–2003. Am J Publ Health. 2006;96(7):1282–1287. https://doi.org/10.2105/ajph.2005.075168.
- Kelada A, Hill LL, Lindsay S, Slymen D, Fortlage D, Coimbra R. The U.S.-Mexico border. A time-trend analysis of border-crossing injuries. Am J Prev Med. 2010;38(5):548–550. https://doi.org/10.1016/j.amepre.2010.01.028.
- 6 Ramey WL, Walter CM, Zeller J, Travis DM, Lemole GM, Hurlbert RJ. Neurotrauma from border wall jumping: 6 years at the Mexican–American border wall. Neurosurgery. 2019;85(3):E502– E508. https://doi.org/10.1093/neuros/nyz050.
- Palacio CH, Cruz B, Vanier C, Cano J, Scott BG. The mechanism and pattern of injuries of undocumented immigrants crossing the Texas-Mexico border along the Rio Grande Valley. *Inj Epidemiol*. 2021;8(1):58. https://doi.org/10.1186/s40621-021-00341-x.
- 9 Liepert AE, Berndtson AE, Hill LL, et al. Association of 30-ft US-Mexico border wall in San Diego with increased migrant deaths, trauma center admissions, and injury severity. *JAMA Surg.* 2022;157(7):633–635. https://doi.org/10.1001/jamasurg.2022.1885.
- Tenorio A, Brandel MG, Produturi GR, et al. The impact of the Mexico-San Diego border wall extension on spine injuries: a retrospective cohort review. J Travel Med. 2022;29(7):taac112. https://doi.org/10.1093/jtm/taac112.
- 11 Tenorio A, Brandel MG, Produturi GR, et al. Characterizing the frequency, morbidity, and types of traumatic brain injuries after the Mexico-San Diego border wall extension: a retrospective cohort review. J Neurosurg. 2023;139(3):848–853. https://doi.org/10.3171/ 2023.1.]NS221859.
- 12 Tenorio A, Brandel MG, Produturi GR, et al. Novel association of Blunt cerebrovascular injuries with the san Diego-Mexico border wall height extension. World Neurosurg. 2023:E1–E6. https://doi. org/10.1016/j.wneu.2023.06.127.

- Marshall WA, Bansal V, Krzyzaniak A, et al. Up and over: consequences of raising the United States-Mexico border wall height. J Trauma Acute Care Surg. 2023;95(2):220–225. https://doi.org/10.1097/ta.00000000000003970.
- 14 Polmear MM, Nicholson TC, Blair JA, et al. Injuries sustained with falls from height in crossing the United States-Mexico border at a Level I trauma center: a prospective cohort study. JAAOS Glob Res Rev. 2023;7(6):1–11. https://doi.org/10.5435/JAAOSGlobal-D-23-00005.
- 15 Secretaría De Relaciones Exteriores. Increasing number of Mexican Nationals injured or dead in their attempt to cross the border. Consulado General de Mexico en San Diego; 2023. https://consulmex. sre.gob.mx/sandiego/index.php/boletines/856-increasing-numberof-mexican-nationals-injured-or-dead-in-their-attempt-to-cross-theborder. Accessed January 5, 2024.
- 16 Kitroeff N, Turkewitz J. What's driving record levels of migration to the U.S. border? New York Times; 2023. https://www.nytimes.com/2023/ 05/11/world/americas/title-42-migration-us-border.html. Accessed January 5, 2024.
- 17 Bermudez AF, Robles F. *In record numbers, an unexpected migrant group is fleeing to the U.S.* New York Times; 2022. https://www.nytimes.com/2022/12/27/world/americas/nicaragua-us-migration.html. Accessed January 5, 2024.
- 18 Vega OD, Juin S, Berendes D, et al. Cholera outbreak Haiti, September 2022 January 2023. MMWR Morb Mortal Wkly Rep. 2023;72(2):21–25. https://doi.org/10.15585/mmwr.mm7202a.
- 19 Humanitarian Aid. Haiti: UN sounds alarm over worsening gang violence across Port-au-Prince. United Nations; 2022. https://news. un.org/en/story/2022/07/1122662. Accessed January 5, 2024.
- 20 Taylor L. Women are left vulnerable as Haiti's spiraling gang violence and healthcare crisis intensifies. BMJ. 2022;378:o2065. https://doi.org/10.1136/bmj.o2065. Published online August 19.
- 21 Naranjo L, Williams Y, Levy J, et al. The endless vulnerability of migrant children in-transit across the Darién gap. Am J Trop Med Hyg. 2023;109(3):515–519. https://doi.org/10.4269/ajtmh.22-0765.
- 22 Keeley T. After the Darién gap: finding a space to heal. Unicef USA; 2023. https://news.un.org/en/story/2022/07/1122662. Accessed January 5, 2024.
- 23 Refugee Data Finder. United nations high commissioner for refugees. https://www.unhcr.org/refugee-statistics/; 2023. Accessed January 5, 2024.
- 24 Massey DS. Immigration policy mismatches and counterproductive outcomes: unauthorized migration to the U.S. in two eras. Comp Migr Stud. 2020;8(1):21. https://doi.org/10.1186/s40878-020-00181-6.
- Cameron E, , Nicole Elizabeth Ramos, Goldenberg SM. Deterrence-based asylum policies exacerbate health inequities among women and children seeking safety at the US-Mexico border. *Lancet Reg Health Am.* 2023;24:100545. https://doi.org/10.1016/j.lana.2023.100545.
 Massey DS, Durand J, Pren KA. Why border enforcement back-
- 26 Massey DS, Durand J, Pren KA. Why border enforcement back-fired. Am J Sociol. 2016;121(5):1557–1600. https://doi.org/10.1086/684200
- 27 Cornelius WA. Death at the border: efficacy and unintended consequences of US immigration control policy. Popul Dev Rev.

- 2001;27(4):661–685. https://doi.org/10.1111/j.1728-4457.2001.00661.x.
- 28 Beckett AG, Viaud L, Heisler M, Mukherjee J. Misusing public health as a pretext to end asylum — Title 42. N Engl J Med. 2022. https://doi.org/10.1056/nejmp2200274.
- 29 Gramlich J. Key facts about Title 42, the pandemic policy that has reshaped immigration enforcement at U.S.-Mexico border. Pew Research Center; 2022. https://www.pewresearch.org/short-reads/ 2022/04/27/key-facts-about-title-42-the-pandemic-policy-that-has-res haped-immigration-enforcement-at-u-s-mexico-border. Accessed January 5, 2024.
- 30 Circumvention of lawful pathways, 88 fed. Reg. 11,704 https://www.federalregister.gov/documents/2023/02/23/2023-03718/circumvention-of-lawful-pathways; 2023. Accessed January 5, 2024.
- 31 Allen T, Dobbin CC, Morten M. Border walls. National Bureau of Economic Research; 2018. https://doi.org/10.3386/w25267.
- 32 The demographic outlook: 2023 to 2053. Congressional Budget Office; 2023. www.cbo.gov. Accessed January 5, 2024. https://www.cbo.gov/publication/58912.
- 33 USBP border safety initiative events ongoing. U.S. Customs and Border Protection; 2017. www.cbp.gov. Accessed January 5, 2024. https://www.cbp.gov/newsroom/national-media-release/usbp-border-safety-initiative-events-ongoing.
- 34 Humanitarian crisis: migrant deaths at the U.S.-Mexico border. American civil liberties union. https://www.aclu.org/legal-document/humanitarian-crisis-migrant-deaths-us-mexico-border. Accessed December 28, 2023.
- 35 Gerber M. 'Their only lifeline' for migrants at the U.S. border: smart-phones and TikTok. Los Angeles Times; 2023. https://www.latimes.com/business/story/2023-05-17/how-tiktok-and-other-social-media-changed-the-way-people-migrate-to-the-u-s-in-the-title-42-era. Accessed lanuary 5, 2023.
- 36 Emergency Trust fund for Africa. European Union. https://trustfund-for-africa.europa.eu/index_en. Accessed December 28, 2023.
- 37 Clemens MA, Postel HM. Deterring emigration with foreign aid: an overview of evidence from low-income countries. *Popul Dev Rev.* 2018;44(4):667–693. https://doi.org/10.1111/padr.12184.
- 38 Becker SO, Ferrara A. Consequences of forced migration: a survey of recent findings. *Lab Econ.* 2019;59:1–16. https://doi.org/10.1016/ i.labeco.2019.02.007.
- 39 Massey DS. The real crisis at the Mexico-U.S. border: a humanitarian and not an immigration emergency. Socio Forum. 2020;35(3):787–805. https://doi.org/10.1111/socf.12613.
- 40 Universal declaration of human rights. United Nations; 1948. https://www.un.org/en/about-us/universal-declaration-of-human-rights. Accessed January 5, 2024.
- 41 The Lancet Regional Health Americas. Asylum seekers need to be treated under civil rights laws in the USA. Lancet Reg Health Am. 2023;24:100578. https://doi.org/10.1016/j.lana.2023.100578.
- 42 Liller KD, Mehmood A. The important role for physicians as advocates for firearm and road traffic injury prevention. Am J Lifestyle Med. 2021;15(6):701–705. https://doi.org/10.1177/15598276211039458