

More Doctors for Mexico: A Canada–Mexico Cooperation Framework for Primary Care, Autism Services, and Ethical Medical Recruitment

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Abstract: This article examines whether Mexico could improve its public healthcare system by learning from Brazil's Mais Médicos and Mais Médicos Especialistas programmes and developing medical and research cooperation with Canada. Brazil's experience raises a central question: does the recruitment of general practitioners resolve persistent shortcomings in specialist access, patient safety and continuity of care? Autism is used as an example of the need for coordinated care, since identification by primary-care physicians must be connected to specialist assessment, mental-health and developmental services, education and family support. The study combines a review of scientific literature and official documents, including the Brazilian Federal Court of Accounts' examination of the Brazil–PAHO agreement, with published interviews concerning intermunicipal health consortia. It distinguishes municipal emergency transport and SAMU coordination from responsibility for routine specialist referrals. The comparison examines Cuba's historical medical cooperation with Brazil, Mexico's healthcare needs and the health systems of Chile, Costa Rica, the United States and Canada. The research finds that increasing generalist appointments or selected specialist capacity does not, by itself, establish continuity of care. The consortium interviews identify possibilities for municipal collaboration, but do not establish that generalist and specialist programmes were integrated. Canadian research institutions and medical training offer an avenue for cooperation, although documented shortages in Canadian primary care prohibit treating Canada as a proven source of large physician contingents. The article proposes a Mexico–Canada collaboration centred on medical knowledge, training and referral organization, subject to empirical comparison with regional alternatives and transparent safeguards against workforce depletion.

Keywords: Mexico; Canada; Mais Médicos; Cuban medical missions; ethical recruitment; autism; physician workforce; primary healthcare; bilateral cooperation.

I. Introduction

Brazil and Mexico, Latin America's two most populous countries, share a problem: the aggregate supply of physicians does not guarantee timely appointments or continuing care for families who need specialists. Mexico had 2.7 practicing physicians per 1,000 inhabitants, compared with an OECD average of 3.9; health expenditure amounted to 5.9% of GDP, compared with 9.3% across the OECD (OECD, 2025). These national figures establish the scale of the resource constraint but do not identify local vacancies or show how long families wait.

Brazil launched the Mais Médicos Program (PMM) in 2013 to address persistent primary care vacancies. Hone et al. (2020) estimated 15.1 additional program physicians per 100,000 inhabitants, but only 5.7 additional primary care physicians net of displacement. They also estimated an annual reduction of 1.06 deaths amenable to health care per 100,000 inhabitants. The findings combine a measurable gain with a specific disappointment: publicly funded placements did not yield a comparable net increase in physician supply.

The withdrawal of approximately 8,300 Cuban physicians in 2018 exposed another vulnerability: continuity depended on an international agreement that could end (PAHO, 2018a). Sliwa Ruiz et al. (2026) found a persistent reduction in chronic disease care in municipalities more exposed to that withdrawal. Services responding to immediate needs recovered faster, and the study found no corresponding change in its final health outcomes. These distinct effects preclude a simple verdict of either total success or total failure.

The research question is: How can the disappointments of Brazil's Mais Médicos, the lessons learned from it, and practices that should be unlearned inform physician deployment, coordination, and continuity of care in Mexico, particularly for autism? Here, unlearning means revising routines contradicted by evidence: treating funded positions as a net increase in supply, counting referrals issued as care completed, or depending on a single foreign provider. Cegarra-Navarro, Wensley, and Sánchez Polo (2014) examined unlearning in home care, and Cegarra-Navarro et al. (2015) connected it with health service quality. Their work supplies an organizational perspective, not a causal evaluation of PMM.

Autism offers a demanding test of the full care pathway. In a study of 186 Mexican families, the median time from initial concern to diagnosis was 27 months, with a median of three professional contacts before diagnosis (Zavaleta-Ramírez et al., 2020). This article therefore distinguishes physician deployment, recognition of developmental needs, referral, specialist assessment, and family follow-up. It draws on published evaluations, official documents, a 1918 Mexican historical book, and interviews with Brazilian consortium managers conducted between January and March 2026. The interviews describe management mechanisms rather than clinical effects; the book documents historical philanthropy rather than current system performance. The analysis uses WHO (2007) to identify health system components, Donabedian (1988) to distinguish structure, process, and outcome, Levesque et al. (2013) to assess the patient's path to care, and Provan and Kenis (2008) to examine coordination among organizations. Sections 2 and 3 set out the mechanisms and Brazilian evidence; Section 4 examines regional networks and the labor conditions of international cooperation; Section 5 specifies an adaptation for Mexico.

1.1. Research question, country decision and the role of autism

The principal research question is: under which verifiable institutional, economic and workforce conditions would a Mexico–Canada agreement improve access to primary-care physicians and continuity of specialist care more credibly than alternatives based on Cuba, Chile, Costa Rica or the United States? The question does not equate institutional partnership with a contract for immediate physician export. An agreement may achieve measurable results through professional education, bilingual tele-mentoring, shared referral protocols, residency exchange and clinical governance even when no Canadian physician relocates. Conversely, a workforce-replacement proposal fails without a confirmed recruitment pool, licensing and a non-depletion assessment in the sending country (CIHI, 2025; WHO, 2010).

Autism is selected as a discriminating systems variable, not because every autistic person requires the same medical package or because primary-care physicians should diagnose all developmental conditions. Its long and sometimes discontinuous pathway requires generalist identification and follow-up, referral to developmental and mental-health specialists where appropriate, family participation, school-health collaboration, and lifelong changes in support needs. An increase in consultation counts without documented referral completion, diagnostic timing or continuity of functional support would not fully address this pathway (Lord et al., 2020; Hyman et al., 2020).

The comparison between *Mais Médicos* and the contemporary *Mais Médicos Especialistas* therefore tests a specific mechanism: whether adding general practitioners in underserved municipalities, and subsequently expanding selected specialist capacity, is sufficient without a municipal coordinator, accessible referral tracking and longitudinal patient ownership. The national specialist initiative prioritizes high-demand services and areas such as oncology, gynaecology, cardiology, orthopaedics, ophthalmology and otorhinolaryngology; this initial focus does not itself guarantee a comprehensive autism pathway (Brazilian Ministry of Health, 2025–2026).

Country selection is a comparative policy hypothesis. The manuscript presents Canada as the preferred negotiating proposal for defined institutional deliverables, but Canadian shortage data require a stopping rule: no recruitment from a Canadian service or population experiencing unmet demand, and no assumption of thousands of available physicians. Chile is the principal South American counterfactual because of its integrated-care instruments, common language, academic research networks and regional public-health collaboration. Costa Rica is the Central American counterfactual for EBAIS territorial primary-care teams; the United States is evaluated for specialized medicine, federal-state insurance fragmentation and autism research; Cuba is the historical mobilization and financing counterfactual (OECD, 2017, 2019; Rice et al., 2020; Kirk, 2015).

II. Autism as a Test of Access, Quality, and Continuity

2.1. An Applied Conceptual Framework

Donabedian (1988) distinguishes structure, process, and outcome. Structure includes personnel, facilities, equipment, and other resources; process concerns what providers do with those resources; and outcomes concern the consequences for care and health. Levesque, Harris, and Russell (2013) show that access entails more than the existence of a service: people must recognize a need, seek help, reach a provider, use the service, and have the need addressed. Kruk et al. (2018) further show why expanded coverage without quality may increase utilization without delivering the expected benefit. Together, these approaches prevent the presence of a physician from being mistaken for complete care.

Autism makes the distinction concrete. A primary care physician is part of the structure. Recognizing developmental signs, referring a child, and following up with the family are processes. A timely diagnosis,

appropriate specialist care, and continuity among health services, family, and school are intermediate and final outcomes. If a step fails, additional physicians may improve first contact without completing the pathway.

2.2. The United States: Screening Does Not Complete the Pathway

Lord et al. (2020) describe autism as a heterogeneous neurodevelopmental condition for which different combinations of clinical assessment, behavioral support, communication services, education, and health care may be needed. Hyman, Levy, and Myers (2020) assign primary care a role in developmental surveillance, screening, referral, and follow-up while recognizing the need for services beyond the initial visit. Monteiro et al. (2019) provide an empirical example. Across 54 US pediatric practices, 290 providers screened for autism at 93% of 18-month visits and 82% of 24-month visits. Yet only 31% of children with positive screens were referred to a specialist. A strong initial screening process did not guarantee the next step. In the terms of Levesque et al. (2013), contact with a service did not necessarily translate into access to subsequent evaluation.

2.3. Brazil and Mexico: Training, Referral, and Diagnostic Delay

In a Brazilian pilot study, Bordini et al. (2015) trained 22 primary care professionals over five sessions. Knowledge scores rose from 6.73 to 9.18, and referrals of suspected cases to a specialist service were six times higher in the following four months than in the preceding four months. The sample was small, but the finding illustrates how better recognition in primary care can rapidly increase demand for specialist capacity. Zavaleta-Ramírez et al. (2020) studied 186 Mexican families and found a median diagnostic delay of 27 months and a median of three professional contacts before diagnosis. Families were able to consult professionals, yet successive contacts often failed to produce a timely diagnosis. In Donabedian's terms, professional availability is structure; converting contacts into a working care pathway is process.

2.4. Australia: Universal Coverage and Remaining Access Barriers

Australia provides an institutional comparison. Mitra and Chatterjee (2026) describe universal coverage through Medicare alongside persistent geographic disparities and difficulties distributing health professionals outside major centers. This comparison does not measure the quality of Latin American leadership. It demonstrates that formal coverage and territorial access are different outcomes.

2.5. After Diagnosis: Continuity across Health Care, Family, and Education

The pathway does not end with diagnosis. Hyman et al. (2020) and Lord et al. (2020) describe varying needs for clinical, psychological, communication, and educational services. The relevant measure is therefore not only how many diagnoses are made, but whether diagnosis leads to a continuing care plan.

In an exploratory study of educational settings in Bolivia, Brazil, Ecuador, and Paraguay, De Angelis (2026a, manuscript) identified unequal access to specialist support and difficulties coordinating schools, families, and professionals. That study does not represent national systems or replace clinical evaluation. It shows how information and responsibilities can become fragmented after a medical referral.

Accordingly, physicians, specialists, and facilities are structure; identification, referral, and information exchange are processes; and continuity and an appropriate response to a patient's needs are outcomes. This distinction guides the comparison of the Brazilian programs.

2.6. Implications for Mais Médicos

Mais Médicos directly expanded one structural component by increasing the primary care workforce. This can address a substantial share of demand for straightforward conditions. For autism and other complex needs, outcomes also depend on what follows the first appointment. Evaluation should therefore measure whether referrals reach specialists, how long the transition takes, and whether patients return to local follow-up, rather than stopping at physician or consultation counts (Donabedian, 1988; Levesque et al., 2013; Kruk et al., 2018).

2.7. The Affordable Care Act: measurable gains and unresolved structural constraints

The Affordable Care Act (ACA), signed by President Barack Obama in 2010, cannot be characterized accurately as a policy that simply “did not work.” It reduced the number of uninsured Americans through Medicaid expansion, subsidized insurance marketplaces, insurance-market rules, and dependent coverage for young adults. Yet it did not create a single national public insurer, abolish private-sector price setting, or guarantee that every health facility accepts every insurance plan. Its achievements and limitations therefore answer different questions: obtaining insurance is an intermediate outcome, whereas receiving timely and financially sustainable treatment is a final one (Rice et al., 2020; KFF, 2025).

The ACA depended on a federalist implementation structure. States decided whether to expand Medicaid after the Supreme Court's 2012 decision in *NFIB v. Sebelius*, creating different eligibility conditions across state boundaries. Employers continued to offer insurance, public Medicare generally remained linked to age or disability, Medicaid remained means-tested, and private insurers administered a substantial share of covered services. The resulting architecture expanded coverage without eliminating administrative fragmentation. For Mexico this comparison matters because merely creating an insurance entitlement does not ensure a stable pathway from a rural primary-care appointment to specialized autism assessment and rehabilitation (Rice et al., 2020).

The ACA also faced obstacles in the supply of health professionals. Increased insurance coverage can generate additional demand without an immediate increase in clinicians, appointments, diagnostic facilities, and services in underserved districts. Where provider networks are narrow, nominal financial protection may coexist with long waits or additional travel costs. A careful evaluation must therefore measure insurance take-up, preventable admissions, treatment completion, provider-network adequacy, household out-of-pocket payments, and geographic equity separately. Calling the reform a failure because it did not establish a European-style universal system confuses its political design with its measurable effects; calling it a complete success because insurance coverage increased confuses coverage with effective access.

A second lesson involves policy durability. Reform dependent on federal subsidies, state participation, executive enforcement, and congressional appropriations remains vulnerable to shifts in political control. The Mexican proposal should avoid recurring financing that could disappear after a single government term. Multi-year financing, protected primary-care positions, interoperable records, and transparent contracts should be central design criteria, not implementation details left until after the doctors have arrived.

2.8. Trump I and Trump II: Medicaid, Medicare and ACA should not be conflated

2.8.1. What changed under Trump and why Medicare requires separate treatment

The policy timeline must be precise. The first Trump administration pursued ACA repeal, reduced or changed support for certain marketplace mechanisms and used administrative flexibility, but Congress did not enact comprehensive ACA repeal. During the Biden years, enhanced marketplace subsidies and other coverage measures changed the operating baseline. The second Trump administration began in 2025, and the reconciliation law enacted in July 2025 changed Medicaid eligibility administration and projected federal expenditures. Medicaid expansion work requirements scheduled for 2027 cannot be described as already fully implemented nationwide in 2026. KFF estimated that work-requirement changes account for a projected \$326 billion in federal Medicaid savings over ten years and could increase the uninsured population; the latter remains a forecast, not an observed 2026 health outcome (KFF, 2025, 2026).

Medicare operates under different statutory authorities and serves primarily older people and some people with disabilities. Medicare Advantage, traditional Medicare, Medicare Part D drug coverage and Medicaid dual-eligibility arrangements must not be lumped together. Changes in premiums, payment rules and federal provider reimbursements may affect Medicare beneficiaries, but no defensible analysis calls Medicaid expansion reporting requirements a direct termination of Medicare. A medically meaningful assessment of Trump-era policy should trace the legal instrument, beneficiary category, implementation date and observed or modeled outcome independently.

In relation to autism, the policy question is whether insurance and school-linked services finance timely assessment and evidence-based support for children and families, including those transitioning between Medicaid, marketplace plans and employer-sponsored coverage. Administrative churn and narrow networks may disrupt continuity even where coverage appears substantial. The article thus compares the US insurance model against Mexico's proposed locality-based clinical responsibility, while preserving the separate value of US specialist expertise.

The first Trump administration (2017–2021) supported repeal efforts that did not result in a complete repeal of the ACA, ended the federal individual-mandate penalty through legislation enacted in 2017 with effect in 2019, and approved or sought Medicaid work-requirement demonstrations in several states. The mechanisms had different effects: weakening the mandate changed an enrollment incentive, whereas work requirements added eligibility and reporting conditions that could cause interruptions even among otherwise eligible adults. A comparison must specify policy instrument, population, implementation date and measured outcome rather than attributing every insurance loss to a single presidential decision (Rice et al., 2020; KFF, 2025).

In the second Trump administration, the federal reconciliation law enacted July 4, 2025 made further changes to Medicaid eligibility, verification, state financing and marketplace coverage. The Congressional Budget Office's 2026 outlook projected a net increase of 7.5 million people without insurance in 2034 attributable to the law's Medicaid changes, while also discussing enrollment records and other adjustments. This is a projection for

2034, not a measured count of people losing insurance in October 2026. KFF summarized the legislative provisions, including work and reporting requirements, restrictions affecting provider taxes, and changes to the financing architecture (CBO, 2026; KFF, 2025).

Medicare, Medicaid and the ACA must remain analytically distinct. Medicare is principally federal insurance for older adults and certain people with disabilities; Medicaid is a joint federal–state program targeting eligible low-income populations; ACA marketplaces sell largely private insurance supported in qualifying cases by public subsidies. The 2025 law contains provisions across these programs, but it would be inaccurate to say that Medicaid restrictions are identical to an across-the-board abolition of Medicare. The publication should identify precise statutory provisions rather than rely on the ambiguous claim that “Trump cut Medicare” (KFF, 2025; CBO, 2026).

For children with autism, the causal question is whether changes in household insurance status, reimbursement, provider networks, or state benefits delay screening, diagnostic assessment, speech-language therapy, psychological support and specialist consultations. The fact that a child is recorded as autistic does not establish that a presidential administration changed the biological prevalence of autism. Policy may affect recognition, documentation and service pathways, while etiological claims require separate biomedical evidence (CDC, 2025).

A balanced interpretation also records the fiscal argument offered by supporters of eligibility verification: public funds should be targeted to beneficiaries meeting established requirements and spending growth should be restrained. The countervailing empirical concern is that verification procedures can disenroll people who remain eligible but cannot navigate administrative requirements. Arkansas’s experience with work requirements illustrated this risk, including substantial coverage losses. The Mexican policy evaluation should therefore measure both intended budget savings and unintended barriers to care, rather than treating cost reduction alone as a welfare gain (KFF, 2025).

2.9. Mayo Clinic: advanced clinical capability does not equal universal access

2.9.1. Mayo Clinic: specialization, referrals and the limits of an export model

Mayo Clinic is a particularly informative US example because it combines specialist clinical teams, academic research, integrated diagnostics and international patient coordination. Its official international patient information describes assistance with appointment planning, insurance, cost estimates and travel and makes clear that international patients may face charges and payment arrangements. This is a strong illustration of clinically sophisticated institutional coordination, not evidence that the United States offers free universally available specialist care or a scalable supply of physicians to Mexican rural areas (Mayo Clinic, n.d.).

A Mexico–US technical collaboration could adopt quality-improvement methods, training for complex diagnostic pathways and carefully governed second-opinion systems from centers such as Mayo Clinic. However, each such arrangement must specify who pays for specialist time, patient data safeguards, service eligibility, interpreter arrangements and whether patients are referred out of country. An international referral programme for a small group cannot substitute for first-contact care and long-term services near patients’ homes. The article consequently treats Mayo as a relevant institutional comparator, not a political endorsement or a reason to ignore US research.

Mayo Clinic serves as a useful institutional case because its capacity for complex diagnostics, specialist treatment, research and international patient management coexists with insurance-network restrictions and financial procedures. Its international patient information instructs applicants to verify insurance, obtain estimates, and discuss deposits and payment options. Its insurance guidance distinguishes commercial contracts, Medicare, Medicaid and other plans and cautions that network access depends on the particular coverage arrangement (Mayo Clinic, 2026a, 2026b). The institution therefore illustrates the distinction between clinical quality and universal financial accessibility.

The lesson is not that Mayo Clinic offers an unsuccessful or substandard system. Rather, even an exceptionally capable center cannot be a substitute for a public-health network that identifies symptoms early, maintains primary-care relationships and finances follow-up. Referral to a tertiary center cannot compensate for missing local developmental screening, speech-language professionals, educational accommodations or household transport resources. To evaluate a Mexico–United States collaboration, the relevant quantity is not the reputation of the partner institution but the number of Mexican patients and clinicians who can access a defined service under a lawful, funded, reproducible agreement.

A Mayo-type partnership may support virtual case conferences, training fellowships, complex diagnostic protocols, quality assurance and research collaboration. It is much less plausible as a general-purpose supplier of primary-care doctors to remote Mexican municipalities, especially without evidence of spare clinician capacity, local licensing and a financing arrangement. Consequently, the United States should not be

rejected because it has autism prevalence data or world-class hospitals; nor should it be selected automatically because it possesses prestigious facilities. The relevant policy instruments and their cost structures differ.

The Mexican design should separate a domestic basic benefit package, contracted cross-border second opinions and optional advanced referral mechanisms. Foreign tertiary referrals should require predefined medical eligibility, transparent prices, informed consent, data-protection safeguards and budget impact evaluation. Without these protections, an international hospital partnership could expand access for a small group while diverting resources from local primary care. The program should report both specialist results and opportunity costs for patients who would otherwise receive care in Mexico.

2.10. Autism surveillance, causation and the auxiliary research document

2.10.1. Autism evidence and the limits of genetic or cloning analogies

The CDC Autism and Developmental Disabilities Monitoring Network reported that approximately one in 31 eight-year-old children at 16 US surveillance sites were identified with autism in 2022. This is a site-based estimate with substantial geographic variation; it is not proof that exposure to a particular administration, vaccine, medical experiment or cloning technique caused those diagnoses. Differences in ascertainment, access to assessment and clinical documentation affect recorded prevalence (Shaw et al., 2025; CDC, 2025).

Research on cloned non-human primates, genome editing and embryo technology concerns biological mechanisms, experimental models and ethical regulation. It should not be used to infer that human autism is caused by such studies or that political leaders are intentionally generating autistic populations. The separate auxiliary text discussing public health, intergenerational ethics and 'healthy genes' is largely repetitive and supplies no identifiable source chain for those assertions. Its legitimate contribution is conceptual—questions about collective responsibility and duties to future generations—not empirical evidence of autism etiology. Stronger science requires the article to keep biomedical capability, speculation about misuse and established causal findings rigorously separate.

CDC surveillance released in 2025 identified autism spectrum disorder in approximately one in 31 eight-year-old children across the 16 Autism and Developmental Disabilities Monitoring Network communities participating in the 2022 surveillance year. This is an identified prevalence among surveillance sites, not a nationally representative biological incidence measurement. The network documents striking geographic differences and changes in diagnostic ascertainment, service use and identification. A higher recorded prevalence may reflect multiple mechanisms and cannot, without etiological analysis, establish a new environmental or political cause (CDC, 2025).

The auxiliary material on cloning, embryos, primates, public health, and research governance should be used to formulate a question about ethical oversight, not to infer that cloning experiments explain autism or that genomic work provides evidence of a deliberate policy to increase autism rates. Primate somatic-cell nuclear-transfer research is a distinct field with different aims, methods and endpoints; without a transparent causal pathway, population denominator and independent replication, it has no evidentiary capacity to explain differences in autism identification. The same caution applies to COVID-19 origin disputes, for which the available evidence does not establish a connection to developmental screening or to the policy effectiveness of *Mais Médicos*.

A scientifically testable research program would identify an exposure, establish its temporal precedence, compare appropriate control groups, measure diagnostic reliability, report uncertainty and control confounding. For health administration, the stronger immediately actionable outcome is the interval from first developmental concern to initial assessment, formal diagnosis and publicly financed intervention. These can be measured across Mexican states without making unsupported genetic or political assertions.

Autism also requires a cross-sector definition of continuity. A clinical referral may fail if the school system does not receive a functional care plan, if family travel costs exceed income, or if insurance and public-program rules disagree. The proposed program should use a longitudinal service indicator that records whether the child received each stage of care, not only whether a physician completed an initial examination. This makes autism a stress test of governance, not a justification for choosing a foreign partner on the basis of headline prevalence alone.

2.11. Why autism distinguishes nominal access from functioning health-system integration

One programme can hire a general practitioner and raise the probability that an underserved family receives an initial clinical assessment. A separate programme can shorten waiting lists for selected procedures. Yet a child with communication differences or an adult with previously unmet support needs may remain without coordinated follow-up where referrals are untracked, transport is unavailable, professionals have no shared record or educational institutions are excluded. Thus autism is a tracer of the interfaces among public

provision, specialty queues, municipal social services and families, not a proxy for autism prevalence or national clinical quality.

The proposed measurable chain begins with age-appropriate access to generalist services; tracks developmental concern recognition, referral appropriateness and acceptance; records the number of days to indicated specialist assessment; then assesses family receipt of clear information, educational support, mental-health care where relevant and follow-up after twelve months. Denominators must be defined by eligible patients rather than by counted consultations. These indicators allow testing whether a generalist programme and a specialist programme complement each other in practice (Hyman et al., 2020; Lord et al., 2020).

The Brazilian policy distinction must be precise. The programme launched in 2013 combined provision of primary-care doctors with training and service-investment dimensions. The 2025–2026 specialist programme is a distinct policy instrument that targets specialist access while being administratively associated with the Mais Médicos framework. The Ministério da Saúde reported about 2,000 specialist participants by August 2026 and cited priority surgical and clinical areas; administrative membership in a policy family does not establish completed referrals between individual generalists and specialists (Ministério da Saúde, 2026).

III. Governance of the SUS, Health Consortia, and Physician Deployment

3.1. Health System Components and Responsibilities

WHO (2007) identifies interdependent components of a health system, including the workforce, service delivery, information, financing, and leadership and governance. Mais Médicos intervened directly in the workforce; its results also depended on municipal resources, specialist referral, finance, and intergovernmental coordination.

Brazil's Law 8,080/1990 calls for regionalized, tiered organization of the Unified Health System (SUS). Article 10 authorizes municipalities to form consortia to jointly deliver the services for which they are responsible. Law 11,107/2005 and Decree 6,017/2007 regulate federative cooperation and associated management, potentially covering planning, regulation, oversight, and authorized joint provision (Brazil, 1990, 2005, 2007).

3.2. Consortia as Organizational Networks

Provan and Kenis (2008) provide the main framework for analyzing consortia. Their work concerns networks of autonomous organizations coordinating to achieve results that individual organizations cannot deliver as effectively alone. Network effectiveness depends on governance arrangements, trust, membership, and coordination needs. This framework fits municipalities that retain autonomy while sharing demand, resources, and services.

Nascimento et al. (2021) compared Brazilian municipalities that joined public health consortia in 2009–2010 with municipalities that remained outside until 2015, using a difference-in-differences design. Membership was associated with more medical appointments and outpatient care and fewer infant deaths. The result does not establish that every consortium works well, but it demonstrates that intermunicipal cooperation can have measurable effects.

3.3. Published consortium interviews: CIOESTE, CONSIM and CISMEPA

The study interviews help identify practical coordination mechanisms. CIOESTE reported that a consortium can represent municipalities in dealings with hospitals and state and federal authorities, and can pool demand where smaller municipalities cannot hire particular specialists individually. CONSIM described shortages of resources, technical staff, and state support, while identifying joint purchasing, price negotiation, and resource sharing as advantages.

CISMEPA presents a different institutional arrangement. The Dra. Zilda Arns Regional Hospital project involved the consortium and member municipalities, but the hospital passed to state management in 2016 and now operates under the Rio de Janeiro State Health Secretariat (CISMEPA, 2026). The consortium still has an important regional role in the SAMU 192 emergency service. Different parts of a patient's pathway thus fall under different organizations. The question, following Provan and Kenis (2008), is whether they coordinate effectively, without attributing powers to the consortium that it does not possess.

3.4. Mais Médicos: Expanding Structure without Presuming Outcomes

Law 12,871/2013 created Mais Médicos to address shortages in priority areas, strengthen primary care, and train human resources for the SUS (Brazil, 2013). Silva et al. (2018) estimated 14,462 additional physicians across 3,785 municipalities and 34 Indigenous Special Health Districts, at an annual cost of approximately US\$1.1 billion, 92.6% federally financed. The program was a large intervention in health system structure.

Local capacity nevertheless varied. Soares Neto, Machado, and Alves (2016) found that 65.2% of facilities receiving physicians had medium-quality infrastructure; lower municipal development and location in the North or Northeast were associated with poorer infrastructure. One federal program thus entered facilities with markedly different capacities.

Hone et al. (2020) estimated 15.1 program physicians per 100,000 inhabitants but a net primary care workforce increase of 5.7 after displacement. They estimated an annual reduction of 1.06 amenable deaths per 100,000 inhabitants (95% confidence interval: 0.34 to 1.78 fewer deaths). The gap between gross and net supply shows why filled positions alone cannot measure success.

The following incident must be classified as a contested prescription report whose investigation rejected the alleged error; it cannot be counted as proof of a clinical mistake or as evidence against the competence of Cuban physicians generally.

3.4.1. A suspected Cuban prescribing error that an investigation did not confirm

On 22 November 2013, *Folha de S.Paulo* reported that Cuban physician Isoel Gómez Molina, who was serving in the *Mais Médicos* programme in Feira de Santana, Bahia, would return to clinical duties after a temporary suspension arising from a disputed dipyron prescription. An allegation circulated that forty drops had been prescribed as a single dose for a child. The child's mother, however, denied this interpretation and said the doctor had instructed her to give ten drops at a time (*Folha de S.Paulo*, 2013a).

The following day, *Folha* reported the outcome of the municipal inquiry: the commission, which included municipal health authorities, Ministry of Health and state programme representatives, and the physician's tutor, concluded that the prescription had not been incorrect. Forty drops referred to the daily quantity divided into four administrations, each of ten drops at six-hour intervals. The municipality described a difference between the convention of recording a daily amount and the convention of specifying each administration. Before resuming work, the doctor was expected to receive additional training in Brazilian prescribing practices (*Folha de S.Paulo*, 2013b).

This is not evidence that Cuban physicians as a group are clinically incompetent. It illustrates a distinct and more defensible concern: differences in prescription notation, patient communication and national practice standards can generate misunderstanding, particularly when staff move rapidly between systems. Training and supervision are appropriate preventive responses. The newspaper accounts do not report patient harm, an overdose, or a substantiated clinical mistake. Treating the allegation as proven would contradict the reported inquiry.

The case also exposes why workforce assessments must separately measure professional qualifications, language competence, clinical documentation and observable outcomes. The number of doctors recruited says nothing by itself about medication safety. A Mexico partnership should therefore require adaptation to national prescription conventions, clinical protocols and patient-facing instructions regardless of whether professionals come from Cuba, Canada, Chile, Costa Rica or the United States. This proposal follows the documented communication issue; it is not a causal evaluation of the *Mais Médicos* programme.

3.5. Remote Populations and the Limits of Physician-Centered Policy

Pereira et al. (2016) recorded 294 physicians across 34 Indigenous Special Health Districts and 3,390 in municipalities with certified rural quilombola communities during the program's first phase. This demonstrates expanded medical presence, but does not establish the availability of every other necessary service.

Distance, irregular transport, incomplete coverage, and difficulty retaining professionals continue to shape access in remote Amazonian settings. Medical presence should therefore be assessed together with transport, medicines, diagnostic tests, and referral mechanisms. WHO's framework reinforces the point that the workforce is only one health system component.

3.5.1. What the federal audit actually established about the PAHO agreement

The Brazilian Federal Court of Accounts examined the *Mais Médicos* programme under Acórdão 360/2017–Plenário, proceeding 027.492/2013-3, decided on 8 March 2017. Its assessment distinguished observed improvements in programme access from financial oversight deficiencies. The tribunal reported signs of irregularities in advance payments to the Pan American Health Organization (PAHO/OPAS), weaknesses in tracking adjustments to the cooperation agreement, potentially uneconomic advisory arrangements and insufficient financial planning (TCU, 2017).

Of particular importance for this article, the tribunal required more analytical expense reports and examination of the flows transferred by PAHO to the Cuban government. The published decision identified limits to

Brazilian oversight of sums subsequently administered outside the tribunal's direct jurisdiction. The court's reasoning expressly distinguished the transfer role of PAHO from payments subsequently made to Cuban physicians by Cuban institutions. These findings support demands for transparent contracts and traceable remuneration but do not, by themselves, prove that any particular Cuban political leader personally received those funds (TCU, 2017).

The analytical consequence is that two questions must not be collapsed. First, did the physician-deployment model increase access in Brazilian underserved municipalities? The TCU acknowledged evidence of effectiveness. Second, did intergovernmental financing and physician remuneration comply with adequate standards of documentation and public accountability? The TCU identified deficiencies requiring corrective action. A Mexico policy based on this experience needs separate indicators of access, contractual fairness, wages received by physicians, clinical safety and independent audit (TCU, 2017).

Nor should these audit results be confused with the interviews in the user's health-consortia research. Perceptions of corruption can motivate hypotheses and governance controls; they do not establish an offence by an interviewee or a particular municipality. Likewise, coordinating SAMU ambulances does not demonstrate authority or operational integration across family medicine, developmental assessments and specialist referrals. An autism care pathway requires its own evidence of referral completion and sustained follow-up.

3.6. Cuba: Rapid Recruitment, Contracts, and Dependence

Cooperation with Cuba enabled rapid workforce expansion. Kirk, Kirk, and Walker (2016) recorded approximately 11,400 Cuban physicians in Brazil in 2014. Baggott and Lambie (2019) examine health assistance, foreign policy, and foreign exchange as concurrent motives. The agreement warrants both health and contractual analysis without assigning it one exclusive purpose.

Contractual conditions must be considered separately from clinical quality. For one stage of the agreement, Brazil's Federal Court of Accounts recorded a stipend of R\$10,000 per physician and direct payment of approximately R\$2,242.80 to the professional, with the difference controlled through Cuban institutional arrangements (TCU, Decision 360/2017). This supports demands for transparent contracts, verifiable remuneration, and professional autonomy; it does not, by itself, prove personal enrichment by officials.

The 2018 withdrawal exposed dependence on a single international partner: approximately 8,300 physicians gradually left the program (PAHO, 2018a). Using the withdrawal as an exogenous shock, Sliwa Ruiz et al. (2026) found a persistent reduction in chronic disease care in municipalities more reliant on Cuban physicians, while services for immediate needs recovered sooner. They detected no corresponding change in the study's final health outcomes. Those findings concern the measured period and indicators, not the whole history of PMM.

3.7. Médicos pelo Brasil and Institutional Comparison

Law 13,958/2019 established Médicos pelo Brasil (MpB) to expand provision in hard-to-staff or highly vulnerable places and promote training in family and community medicine (Brazil, 2019). Its design emphasized national selection, training, incentives, and retention. Santos et al. (2023) reported 97.1% of positions filled and 95.4% initial retention over the first nine months, with a higher relative concentration in remote rural areas and Indigenous health districts. Because the authors were linked to the implementing agency and the evaluation covered an early period, these are implementation findings rather than proof of final impact.

The comparison between PMM and MpB uses common indicators: positions filled, territorial distribution, retention, turnover, referral, and outcomes. A 2025 ministry technical note compared PMM, MpB, and conventional contracts from July 2022 to June 2024. It found greater stability under federal arrangements, with differences by vulnerability category and period (Ministério da Saúde, 2025). Section 4 presents the detailed figures.

3.8. Synthesis

WHO (2007) identifies system components; Donabedian (1988) separates structure, process, and outcome; Levesque et al. (2013) examines whether a patient can navigate the system; and Provan and Kenis (2008) explains how autonomous organizations coordinate care. The other studies supply evidence for testing parts of this framework in the United States, Australia, Brazil, and Mexico.

3.9. What the health consortia interviews show—and what they do not

The interviews with consortia in Brazil must be read as institutional process material. They may show administrative capacity to coordinate transport, particularly SAMU emergency ambulance arrangements, and suggest that municipalities can collaborate in procurement or regional operations. They do not establish that

those consortia directly manage longitudinal referral pathways between Mais Médicos generalists and Mais Médicos Especialistas, that they furnish developmental paediatrics or autism psychiatry, or that they have authority over every municipal SUS delivery responsibility. These limitations follow from the stated scope of the interviews, and should remain explicit rather than generalized into national effectiveness claims.

To transform organizational proximity into actual coordination, a participating municipality would designate a clinical pathway manager; establish consent-based referral tracking compatible with municipal and state health systems; identify specialized diagnostic and rehabilitation capacity; and distinguish urgent SAMU transportation from routine outpatient referral and longitudinal family support. Specialist queues and generalist teams should share feedback and closure status. Intermunicipal consortia could host selected logistics and referral services only through explicit delegated authority, funding and accountability. This is a proposal for further evaluation, not a reported accomplishment.

The interview interpretation also clarifies the autism test. In the absence of an authorized municipal owner for referral completion and follow-up, ambulances may transport patients efficiently while the patient still lacks a clinician responsible for integrating referrals, school accommodations and family support. The two programmes cannot be said to improve one another solely because both operate within SUS. The dependent variables must be distinct: emergency-response performance, primary-care attachment, specialist appointment completion, diagnostic quality, and family continuity.

IV. Brazilian Results: Physicians, Retention, and Specialist Access

4.1. Outcomes of the First Mais Médicos Program

Mais Médicos brought physicians to small municipalities, remote areas, and urban peripheries. In more than a thousand participating municipalities, an evaluation reported by PAHO found that primary care coverage rose from 77.9% to 86.3% between 2012 and 2015, while the proportion of hospitalizations for ambulatory care-sensitive conditions fell from 44.9% to 41.2%. These associations in particular municipalities and years do not establish that the program alone caused the entire change (PAHO, 2018a).

Recruitment helps explain why more people could obtain an initial consultation. It does not establish how long patients waited for specialists, whether treatment was completed, or whether families received follow-up. Those questions require observation of the patient pathway (Levesque et al., 2013).

4.2. Médicos pelo Brasil and the Relaunch of Mais Médicos

MpB introduced another recruitment and training arrangement for primary care. A Ministry of Health technical note compared retention and turnover among PMM, MpB, and conventionally contracted family health physicians in July 2022–June 2023 and July 2023–June 2024. In the first period, mean retention in municipalities with very high vulnerability was 8.21 months for PMM physicians and 6.02 months for conventional physicians; the note reported lower retention for MpB in that category. In the second period, conventional retention fell to 5.35 months, PMM stayed near eight months, and MpB improved (Ministério da Saúde, 2025).

Turnover among conventional physicians in municipalities with very high vulnerability rose from 145.63% to 185.67% between the periods; PMM turnover was 50.46% in the second period. MpB also reduced turnover in that vulnerability category. These are administrative measures of team stability, not randomized estimates of each program's design effect or clinical outcomes for autistic patients. In May 2024, the ministry counted 20,890 PMM and 4,447 MpB professionals. These figures indicate scale, not care quality (Ministério da Saúde, 2024, 2025).

4.3. Cuban Cooperation and the Risk of Disruption

Cooperation with Cuba filled many PMM positions. In November 2018, Brazil, Cuba, and PAHO announced that approximately 8,300 Cuban physicians would leave by December 12. The withdrawal exposed a concrete risk: where local coverage relies on one external agreement, its termination requires rapid replacement and threatens continuity (PAHO, 2018b).

The Inter-American Commission on Human Rights (IACHR, 2026) examined complaints concerning remuneration, mobility, and working conditions in Cuban medical missions. Its report included testimony relating to Brazil, Bolivia, Ecuador, Mexico, and other countries; 83% of its 61 Latin American testimonies concerned Venezuela. A partially dissenting opinion cautioned against automatically extrapolating findings across receiving countries. The report warrants scrutiny of contracts and labor rights, but does not establish that every mission or every physician belonged to a criminal organization.

Cuba's economic crisis adds pressure but does not settle causation. Cuban statistical data cited by EFE report 450,353 international tourists in January–August 2026, 64.4% fewer than in the same months of 2025. The

report discusses economic difficulties and US pressure. It does not show that medical service exports caused the tourism decline or that the decline alone explains mission labor conditions (EFE, 2026a).

4.4. Consortia and Autism Follow-up

Interviews with CIOESTE and CONSIM managers between January and March 2026 described shared purchasing, technical support for small municipalities, pooled demand, and regional specialist recruitment. These are management accounts, not clinical evaluations. An independent longitudinal comparison found more consultations and outpatient visits and fewer infant deaths in Brazilian municipalities that joined public health consortia in 2009–2010 than in municipalities remaining outside until 2015 (Nascimento et al., 2021). The estimate cannot simply be transferred to autism or Mexico.

The specific challenge is completing the pathway after the first consultation. Among 186 Mexican families, the median time to an autism diagnosis was 27 months, and the median number of prior professional contacts was three (Zavaleta-Ramírez et al., 2020). A consortium could commission regional assessments, record completed referrals, and ensure that families return to local follow-up. Relevant measures include months to diagnosis, the share of referrals completed, specialist waiting time, and continuity of family support. This is an evaluable proposal informed by the cases, not an outcome already observed in them.

4.5. Distinguishing corruption allegations from audited financial mechanisms

Kirk (2015) documented the Cuban medical internationalism system as a mixture of humanitarian missions, professional training, diplomatic relationships and revenue-earning arrangements. A single moral account is insufficient: reported numbers of patients or surgeries do not reveal the individual net wage received, and government service export receipts do not establish a personal transfer to the Castro family. These questions require different evidence, including contracts, payment trails, independent earnings records and beneficial-ownership documentation (Kirk, 2015; TCU, 2017).

The Brazil–Cuba arrangement also needs chronological and legal disaggregation: the Brazilian federal commitment, intermediation through PAHO/OPAS, contractual payments and remuneration arrangements for individual doctors must be reconstructed with primary documents and the audit findings of the Tribunal de Contas da União. It is appropriate to examine allegations that doctors faced coercive controls or unfair pay distributions. It is not appropriate to convert those allegations into a verified personal net-worth figure for named political relatives without bank or asset records.

No judicial case number for actions filed by Cuban physicians against Brazil should be printed until the litigants, docket, court, claim and procedural disposition are independently matched. Mixing different labour proceedings or administrative cases would create a misleading impression of a single authoritative lawsuit. The article accordingly treats the case-number request as an outstanding primary-record verification task; no number is fabricated. The same standard applies to claimed personal corruption in Venezuela, Bolivia or other Cuban mission-hosting states.

V. Mexico: A Canada-Centered Proposal and a Testable Adaptation

5.0. Medical knowledge, scientific education and the Mexican CKI study

De Angelis (2026), in *From Cultural Myths to Strategic Place Marketing, Integrating Knowledge and Intelligence*, examined the relationships between culture, knowledge and intelligence through twelve online semi-structured interviews with students affiliated with the National Autonomous University of Mexico, Tecnológico de Monterrey and the University of Michigan. The published model reports a positive coefficient between knowledge and intelligence of 0.42 in the Mexican subsample and 0.81 in the United States subsample. Its stated limitation is the small sample of twelve students. These coefficients concern the constructs of this exploratory model, not the intelligence of national populations or the competence of physicians (De Angelis, 2026, pp. 11–16).

The study is relevant to public healthcare because it distinguishes generating or acquiring knowledge from using knowledge in decisions. In medical services the analogous institutional question is whether clinical guidelines, diagnostic capabilities and specialist findings reach the generalist and the patient in time to inform treatment. The CKI findings offer a conceptual mechanism for investigation, not direct evidence that deficient scientific literacy causes clinical errors. Demonstrating such causation would require physician-level assessments, institutional practice observations, audited adverse-event classifications and control for workload, staffing, case severity and documentation standards.

An older US educational comparison reported lower bachelor's-degree completion among Latinos than several other racial or ethnic population groups, and Arevalo et al. (2016) discussed socioeconomic resources, campus climate and support structures affecting Latino graduation. Those US population data cannot be applied

indiscriminately to Mexican physicians, Brazilian clinicians or Chilean health workers. They instead reinforce the need to distinguish educational opportunities, professional training and clinical performance as separate empirical variables (Lopez & Fry, 2013; Arevalo et al., 2016; Barrera, 2014).

Patient-safety studies provide a distinct empirical basis for examining medical service quality. The Brazilian estimate of roughly 55,000 annual deaths associated with healthcare-related failures circulated in an IESS–UFMG analysis using hospital information from 2017–2018; its underlying method and avoidability assumptions must be specified before using the estimate as a national count of physician-caused deaths. The WHO figure of five deaths per minute from unsafe care concerns the world, not Brazil. Neither study demonstrates that a national educational pattern caused these events (IESS/UFMG, 2018; WHO, 2019; Organização Nacional de Acreditação, n.d.).

Chile has attained better results than Brazil on some science and reading indicators, including OECD PISA 2022 thresholds. That comparison helps motivate attention to training and capacity to interpret evidence. PISA tests school-age pupils rather than practicing clinicians and therefore cannot establish lower rates of medical mistakes in Chile or a direct ranking of national clinical competence. Comparable patient safety data would require common adverse-event definitions, denominators and reporting coverage (OECD, 2023).

For the Mexico proposal, the relevant research question is how professional knowledge can be taught, transferred and acted upon across municipal primary care, specialist clinics and public institutions. Canada is examined in terms of training programmes, scientific research and the practical transmission of expertise rather than presumed physician abundance. Evidence of commercial exchange in intellectual assets should be documented separately through royalty and licensing flows, patents, research collaboration and medical exports; none of these indicators alone establishes superiority in patient outcomes.

5.1. A Historical Mexican Source and a Current Governance Question

5.1.1. Why Mexico needs a defined decision rule rather than a symbolic partner

The central Mexican policy problem is not a shortage of international goodwill but the mismatch between the location and continuity of primary-care services and the needs of historically underserved populations. A bilateral agreement must therefore begin with a baseline of municipal vacancies, consultations, avoidable hospitalizations, prenatal-care continuity, medical-school output, and referral delays. These quantities are neither interchangeable nor uniformly measured: a physician registered nationally may not be delivering full-time clinical sessions in a remote municipality, and a clinical appointment does not guarantee continuity or diagnostic access. An agreement justified merely by a national physicians-per-population ratio would risk reproducing the gap between announced recruitment targets and operational capacity (WHO, 2007; OECD, 2017; Hone et al., 2020).

The proposed intervention has three separable objectives. First, increase the effective supply of Mexican clinicians through retention, placement, residency support, and supervised training. Second, improve the productivity and reliability of existing services through referral protocols, shared records, and multidisciplinary teams. Third, enable limited international expertise to transfer organizational knowledge and provide carefully circumscribed specialist support. Only the third objective requires an external country; even then, foreign institutional expertise need not imply the physical relocation of hundreds of foreign doctors. This distinction makes the policy measurable and protects the population against dependence on an external deployment that might terminate after a diplomatic disagreement.

The counterfactual also matters. The evaluation should ask what would have happened under a Mexico-financed domestic recruitment and retention program alone, under a Costa Rican primary-care redesign, and under a US specialist teleconsultation arrangement. Canada should be selected only if its contribution exceeds the measurable value of these alternatives at an acceptable cost and without transferring its unmet healthcare needs to Mexico (Marchildon, Allin, and Merkur, 2020; WHO, 2010; CIHI, 2025).

Mujeres célebres de México documents a specific contribution to care: María Josefa Vergara y Hernández dedicated her estate to charitable work in Querétaro, and a hospital was named for her. Hernández (1918, pp. 83–84) also reports that some assets were used for purposes other than she intended. The episode raises a precise governance question: how can resources assigned to care be shown to reach the intended service? The book is historical evidence about philanthropy; it does not measure today's Mexican health system or constitute a sample of contemporary women physicians.

Mexico also has its own record of health leadership and research. González-Block (2009) documented how research influenced reform and institutional capacity. Interviews with quality leaders in Mexico's public health sector identified barriers in governance, information, and interinstitutional coordination, leading the authors to recommend shared goals and aligned quality policies (Dobova et al., 2018). This is evidence about specific institutional barriers, not an inference that Latin American leaders lack ability as a group.

5.2. A Delimited Comparison with Chile

5.2.1. Chile and Costa Rica as meaningful counterfactuals

Chile and Costa Rica are not decorative comparison countries. Chile provides an alternative institutional landscape of mixed financing, public guarantees, and service organization; Costa Rica offers an integrated public-insurance and primary-care experience linked to the CCSS and the geographically assigned EBAIS teams. Both may be informative to Mexico, yet neither country's design may simply be transplanted into IMSS-Bienestar, IMSS, ISSSTE and state provision without analyzing budget authority, information systems, rural geography and the status of medical employees. An EBAIS-inspired team is an organizational proposal, not an evidence-based assertion that Costa Rican doctors can leave their posts for Mexico (OECD, 2017).

The selection exercise consequently distinguishes institutional transferability from labor-export capacity. A country with an effective primary-care team model may be a useful training partner despite being unable to export practitioners; conversely, a state capable of financing advanced interventions may remain unsuited to large-scale community staffing. The appropriate empirical test documents each country's training places, available generalists, specialist waiting times, medical-registration requirements and willingness of individual professionals to relocate, and then asks which capabilities Mexico cannot produce locally at lower cost. Cross-country comparison without such denominators would produce an attractive but untestable narrative.

Michelle Bachelet served as Chile's health minister from 2000 to 2002 and later served two presidential terms. The AUGE reform, implemented in 2005 before her first presidency, established explicit guarantees for priority services and additional financing. It would therefore be inaccurate to credit her personally with creating AUGE (WHO, 2015, 2021). Her career illustrates the political visibility of a health professional; AUGE illustrates an institutional instrument for defining benefits and obligations. Her withdrawal from the candidacy for UN secretary-general, announced on September 19, 2026, is a recent political event, not a measure of health outcomes (EFE, 2026b). For Mexico, the useful comparison concerns explicit guarantees and verifiable care pathways.

5.3. Physicians for Mexico and Interinstitutional Coordination

5.3.1. Mexican governance, financing and implementation boundaries

The Mexican Ministry of Health should control program goals, geographic eligibility and clinical quality criteria, while the federal and state delivery institutions retain responsibility for legal employment and patient access. A federal–state coordination committee should publish quarterly deployment and retention data, distinguishing approved posts, funded posts, vacancies and hours actually worked. Universities and specialty colleges should audit curricular alignment, language proficiency and supervision rather than simply certify attendance at training events. The international counterpart should never become the sole controller of appointment lists, salary records or patient-level data.

Regional consortia can pool scarce resources for developmental pediatrics, imaging, laboratory diagnostics, psychiatry and rehabilitation, but pooling is not automatically efficient. The arrangement needs referral rules, transport financing and a named institution responsible for each missed appointment and delayed diagnosis. For autism, the relevant unit of service is the child's pathway from concern and screening to assessment, educational accommodation and family support, not merely the number of doctors added to the payroll (WHO, 2007; Rice et al., 2020; Shaw et al., 2025).

Financing must be additional rather than substitutive. One account would cover Mexican clinician retention and training; another would cover any Canadian technical services; a separately audited account would cover accommodation, translation, travel and licensing. This separation permits the public to determine whether expenditure benefits Mexican care capacity or compensates foreign intermediaries. It also makes discontinuation feasible if objectives are not met. The central recommendation is institutional capacity building under Mexican control, with any personnel mobility treated as a secondary, optional mechanism.

Mexico had 2.7 practicing physicians per 1,000 inhabitants against an OECD average of 3.9 (OECD, 2025). An expansion informed by PMM could prioritize persistent vacancies, direct contractual remuneration, supervision, defined terms, and training for Mexican professionals. It could recruit Mexican physicians willing to work in these locations and explore international cooperation for temporary shortfalls. The cited evidence does not support excluding Mexican physicians on the basis of nationality (OECD, 2025; WHO, 2026).

Mexico's April 2026 decree establishing the Universal Health Service brought IMSS, IMSS-Bienestar, ISSSTE, and other public institutions into a coordination framework. Its gradual implementation offers an existing setting for testing referrals and counter-referrals (Presidencia de la República, 2026). An autism pilot could link a primary care physician, regional specialist assessment, family support, and documented follow-up. Zavaleta-Ramírez et al. (2024) observed variation in diagnostic instruments and interventions across Mexican centers; additional physicians without protocols and coordination cannot guarantee a consistent pathway.

5.4. Canada as a Potential Partner, Subject to Capacity

5.4.1. What Canadian health governance can actually supply

Canada's provincial and territorial delivery systems, together with national health information and professional networks, make it a plausible collaborator in population-oriented family medicine, health-system measurement, patient navigation, quality improvement and clinical training. The Canadian model is not uniform: provincial remuneration, scope of nurse practitioners, community-team arrangements and rural incentives vary considerably. Mexico should consequently negotiate specified deliverables with willing Canadian universities, hospitals, professional bodies and provinces rather than assume the federal government can assign licensed clinicians abroad. The national framework should articulate goals, and implementation contracts should identify each participating institution (Marchildon, Allin, and Merkur, 2020).

The domestic supply constraint is severe. The Canadian Institute for Health Information reports that 5.7 million Canadian adults lacked a regular primary-care provider in 2024, that family physicians per 10,000 residents declined from 11.8 in 2020 to 11.5 in 2024, and that meeting existing demand was estimated to require an approximately 49% increase in family physicians (CIHI, 2025). These measures do not indicate that no Canadian doctor can ever work overseas; they demonstrate why a government-sponsored mass export would lack a responsible evidentiary foundation. The prior manuscript treated the country choice as if expertise and excess staff were the same resource. They are not.

The defensible Canadian contribution consists initially of educational exchanges with trained Mexican physicians remaining in Mexico, faculty visits, bilingual tele-mentoring with locally responsible clinicians, rural-health workforce planning, referral design, family-medicine curricula and applied research. This is not a semantic substitution for *Mais Médicos*: it is a different policy instrument that cannot be credited with immediately filling clinical vacancies. Mexico must continue domestic recruitment and, if necessary, separate verified international recruitment from other eligible countries. Canada's role is to help make that dependence temporary.

Canada and Australia belong to the Commonwealth, but membership does not create a common medical workforce or make physicians automatically available to Mexico. The US Centers for Disease Control and Prevention estimated that about one in 31 eight-year-old children were identified as autistic in the US communities studied in 2022. That figure indicates needs for diagnosis and support in the United States; it does not establish a surplus of Canadian physicians (CDC, 2025). Canada acknowledges its own physician shortages and has adopted measures to attract internationally trained doctors (Government of Canada, 2025).

Cooperation with Canadian institutions could begin with joint training in child development, specialist teleconsultation, and protocol evaluation, without assuming large-scale migration. Any proposal for in-person recruitment would first need to establish available capacity, Mexican licensure, language proficiency, employment conditions, and effects on Canadian communities. WHO's updated 2026 code provides a framework for ethical recruitment and reciprocal benefits (WHO, 2026).

The pilot should be judged by observable outcomes: positions filled, retention, time to autism diagnosis, completed referrals, continuity of support, and traceable payments. Hernández's book supplies a Mexican historical account of resources intended for care; Brazil supplies evidence on physician deployment and the risk of international dependence; Chile supplies a comparison of explicit guarantees. Mexico would determine whether a new network turns these elements into effective access.

5.5. Why the United States is not the lead physician-supply agreement

5.5.1. The US decision: ACA, Medicaid, Medicare and delivery capacity

The United States was not rejected because of autism prevalence. It remains a relevant source of highly specialized pediatric and adult medicine, academic collaboration, biomedical research and complex-care protocols. Its limitation as the principal model for a Mexico-wide physician-supply initiative is institutional: insurance is fragmented across employment-based plans, private individual policies, Medicare, Medicaid, military and veterans' schemes, and uninsured populations. Medicare is primarily a federal insurance program for older adults and some people with disabilities; Medicaid is a jointly funded federal–state program covering eligible low-income and other qualifying groups. Their populations, financing and eligibility are different, so assertions that a policy directly affecting Medicaid automatically changed Medicare benefits are analytically incorrect (Rice et al., 2020; KFF, 2025).

The Affordable Care Act, enacted in 2010 and implemented through multiple phases, was not a universal national health service. It expanded coverage through insurance marketplaces, federal subsidies, insurance regulation and Medicaid expansion where adopted. The policy reduced the uninsured share, yet significant gaps persisted because of state non-expansion, affordability, deductibles, clinician networks, geographic scarcity and administrative complexity. Saying that 'Obamacare failed' erases measurable insurance

gains; saying that it solved access ignores the distance between possession of a policy and timely access to a pediatric specialist or local family doctor. The relevant outcomes include coverage, provider availability, financial protection, avoidable delay and health status, evaluated separately (Rice et al., 2020; KFF, 2025).

During Trump's first administration (2017–2021), efforts to repeal the ACA did not fully dismantle it; changes to policy implementation and insurance regulation nonetheless affected incentives and market stability. The second administration (from 2025) introduced further changes. The 2025 federal budget reconciliation law includes Medicaid community-engagement or work-reporting requirements scheduled to take effect for affected expansion groups in 2027, subject to implementation arrangements and exemptions. KFF's analysis, based on Congressional Budget Office estimates, identified the work requirement as a major source of projected spending reduction and projected insurance losses (KFF, 2025, 2026). The article should distinguish laws already enacted in 2025, rules applied by October 2026 and forecasts for 2027 and beyond.

These developments matter to Mexico because they expose the operational risk of linking basic access to complex insurance eligibility rather than a territorially accountable primary-care team. They do not demonstrate that US physicians are intrinsically less competent or that US research is unsuitable. Rather, the US is proposed as a supplementary partner for specialized referral standards, autism diagnostics and training, not the lead model for publicly funded community recruitment. The cost and visa requirements of any US contribution must be obtained from the provider; international patient services should not be confused with publicly financed population coverage.

The exclusion of the United States from the proposed lead agreement is institutional rather than moral, ideological or medical. The country has high-level clinical research and substantial training capacity, but its workforce is distributed across private and public employment systems, states maintain licensing authority, and physician services command comparatively high remuneration. A government-to-government promise to deploy thousands of independently employed American physicians would therefore require numerous separate employers, credentials, contracts, immigration arrangements and compensation schedules. Neither the ACA nor Medicare establishes a federal surplus corps for deployment to Mexico (Rice et al., 2020).

Autism is not the reason for excluding the United States. On the contrary, United States surveillance, pediatric specialty practice, university research and sophisticated tertiary centers can contribute substantially to Mexican developmental-care pathways. The decisive distinction is between targeted technical cooperation and affordable, geographically sustained primary-care staffing. There is no verified national pool of idle American general practitioners willing to relocate to underserved Mexican municipalities under a bilateral public program. This evidentiary absence is not proof that no individual American clinician would volunteer or accept an offer.

Obama-era insurance reform improved coverage but preserved fragmented insurance, uneven state Medicaid decisions and heterogeneous service prices; the second Trump administration introduced new Medicaid restrictions with projected effects on coverage. Those facts make the American financing architecture a poor template for a Mexican scheme requiring stable national primary-care financing. They do not imply that American hospitals or medical schools should be excluded from narrowly specified research or training contracts (Rice et al., 2020; CBO, 2026; KFF, 2025).

The institutional alternative is a clearly delimited Mexico–United States technical annex: exchange of clinical protocols, second opinions for complex autism or rare-disease cases, supervised training of Mexican pediatricians and psychiatrists, and mutually agreed data-governance safeguards. Mayo Clinic illustrates potential specialized capabilities and the insurance-related limits of turning them into population-wide access. Mexico should not pay for expensive foreign specialty services without comparing their marginal benefit with expanding local multidisciplinary teams (Mayo Clinic, 2026a, 2026b).

5.6. Why Canada is selected despite a substantial domestic physician shortage

5.6.1. Solving, rather than ignoring, the Canadian shortage obstacle

The capacity question requires a binding negative rule: no Mexican-funded recruitment under the bilateral scheme should withdraw a Canadian clinician from a high-need Canadian service without explicit evidence that the placement does not worsen local access. No assertion about Canadian physicians working in Mexico can precede a register of individuals who voluntarily express interest, their current practice status, licensing, specialty, region, hours, and the relevant employer's assessment of service impact. The base-case number of Canadian physicians assigned to regular Mexican clinical posts is therefore zero until a valid audit supports a positive number. This is a statement about evidence, not an assertion that zero volunteers exist.

Four mechanisms bypass mass export without evading the policy problem. A Canadian teaching hospital could conduct time-limited training missions whose clinicians retain their ordinary Canadian positions and whose total clinical-time displacement is recorded; Canadian institutions could provide remote mentorship to Mexican clinicians with patient care legally delivered by licensed Mexican teams; joint scholarships could train Mexican

residents or faculty who contractually return to Mexican public services; and a small number of independent professionals not drawn from Canadian shortage areas might apply voluntarily once their eligibility has been verified. Each mechanism creates different costs and outcomes and must not be counted as a full-time foreign physician placed in a Mexican municipality.

A fifth mechanism can reduce pressure on Canadian resources: finance the training of Mexican trainers and establish decentralized family-medicine networks through Mexican universities, with Canadian experts designing protocols and reviewing independent evaluations rather than delivering most consultations. Such a division aligns incentives and permits Canadian participation even where its own family-medicine workforce is overstretched. The cost-effectiveness comparison should measure Mexican clinicians newly retained per unit of spending, trained professionals actually providing care after 12 and 24 months, completed developmental referrals and avoidable hospitalizations. If these metrics fail, the Canadian partnership should be revised or terminated rather than preserved for diplomatic reasons (CIHI, 2025; WHO, 2010).

Canada is selected as the proposed lead negotiating partner for *institutional capacity building*, not because it possesses a demonstrated exportable physician surplus. Its public financing of medically necessary hospital and physician services, family-medicine training structures, provincial experience with primary-care organization, and academic networks provide specific fields in which a bilateral agreement could be constructed. These features are described in the Canada Health System Review and should not be conflated with a Canadian government commitment to supply doctors (Marchildon, Allin and Merkur, 2020).

The strongest objection to a conventional export agreement is decisive: the Canadian Institute for Health Information reported that 5.7 million adults lacked a regular healthcare provider in 2024 and cited an estimated 49% increase in family physicians required to meet demand. These figures contradict any assumption that Canada could replace the Cuban contingent in Mexico without risk to Canadian patients. The analysis therefore rejects a mass deployment target. It proposes a cooperation agreement whose principal output consists of more effectively trained, retained and supervised Mexican professionals (CIHI, 2025).

Selecting a partner for a training agreement and selecting a source country for large-scale migration are distinct decisions. The first depends on institutions able to share curricula, supervise joint research and establish quality assurance; the second depends on verified vacancies, willing clinicians, salary competitiveness and lawful recruitment. Canada may plausibly meet elements of the first test and presently fails the evidentiary threshold for the second. The paper must state this asymmetry in the abstract and conclusion, instead of concealing it behind a broad recommendation to “import Canadian doctors.”

Mexico would approach the Canadian federal government and relevant provincial institutions and universities, recognizing that health-service delivery and professional licensing are substantially provincial responsibilities in Canada. No treaty can, by itself, compel a provincial medical regulator to recognize credentials or require independent medical practitioners to move abroad. An initial framework should therefore designate participating institutions and clinical disciplines before committing a budget or workforce number (Marchildon, Allin and Merkur, 2020; WHO, 2010).

5.7. Nine contractual pillars of a Mexico–Canada cooperation framework

5.7.1. Spanish language readiness and the professional-licensing gate

The linguistic obstacle is real even though many English and Spanish medical terms share Latin or Greek roots. Vocabulary similarity does not establish clinical fluency. Consent discussions, pain descriptions, family narratives, mental-health interviews, culturally embedded concepts, disability terminology and risk explanations frequently use colloquial language. An error in verb tense, negation or dosage instruction can have material consequences. The agreement therefore needs documented language competence rather than a general claim that English speakers can learn Spanish quickly.

A Canadian participant would enter one of three language tracks following a baseline assessment. Track A, for faculty or researchers not directly treating patients, requires competency appropriate to teaching and bilingual written materials, with certified interpretation where needed. Track B, for supervised clinical education with Mexican clinicians carrying legal responsibility, requires evaluated medical-Spanish comprehension and supervised simulated encounters. Track C, for independently practicing clinicians, requires an externally assessed professional proficiency standard, validated clinical simulations and approval under applicable Mexican professional and immigration law. The programme should not adopt an invented universally valid CEFR cutoff: relevant Mexican regulators and host hospitals must set competency thresholds for each scope of practice.

The training sequence can include a preparatory 8–12-week intensive language course, standardized-patient consultations, assessment of culturally sensitive autism and reproductive-health interviews, documentation exercises, and reassessment before any clinical encounter. That course length is a proposed

planning assumption, not proof that every participant can reach safe proficiency within twelve weeks. Patients should have access to informed consent in Spanish and to qualified interpreters when needed. The language budget must be specified and audited separately from physician compensation. By designing Spanish training mainly for short-term teachers and technical advisers, the collaboration minimizes recruitment pressure on Canada's shortage-affected clinical workforce.

The proposed treaty would begin with a three-year pilot in selected Mexican municipalities identified by transparent measures of physician-to-population ratios, distance to referral centers, preventable admissions and child-development service gaps. Its first pillar would be a jointly published baseline identifying current Mexican clinical posts, turnover, appointments and diagnostic delays. Without a baseline, a program may attribute improvements to international cooperation that instead reflect pre-existing investments or migration. Its second pillar would be a bilateral steering committee with representatives of Mexican public-health authorities, participating Canadian provinces, universities, independent clinicians and patient groups.

The third pillar is a Mexican employment and retention pathway. Mexican doctors and locally eligible foreign doctors would be hired by Mexican institutions through openly advertised positions with salary and benefits disclosed in advance. The fourth pillar comprises Canadian-designed continuing education delivered largely remotely and supplemented by fixed-duration faculty visits. The fifth requires training of interdisciplinary autism teams and referral managers, not only individual physicians. Together these pillars address gaps that importing physicians alone cannot resolve.

The sixth pillar is workforce protection on both sides. Canada would publish evidence that participating temporary assignments do not worsen access in the sending health region, and Mexican regulators would validate credentials for any clinician providing care. The seventh is direct payment. No government or third-party agency could retain an undisclosed portion of a clinician's salary: remuneration, taxes, overhead charges and all transfers would be itemized, separately auditable and directly accessible to the worker. These safeguards respond to lessons from Brazil–OPAS–Cuba arrangements without presuming that all international cooperation entails the same abuses (TCU, 2017; WHO, 2010).

The eighth pillar is data protection and patient continuity. The partners would use pseudonymized outcome datasets and written rules governing transfer of pediatric and genetic information, with explicit limits on secondary use. The ninth pillar establishes a public annual evaluation with predefined thresholds for renewal, amendment and termination. The agreement should not guarantee an extension absent evidence that staffing, patient outcomes and local training capacity have improved.

For legal precision, this paper labels all nine pillars as a *proposed agreement architecture*. They are neither provisions of an existing treaty nor terms accepted by Canadian provinces, medical associations, universities or private hospitals. Negotiation should begin with letters of institutional interest and a feasibility study, followed by a memorandum of understanding, a funded protocol and then recruitment only if the relevant licensing bodies permit it.

5.8. Costing, alternatives and a falsifiable physician-availability test

5.8.1. Economic model and conservative implementation scenarios

A cost estimate without a verified salary scale or an agreed recruitment count is not a budget. The paper instead specifies the prospective accounting equation: total annual programme expenditure equals domestic recruitment and retention subsidies plus training scholarships plus institutional collaboration fees plus travel and housing plus language certification plus professional licensing and insurance plus information systems plus independent evaluation. The marginal cost of a foreign clinical placement must include the employing institution's pay, social security, professional indemnity, benefits, relocation and substitution costs; multiplying a nominal salary by an unverified number of Canadian volunteers would generate false precision.

Three scenarios should be costed ex ante. Scenario 0 is Mexican domestic recruitment with no Canadian agreement and provides the policy counterfactual. Scenario 1 adds a Canadian academic and technical partnership, with no Canadian physician filling a regular Mexican clinical vacancy; this is the minimum credible proposal. Scenario 2 additionally permits individually verified Canadian professional placements, but only after eligibility, language, ethics and domestic-demand checks. A separate comparison is available with Costa Rican organizational assistance and US specialty training. None of the scenarios assumes a mass replacement of Cuban medical personnel.

The primary economic endpoints should be cost per completed primary-care consultation adjusted for quality, cost per retained clinician-year in high-need municipalities, cost per completed autism assessment, preventable hospitalization expenditure and referral completion rate. The budget should also report all foreign exchange payments, currency assumptions, administrative fees and institutional beneficiaries. Procurement and appointment records must be downloadable for public audit while protecting patient privacy. Financial stress

tests should cover currency depreciation, high turnover, recruitment delays and unilateral withdrawal of the foreign institution. A programme that survives only under ideal enrolment assumptions is not a credible public-health investment.

The total cost should be presented as a reproducible equation rather than a fabricated contract price. Let M denote the number of Mexican positions funded, S_m the annual fully loaded compensation per position, T the number of participating trainees, C_t training cost per trainee, F the cost of temporary faculty visits, I the information and evaluation infrastructure, and A independent audit and administration. The three-year direct program budget is $3(M \times S_m + T \times C_t) + F + I + A$, with the timing of capital expenditures and recurring costs explicitly separated. This expression provides no monetary estimate until actual procurement and salary records are supplied.

A second equation assesses any foreign clinician deployment: marginal cost per service-year equals compensation, licensing, relocation, insurance, travel, language support and onboarding costs, divided by verified hours of patient-facing service. A volunteer arrangement is not costless if accommodation, scheduling and supervision consume public resources. Comparisons with Cuba, Costa Rica, Chile and the United States should use common accounting boundaries; contractual transfers to a foreign government are not equivalent to physician take-home pay or to the marginal cost of delivering care.

The physician-availability test requires a registry-derived denominator, not anecdotal willingness. Before negotiating any target, Canada and participating provinces would identify doctors eligible for short service, confirm whether their domestic posts can be safely covered, determine regulatory permission to practice in Mexico and collect confidential expressions of interest. Only after written individual consent could a deployment figure be reported. If that figure is zero, the agreement should still proceed as a training and systems partnership provided its expected Mexican benefits are supported by cost-effectiveness evaluation.

The design includes a domestic-first comparator. Mexican municipalities participating in the pilot would be compared with municipalities receiving equivalent funding entirely for Mexican recruitment and training, with appropriate controls for baseline need and regional trends. The primary policy claim is not that Canadian support is inherently superior, but that the combination of institutional transfer and domestic hiring generates greater sustained access per unit of public spending than alternatives. If it does not, the bilateral model should be modified or discontinued.

5.9. Empirical outcomes, governance risks and a decision rule for Mexico

5.9.1. Empirical identification, accountability and explicit rejection criteria

The principal study hypothesis is that combining Mexican primary-care workforce measures with Canadian institutional support yields better continuity of care and workforce retention than the same domestic investment without foreign cooperation. It is not that the agreement mechanically introduces more foreign physicians. A multi-site, stepped-wedge or matched difference-in-differences design can compare municipalities receiving the intervention at different times, provided pre-intervention trends and the geography of specialist referrals are documented. The analysis should stratify by rurality, Indigenous-language needs, deprivation and pre-existing physician supply. Selection into treatment is unlikely to be random, making transparent identification assumptions essential.

Primary outcomes would be clinician retention at 12 and 24 months, regular-access coverage, time to pediatric developmental assessment, completed referrals, patient-reported continuity and risk-adjusted avoidable hospitalization. Secondary outcomes would include per-patient cost, educational referrals, workforce satisfaction and patient complaints. Each indicator requires a specified denominator, data source, observation frequency and baseline. Autism identification counts should never be interpreted alone as prevalence changes caused by government policy; improvements in screening can increase recorded case numbers while improving access and early support (Shaw et al., 2025; CDC, 2025).

The agreement must include an independent stop rule. If Canadian placements weaken an identified Canadian shortage area, their recruitment stops. If the Mexican programme fails to improve continuity or only shifts resources toward already well-served cities, it is redesigned. If a payer cannot demonstrate direct professional remuneration and the exact role of intermediaries, payment is suspended pending audit. If language assessments or professional licensing are incomplete, clinical practice is not authorized. The proposal's scientific credibility depends on its willingness to be falsified, not on the rhetorical attractiveness of the partner country.

Primary outcomes should include the number of regular primary-care consultations completed, continuity with a named clinician, avoidable hospitalizations, early developmental screening rates, time between autism concern and diagnostic assessment, completion of indicated referrals, physician retention after 12 and 24 months and household health expenditure. Secondary outcomes should measure patient experience, clinician satisfaction, rural travel time, educational collaboration, distributional equity and cost per successfully completed care

pathway. Measures should be disaggregated by municipality, rurality, income and age whenever privacy protections permit.

A staged evaluation can combine difference-in-differences designs with matched municipalities, interrupted time series and service-level audits. The assumptions of parallel pre-program trends, limited spillovers and comparable documentation quality should be examined explicitly. Qualitative interviews with Mexican clinicians, patients and school representatives can explain why an apparently adequate number of appointments does or does not lead to appropriate treatment. The study must distinguish training outputs, health-service utilization and health outcomes; none can substitute for another.

Governance risks include elite capture in procurement, contracting clinicians who do not stay, overemphasis on urban academic institutions, withdrawal of a provincial Canadian partner and diversion of funding toward costly specialty projects. Mitigation requires public tender records, independently accessible payroll verification, grievance procedures, transparent patient selection and publication of unexpected adverse effects. A program whose expenditure cannot be traced from Mexican treasury allocation to worker compensation and delivered service should fail its governance test even if publicity materials report many consultations.

The policy decision rule has three parts. Mexico should negotiate the lead institutional partnership with Canada if specific universities and provinces confirm capacity and costs within the Mexican budget. Mexico should not claim Canada can supply a mass replacement contingent unless a new, independently verified workforce assessment establishes this. Finally, Mexico should prioritize domestic recruitment and evaluate specialized US cooperation, Costa Rican EBAIS lessons and other partners as supplementary components, rather than pretending that the first signed international memorandum resolves its physician shortage.

5.10. Decision logic: why Canada is nominated without assuming an exportable workforce

Canada is not selected because it can be proven to send a larger contingent of doctors than Chile, Costa Rica, Cuba or the United States. It cannot. The Canadian Institute for Health Information reports that in 2024, 5.7 million adults did not have a regular healthcare provider and estimates a 49% increase in family physicians would be needed to meet existing demand. These figures disqualify any unconditioned promise of physician exports. The Canada proposal survives only when defined as institutional and educational cooperation with strict no-depletion rules (CIHI, 2025).

Why, then, Canada? Its decentralised public insurance arrangements offer a comparative design laboratory for financing, workforce measurement, shared clinical protocols and accountable federal–provincial division of responsibilities; its universities and clinical institutions can participate in research and teacher-training partnerships. These are opportunities for negotiated cooperation, not proof of a signed agreement or superior Canadian nationwide access. A Quebec or Ontario model cannot be imported without adaptation to Mexico's municipal, state and federal competencies (Marchildon, Allin and Merkur, 2020).

Chile's comparative advantage is different. Spanish reduces immediate clinical communication costs, its CESFAM and FONASA institutions provide regional experience, and University of Chile research partnerships may shorten implementation distances. A claim that the University of Chile is unequivocally the top university in all South America would require a specific QS ranking, edition and metric; general prestige cannot substitute for the country-level employment and workforce analysis. Chile also faces specialist-access delays and uneven territorial provision. It therefore warrants a complete competing offer, particularly for bilingual regional primary-care implementation, rather than dismissal on the basis of Canadian university reputation (OECD, 2019, 2025).

Costa Rica offers the EBAIS community-team model and the CCSS as a compact integrated public institutional comparator. Spanish and regional legal familiarity strengthen training and on-site supervision. However, workforce distribution and specialist shortages constrain any scheme involving physician relocation. Its value as a model of primary-care continuity is not evidence of a physician pool for export to Mexico (OECD, 2017).

The United States possesses extraordinary tertiary and research capacities, illustrated by institutions such as Mayo Clinic, and extensive autism surveillance and specialist expertise. But the Affordable Care Act's expansion of coverage did not abolish insurance-network limitations, Medicaid state variation, higher system costs or the separation between insurance and guaranteed specialist access. Medicare, the principally age/disability-linked federal programme, cannot be merged analytically with Medicaid or ACA marketplace coverage. US specialist centres are useful partners for training, not an identified source of thousands of willing and licensed general practitioners for Mexican public clinics (Rice et al., 2020; Baicker et al., 2013).

Cuba has demonstrated historical ability to mobilize substantial international physician contingents. But the cost, individual labour protections, exit rights, contractual transparency and state-to-state payment mechanisms must be independently assessed before considering replication. Canada cannot replace Cuba

through an equivalent large-scale deployment on presently available evidence; it offers a different and conditional model of cooperation. That distinction is the most important conclusion of the comparative selection (Kirk, 2015; TCU, 2017).

VI. Country Selection: Why Canada Is the Proposed Negotiating Partner

6.1. Selection criteria and the distinction between institutional cooperation and physician supply

The policy question is not whether a foreign government can dispatch a large contingent of practitioners immediately. It is which bilateral arrangement can improve the resilience of Mexican public-health services while meeting the economic, legal and human-rights standards that the Brazil–Cuba controversy exposed. Country selection must therefore use two tests. The first is institutional complementarity: established primary-care practices, universities, regulatory credibility, health-data competence, educational partnerships and scope for mutual learning. The second is deployable clinical capacity: independently verified eligible physicians who are willing to practise in Mexico, can obtain authorization and can be released without worsening access at home (WHO, 2010; Marchildon, Allin and Merkur, 2020).

Canada meets the proposed institutional-partner test sufficiently to justify opening negotiations. It has recognized medical educational institutions, publicly governed provincial health systems and experience with family medicine, specialist referral and interdisciplinary care. This does not mean the Canadian delivery model is uniform or that family physicians are available to move abroad. Provincial and territorial governments have primary responsibility for healthcare provision and relevant licensing is administered through professional regulation. Any bilateral proposal must accordingly name participating provinces, colleges, universities and employing organizations; a federal memorandum alone cannot authorize individual physicians to practise in Mexico (Marchildon, Allin and Merkur, 2020).

The claim that Canada can replace approximately 8,300 Cuban physicians formerly involved in Brazil, or any corresponding number in Mexico, would be unsupported. This paper rejects the use of past Cuban deployment volumes as a Canadian supply forecast. A negotiated agreement is a policy recommendation, not a pre-existing treaty or a confirmed workforce allocation (Kirk, 2015; Marchildon, Allin and Merkur, 2020).

A primary documentary finding: Brazil's Federal Court of Accounts (TCU, Acórdão 360/2017, plenary decision 8 March 2017) required the Ministry of Health to obtain analytical PAHO expense reports, partial financial statements and specific audit of scholarship payments to Cuban professionals. The court discussed the lack of reliable traceability from Brazilian transfers to individual doctors. Its record contains deliberations and calculations proposing retention above 75% in a particular contractual context, while also specifying the need for further independent financial verification. These findings identify payment-opacity and accountability risks; they should not be compressed into a blanket criminal conviction of PAHO, every Cuban physician, or the Castro family. Official judgment: <https://pesquisa.apps.tcu.gov.br/doc/acordao-completo/360/2017/Plen%C3%A1rio> (TCU, 2017).

6.2. The alternative countries and the precise reason for not selecting them as the lead agreement

6.2.1. System-wide comparison: what the countries actually finance and deliver

Cuba's system is predominantly publicly organized, emphasizes universal access and preventive care, and has developed substantial state-managed international medical cooperation. Kirk documents the historic scale, training apparatus, emergency response and its revenue-generating dimensions, particularly in his introductory chapters and accounts of Venezuelan cooperation. These observations belong alongside, not in place of, contractual evidence about worker remuneration and the quality of outcomes. Brazil's SUS is a constitutionally universal health system with federal, state and municipal implementation and a documented history of contractual physician recruitment via *Mais Médicos*. Mexico has multiple public institutions and persistent interinstitutional coordination challenges. Canada combines publicly financed medically necessary physician and hospital services with provincial governance and considerable variation in primary-care access. Costa Rica's CCSS and EBAIS architecture emphasizes territorially organized teams. The United States combines public insurance for defined categories with employer-sponsored and other private insurance, advanced specialty capacity and material gaps in access (Kirk, 2015; Marchildon et al., 2020; OECD, 2017; Rice et al., 2020; WHO, 2007).

The distinctions generate different partnerships. From Cuba, Mexico can study rapid deployment and training while declining opaque intergovernmental compensation. From Brazil, it can learn about filling underserved vacancies, monitoring disruptions and regional consortia while requiring direct salary payment. From Costa Rica, it can test geographic panel assignment and team continuity without assuming a medical labor surplus. From the United States, it can seek specialist and research cooperation without importing insurance fragmentation. From Canada, it can negotiate institution-to-institution family-medicine education and evaluation

while explicitly forbidding the presumption of a deployable physician surplus. The selected policy package must reflect these different causal functions rather than a single index of which country is 'best'.

Costa Rica offers an important model of territorially organized primary healthcare and multidisciplinary first-contact teams; the institutional value of its EBAIS arrangements does not establish an exportable surplus of all categories of physicians. A bilateral agreement led by Costa Rica could transfer local service design but faces an unresolved numerical staffing constraint and its own distributional pressures (OECD, 2017). Accordingly it is retained as a technical-learning partner, rather than designated as the principal contractual counterpart for this proposal.

The United States has highly developed biomedical research facilities, autism research and specialized training resources, but a fragmented system of financing, public programmes and private coverage. This configuration is suitable for topic-specific university and research collaboration; it does not automatically offer a coherent nationwide public workforce-transfer agreement or affordable primary-care service package for underserved Mexican municipalities (Rice et al., 2020).

Cuba demonstrates the capacity to organize large international deployments and train physicians at scale, as historically documented by Kirk (2015). However, a repeat of opaque payment intermediation and contested worker protections would undermine the proposed Mexican principles of direct remuneration and institutional accountability. This paper distinguishes the measurable social contributions of health workers from disputes about contractual financing. It neither concludes that every Cuban mission had the same financial terms nor imputes private enrichment without proof (Kirk, 2015; Tribunal de Contas da União, 2017).

Chile has relevant public-health knowledge and referral organisation, but no verified surplus of physicians for deployment has been established in the sources reviewed. It remains a comparator for policy exchange rather than a presumed staffing source. In each case, the appropriate conclusion is narrower than a national ranking: Canada is nominated as the institutional anchor for negotiation, whereas supply commitments remain evidence-dependent (WHO, 2010; Marchildon, Allin and Merkur, 2020).

6.3. Proposed legal and economic architecture of a Canada–Mexico framework agreement

6.3.1. A proposed bilateral instrument with enforceable annexes

A Mexico–Canada framework memorandum should begin with a statement that no deployment commitment exists until implementing agreements are ratified by each participating institution. Annex 1 would enumerate regions and Mexican training institutions; Annex 2 would specify services to be delivered in person or remotely, their duration and supervision; Annex 3 would set licensure, Spanish-language evaluation and insurance requirements; Annex 4 would provide cost ceilings and invoices; Annex 5 would define data access and independent evaluation; and Annex 6 would set termination rights and worker protections. Each annex would have designated legal and fiscal signatories.

Physicians must contract with the actual Mexican employer for any Mexican clinical service, or with their Canadian institution for nonclinical instructional duties, with auditable direct payment and no undisclosed salary retention. No recruitment quota should be imposed on Canadian institutions before workforce-impact evaluation. Every proposed clinical placement must satisfy Mexican qualification and immigration rules and comply with Canada's relevant provincial employment and licensing obligations. Patient safety requires explicit supervision and referral escalation. Complaint channels must be independent of recruiters and protected against retaliation. This architecture is meant to prevent the payment opacity criticized by Brazil's TCU, not to pretend that a bilateral declaration is already a binding physician supply contract (TCU, 2017; WHO, 2010).

The proposed instrument is a bilateral framework memorandum followed by enforceable implementation agreements among competent Mexican institutions, Canadian federal and provincial participants, universities and properly authorised healthcare employers. Negotiations would commence through the respective health and foreign-affairs authorities; memoranda should specify that no automatic professional licence, migration permission or public funding is created by signature alone. The initial period proposed for research purposes is thirty-six months, with a twelve-month feasibility and training phase and a twenty-four-month monitored service phase. These terms constitute recommendations, not agreed bilateral clauses.

Mexico would define participating municipalities using published indicators of untreated need, clinician vacancy, primary-care coverage, travel time, autism diagnostic waiting periods and public sector absorptive capacity. Canada would invite voluntary institutional participation in medical education, tele-mentoring, service redesign, continuing professional development and specialist case discussion. Participating clinical faculties should help Mexican programmes create supervised modules for family physicians, paediatricians, psychiatrists, psychologists and allied professionals. These modules should be adapted to Mexican law, language, epidemiology and referral resources (WHO, 2007; Donabedian, 1988; Marchildon, Allin and Merkur, 2020).

Where paid clinical work is considered, the Mexican institution—not an intermediary foreign government—would employ the clinician under a written, individually available contract. Remuneration, taxes, housing, medical indemnity, working time, occupational safety, leave, grievance procedures, ability to leave the programme and contract termination would be disclosed before recruitment. Transfers to ministries, recruiters or professional societies would be recorded separately from the clinician's wages. Programme procurement and disbursement accounts would be published in aggregate and independently audited, while individual confidentiality is protected (WHO, 2010; TCU, 2017).

Canada must not be treated as a single undifferentiated provider of physicians. The agreement would list each participating province and employer, each worker's current service location, the assessment of local shortage risk, relevant permissions for temporary absence, and Mexican credential recognition. No contract may begin without confirming Mexican practice authorization, legal immigration status, language competence, professional insurance and safeguarding provisions. Joint audit responsibility should not weaken the direct employment relationship (WHO, 2010).

Country selection is conditional, not a country-performance ranking. Canada is nominated specifically as the negotiating counterpart for advanced family-medicine training, medical education, clinical governance, tele-mentoring and autism pathway strengthening; it is NOT selected as a verified replacement source for Cuban doctors. Costa Rica contributes a territorially organised primary-care model (EBAIS); the United States may contribute specialised research and education; Chile is a public-system comparator; and Cuba is the historical large-deployment benchmark accompanied by financial-accountability disputes. None of these distinctions implies a confirmed physician surplus (OECD, 2017; Rice et al., 2020; Kirk, 2015; CIHI, 2025).

The Canadian Institute for Health Information reports that 5.7 million Canadian adults lacked a regular healthcare provider in 2024 and that an estimated 49% increase in family physicians would be required to meet current demand. Family-physician supply per 10,000 population declined from 11.8 in 2020 to 11.5 in 2024 (CIHI, 2025). These figures materially weaken any presumption that Canada could serve as a large-scale net exporter of practising family doctors. Canadian institutional competence must not be confused with spare clinical capacity. The principal agreement proposed here is therefore institutional and educational; any physician mobility is exceptional, voluntary, and conditional on demonstrated non-harm to access in the sending community.

6.4A. Contemporary Canadian workforce constraint: a decisive exclusion test

6.4. How many Canadian doctors can actually go to Mexico?

For each municipality i , calculate annual total cost $C_i = P_i + T_i + S_i + L_i + D_i + A_i$, where P represents directly paid clinician compensation, T travel and relocation, S supervision and training, L licensing and liability insurance, D digital support and interpretation, and A external audit and evaluation. Every term must be filled from published procurement or signed agreements; no assumed Canadian salary or participation level is inserted. The cost per additional full-time-equivalent physician is total incremental cost divided by verified additional full-time equivalents, with a zero-denominator case explicitly declared non-computable. Cost per additional timely autism assessment and cost per additional continuously enrolled rural patient should be benchmarked against Mexican-only expansion. A preannounced affordability ceiling and a prospective incremental cost-effectiveness assessment are necessary before expenditure approval. This framework is a calculation protocol, not a completed economic estimate.

6.5A. Verifiable financial model and decision gate

The empirically defensible answer at the date of this manuscript is that no deployable number has been demonstrated. National physician totals and density ratios do not measure the quantity willing, licensed, available, funded or ethically recruitable for an overseas programme. Nor can an academic partnership be counted as direct provision of clinical hours. A workforce survey must therefore distinguish licensed persons, full-time-equivalent supply, clinical specialty, province, current employment, rural service commitments, language skills, Mexican licensing eligibility and documented willingness to relocate or work in time-limited supervised exchange.

Phase 0 (months 0–6): bilateral needs and capacity audit, independent provincial/territorial participation decisions in Canada, mapping of Mexican shortages, publication of licensing and contracting requirements, and a public baseline. Phase I (months 7–18): two-country university and health-system agreements limited to training, clinical protocols, tele-mentoring, and local Mexican recruitment. Phase II (months 19–36): independently evaluated expansion only if improvements exceed Mexican-only comparators and ethically recruitable Canadian volunteers can be identified without damage to home services. Binding safeguards require voluntary application; disclosed direct payroll; no state or broker salary confiscation;

transparent administrative service fees; independent grievance channels; freedom to terminate employment; protection against discrimination; public audit of every disbursement; and withdrawal rights for participating Canadian jurisdictions. These are proposed legal conditions, not claims about a treaty already in force (WHO, 2010; WHO, 2026).

6.6A. Proposed treaty sequence and safeguard clauses

The verification sequence is as follows. First, Canadian participating institutions publish the maximum permissible absence of clinicians without exceeding local wait-time or access thresholds. Second, Mexican health authorities publish the posts, training capacity, salary scales and regulatory route. Third, individual professionals apply voluntarily and receive independent contract counselling. Fourth, both sides approve only the matched positions that satisfy all eligibility and workforce-protection rules. Fifth, the registered number of professionals who begin work and their actual service hours become the only legitimate deployment measures (WHO, 2010; Marchildon, Allin and Merkur, 2020).

If the verified pool is zero, the framework still has substantial content through training and governance support, but it cannot be advertised as a substitute for Cuban deployments. This zero-supply scenario is not programme failure if domestic Mexican workforce development, waiting-time reduction and diagnostic continuity can be demonstrated. It is a core ethical safeguard against substituting a diplomatic announcement for effective staffing (WHO, 2010).

6.5. Costs and financial accountability: an auditable model rather than invented prices

A defensible cost analysis requires data not contained in the books alone. For each location the budget should separate local Mexican physician payroll, any visiting clinician compensation, professional training and supervision, travel, migration and licensing expenses, malpractice coverage, information technology, interpreter or adaptation costs, infrastructure, evaluation and independent audit. Costs must be denominated by currency and date and published per physician full-time equivalent, per supervised training hour, per primary-care visit and per completed autism diagnostic pathway. Historical Brazilian or Cuban fees cannot be used as Canadian salary quotations (Kirk, 2015; TCU, 2017).

The core economic comparison is incremental cost-effectiveness: (total Mexican public expenditure under the pilot minus counterfactual expenditure) divided by the incremental outcomes attributable to the programme. Outcomes may include physician-filled rural posts, avoidable hospitalisation, timely autism evaluation and documented continuity of follow-up. The evaluation should report uncertainty intervals, alternative counterfactual specifications and the cost of achieving equivalent improvements through domestic training alone. A transparent direct-pay model can have higher visible wages than an opaque arrangement without being economically inferior; total public value and rights compliance must be evaluated together (Donabedian, 1988; WHO, 2007).

Evidence-based decision: Canada–Mexico institutional cooperation is viable as a research and negotiation agenda; Canada-to-Mexico mass recruitment is not established as viable. Mexico should not commit to a numerical physician target or a foreign-recruitment budget until a provincial/territorial Canadian supply audit, Mexican professional recognition, independently signed voluntary contracts, and a credible domestic-only cost-effectiveness comparator are available. In particular, the contemporaneous Canadian primary-care shortfall creates a presumption against extracting scarce family physicians to fill Mexican vacancies. The preferred operational route is training and retaining Mexican clinicians with Canadian academic assistance; any visiting clinical practice is subordinate to both countries' verified staffing needs (CIHI, 2025; WHO, 2026).

6.6. Operational research design and falsification conditions

The principal research question becomes: Under which workforce, institutional and fiscal conditions would a Canada–Mexico primary-care cooperation agreement improve access, retention and autism-related continuity more effectively and transparently than domestic expansion without bilateral support? Subquestion one estimates the available Canadian voluntary workforce without weakening source-country services. Subquestion two compares direct-pay contracts with arrangements involving a public or international intermediary. Subquestion three evaluates whether specialist tele-mentoring and training reduces time from first parental concern to confirmed evaluation and support services.

The preferred evaluation is a phased municipal comparison. Programme municipalities would be matched or weighted using baseline deprivation, physician density, rurality, age structure, insurance or service network coverage, pre-intervention trends, regional migration and other relevant confounders. Difference-in-differences/event-study estimates would examine parallel trends; interrupted time-series or synthetic controls may be used where treatment geography permits. The estimand must distinguish intention to treat, actual

clinician exposure and training exposure, while reporting spillovers and displacement. The cost analysis would include counterfactual domestic recruitment. Findings remain hypotheses until prospectively collected data and ethics approvals permit evaluation (Hone et al., 2020; Donabedian, 1988).

The proposal must be rejected or redesigned if participating Canadian communities exhibit worsened access attributable to recruitment; workers lack enforceable contracts; recruitment intermediaries retain undisclosed wages; Mexican licensure rules cannot be met; programme towns do not receive the promised service hours; or observed cost-effectiveness is inferior to feasible domestic alternatives. Explicit stopping conditions provide a more credible international cooperation model than targets based solely on numbers dispatched (WHO, 2010; TCU, 2017).

6.7. Findings and limitations

The main comparative finding is that institutional cooperation and clinical labour export are different outputs. Available publications support Canada as a plausible negotiating counterpart for training, clinical education, family-medicine governance and specialist collaboration, but they do not quantify an immediately available contingent. The principal Brazilian lesson is likewise two-sided: mobilising physicians can improve coverage, while the payment route and rights of practitioners require independent assessment. A competent programme cannot infer acceptable labour conditions from good patient outcomes or infer absence of patient benefit from questionable contracting (Kirk, 2015; TCU, 2017; Hone et al., 2020).

This is a comparative policy-design manuscript, not a completed bilateral feasibility study. It does not include confidential diplomatic correspondence, a signed Canada–Mexico agreement, direct recruitment commitments, independently audited current salary offers, municipal field data or completed effect estimates. The evidence base therefore supports negotiation parameters and testable hypotheses, not quantitative guarantees. The public-health and ethical value of the proposal depends on obtaining those missing data before claiming that Canada can supply physicians to Mexico (WHO, 2010; Marchildon, Allin and Merkur, 2020).

6.15. Decision matrix and contractual fallback

The article therefore specifies a staged selection procedure. In year zero, Mexico invites Canadian, Chilean and Costa Rican institutions to submit comparable offers for curriculum design, district-level referral integration, digital continuity and voluntary clinical exchange. Offers must state provider, legal authority, financial liability, number and professional credentials of participants, language standards, local workforce consequences and independently measurable performance milestones. Cuba and the United States remain mandatory reference models, but no historical mobilization figure or institutional prestige is treated as a present-day bid.

A Canada–Mexico framework could include: (1) an education and residency cooperation memorandum with named providers; (2) an annex for Mexican-funded postgraduate and bilingual-supervision placements; (3) a clinical protocol for municipal generalists to refer and track complex developmental and mental-health cases; (4) a workforce-protection annex prohibiting hiring from designated Canadian shortage areas; (5) independent public expenditure records; and (6) a patient-safety and accreditation process for any cross-border practice. Only the first three are indispensable for an institutional partnership; physician recruitment is optional and subject to evidence.

English and Spanish share substantial Latin-derived medical vocabulary but linguistic resemblance is not evidence of safe clinical competence. Canadian clinicians who work in Mexico would require tested professional Spanish, informed-consent communication training, cultural mediation and supervised clinical assessment. Translation platforms may support teaching but must not replace licensed interpreters or patient-centred informed consent for complex clinical decisions.

If the Canadian partner cannot demonstrate adequate personnel, negotiated costs or measurable improvements during a two-year training pilot, Mexico should not preserve the partnership by assertion. It should reconsider Chilean and Costa Rican institutional bids using the same scoring criteria, expand training of Mexican generalists and specialists, and procure technical assistance from whichever institution can demonstrate better delivery. The Canada choice is a falsifiable proposal, not a permanent national preference.

The primary endpoint is not total foreign doctors promised or total appointments recorded. It is a composite of active generalist coverage in underserved districts, referral completion within prespecified clinical intervals, subsequent specialist follow-up, family-reported continuity, and transparent unit cost. Autism functions as one tracer subgroup because its complex educational and multidisciplinary needs reveal whether the chain is integrated rather than simply populated with clinical professionals.

VII. Discussion and Conclusions

The Brazilian evidence requires three distinct findings to be kept separate. PMM increased medical presence, but net workforce growth was smaller than gross recruitment because of displacement (Hone et al., 2020). Federal recruitment arrangements showed greater stability than conventional contracts in the administrative comparison for 2022–2024, although this does not by itself establish clinical benefits (Ministério da Saúde, 2025). The termination of Cuban cooperation persistently reduced chronic disease care in more exposed municipalities, without a detected change in the study's final health outcomes (Sliwa Ruiz et al., 2026). The first lesson is to measure net workforce growth and territorial distribution rather than signed contracts alone. The second is to sustain specialist referral and follow-up after the initial visit. The third is to document who finances, who employs, and how much each professional receives. The proposed unlearning consists of abandoning management routines that conceal displacement, incomplete referrals, and dependence on one agreement. This is an analytical application of Cegarra-Navarro et al. (2014, 2015), not a measured unlearning effect in the Brazilian programs.

Chile offers a specific institutional mechanism: AUGE established explicit guarantees for priority services, with defined obligations and financing (WHO, 2015). Bachelet was health minister in 2000–2002, but the 2005 reform should not be attributed exclusively to her. Her withdrawal from the UN secretary-general candidacy in September 2026 is not a health performance indicator. Hernández (1918) provides different evidence: María Josefa Vergara dedicated assets to charitable work in Querétaro and a hospital bore her name, while the account records that some assets went elsewhere. This episode motivates verifiable implementation of resource commitments; it does not support a claim about the leadership abilities of Mexican women today.

For Mexico, this article proposes a territorial pilot with baseline measures and an appropriate comparison group, subject to data availability. Selection criteria would include persistent physician vacancies, time to autism assessment, and regional specialist capacity. Before implementation, evaluators would record the net number of professionals, team stability, referrals issued and completed, median diagnostic waiting time, and continuity of family support. Repeated measures could distinguish administrative coverage from care actually completed. No pilot effect is claimed as an existing finding.

International recruitment should remain complementary. It should verify the partner country's actual capacity, professional licensure, individual payments, and labor rights. Cooperation with Canada could involve academic exchanges or teleconsultation, but shared Commonwealth membership with Australia does not create an available physician contingent. Canada also faces workforce shortages (Government of Canada, 2025). US autism surveillance figures indicate US demand, not evidence that Canadian physicians can be transferred to Mexico (CDC, 2025).

This article synthesizes heterogeneous evaluations and documents alongside management interviews that were not designed to measure clinical outcomes. It neither estimates the causal effect of a Mexican program that has not been implemented nor directly compares clinical quality across countries. Its answer to the research question is therefore a testable proposal: Mexico could draw on Brazil's experience of rapid deployment while measuring displacement, protecting labor rights, diversifying cooperation, and ensuring that patients can progress from identification to specialist assessment and follow-up.

7.1. Biomedical technologies, COVID-19-origin uncertainty, and research governance

The proposal for Mexican autism care is concerned primarily with physician distribution, interdisciplinary knowledge management, and continuity. Nevertheless, emerging biomedical technologies make research governance a related concern. A supplementary source review prepared by De Angelis (2026) compares reporting by Deutsche Welle on possible SARS-CoV-2 laboratory incidents with the World Health Organization's assessments and published primate-cloning studies. This is a methodological comparison of different levels of evidence, not an assertion that these technologies caused the pandemic.

Reports concerning an alleged 2020 German intelligence estimate of an 80–95% likelihood of a Wuhan laboratory incident (Jones, 2025; Burger & Rinke, 2025) are distinguishable from independently reproducible scientific findings. WHO/SAGO (2025) assessed that the available evidence weighs toward zoonotic spillover while retaining a laboratory-related incident as an unresolved possibility owing to missing data. A hypothesized laboratory accident, deliberate genetic engineering, and deliberate release are separate propositions requiring separate evidence. Neither press reporting nor an intelligence probability estimate proves intentional production of SARS-CoV-2.

Experimental primate cloning is documented: Liu et al. (2018) reported cloned macaques; Liu et al. (2019) reported cloning of a gene-edited macaque; and Liao et al. (2024) reported advances in rhesus macaque cloning. These findings do not demonstrate human reproductive cloning, a coordinated BRICS+ cloning program, or a connection between cloning and the origin of COVID-19. Claims about such programs would

require specific verifiable documentation and cannot be inferred merely from countries' technological capabilities.

For Mexican health-system governance, the practical implication is to combine access to clinical care with independently audited biomedical research, meaningful informed consent, data protection, transparency of international collaborations, ethical review of human and animal research, and public communication that separates hypotheses from verified results. Article 11 of UNESCO's Universal Declaration on the Human Genome and Human Rights (1997) opposes practices contrary to human dignity, including reproductive cloning of human beings. An interdisciplinary research question follows: Could the convergence of cloning, genome editing, and artificial intelligence weaken individual autonomy, and which international oversight mechanisms would adequately safeguard it? This question is prospective and does not constitute evidence that such loss of autonomy is already occurring.

Appendix A. Evidence hierarchy and source-specific limitations

Administrative headcounts, self-reported consultations, workforce surveys, independent financial audits, quasi-experimental outcome studies and proposed contract specifications occupy different evidence levels. Kirk (2015) provides historical institutional reporting, substantial qualitative material and information about Cuban medical diplomacy, but his 2015 revenue estimates should not be relabeled as contemporary accounts. The Brazilian TCU audit addresses governance, payment and oversight; a clinical study of Brazilian municipalities addresses associations or causal effects under its own assumptions. Neither alone answers all dimensions of the case.

The auxiliary document provided in this research process, a three-page text headed "recent years," contains extensive duplication and a short passage on the difference between collective health protection and individually chosen health promotion. Because it does not identify the underlying chapter author or bibliographic source, it is not cited as independent empirical evidence. Its conceptual proposition can be evaluated using identifiable public-health literature, but repeated passages cannot be counted as multiple supporting studies.

The current policy recommendation should be classified as a falsifiable design proposition, not as the outcome of an implemented Mexico–Canada treaty. Its distinguishing requirement is to admit what is unknown: there is no audited Canadian medical export capacity, no bilateral price schedule and no consent-based roster of physicians willing to deploy. A rigorous conclusion must preserve those limitations rather than convert a desired agreement into a documented agreement.

6.8. Final country-selection test: Canada, Chile, Costa Rica, the United States and Cuba

Country selection depends upon the object being purchased. The Cuban model combined large-scale international deployment of general practitioners with state-to-state intermediation, centralized management and remuneration arrangements. Canada, Chile, Costa Rica and the United States do not present an equivalent documented, immediately deployable national pool. Consequently, comparing their headline physician counts is insufficient. The decision must separately assess (a) emergency general-practitioner replacement; (b) training and retention of Mexican professionals; (c) primary-care organization; (d) autism-related specialist pathways; (e) lawful cross-border licensing and language competence; and (f) contracting integrity. The preferred country can vary between these objectives, and a single ranking purporting to answer all six questions would disguise the incompatibility of the tasks (Kirk, 2015; Marchildon et al., 2020; OECD, 2017; Rice et al., 2020).

Canada is retained as the proposed lead for institutional cooperation—rather than a promised source of doctors—because provincial primary-care reforms, multidisciplinary teams, residency education, academic hospitals, implementation science and audit infrastructures can support the design of a Mexican physician-retention system. This selection is a conditional policy proposition, not evidence of an existing bilateral agreement or proof of demonstrated superiority in every dimension. The principal counterargument is exceptionally strong: the Canadian Institute for Health Information estimates that 5.7 million Canadian adults lacked a regular provider in 2024 and that a 49% increase in family physicians would be needed to address the existing demand. A plan based on recruiting family doctors away from underserved Canadian communities would violate the stated purpose of the cooperation (CIHI, 2025).

The obstacle is resolved by changing the contractual unit: Mexico should procure a time-bound institutional capacity-building program, jointly taught postgraduate modules, clinical supervision, tele-mentoring, workforce planning, data standards and local trainer development, rather than purchasing a quota of Canadian physicians. Canadian faculty could participate through short visits, remote teaching, or Mexico-based jointly funded appointments that demonstrably do not reduce Canadian care. Permanent migration should not be an output target. Mexico must lead recruitment and employment of doctors in Mexico, and success should be

measured primarily by Mexican physician retention, competence and community coverage, not the number of foreign passports in clinics. This is an implementable architecture to negotiate, not a confirmed Canadian government commitment (WHO, 2010; CIHI, 2025).

The proposed partnership is thus deliberately different from the Cuban replacement hypothesis. If Mexican authorities decide that their immediate objective is to deploy thousands of foreign doctors within months, the documentary evidence assessed here does not justify naming Canada, Chile, Costa Rica or the United States as a proven substitute. The manuscript must state the unresolved procurement requirement openly and evaluate separate emergency recruitment arrangements under ethical recruitment standards. It must never label a professional exchange agreement a physician-supply replacement when it does not supply clinicians at scale.

6.9. Chile as the South American comparator: clinical capacity, language and academic standing

Chile is the South American comparator because of its Spanish-language medical profession, experience with mixed public-private financing, FONASA and ISAPRE, family-health centres (CESFAM), explicit health guarantees and established medical faculties. Unlike Canada, clinicians trained in Chile do not face an initial Spanish-language transition when serving Spanish-speaking Mexican patients, although adaptation to Mexican indigenous languages, administrative systems, formularies and clinical pathways would still be required. The benefit is relevant for direct clinical deployment, but it is not evidence of an available workforce reserve (OECD, 2019; OECD, 2025).

The academic-ranking argument must be precise. QS Latin America and the Caribbean 2026 ranks Pontificia Universidad Católica de Chile first in the region, while Universidad de Chile is also among the regional top ten. Thus it is factually inaccurate to identify Universidad de Chile as the number-one institution in that specific QS edition. A university ranking evaluates selected dimensions of institutional performance; it does not measure the availability of unemployed doctors, a ministry's authority to sign a personnel-export contract, or the effects of sending clinicians abroad. Chilean universities can nevertheless contribute medical education, primary-care research, specialist collaboration and independent evaluation without a guarantee of national-scale deployment (QS, 2025).

The limiting evidence is substantial. OECD Health at a Glance 2025 reports 3.3 licensed doctors per 1,000 inhabitants in Chile, a measure not directly comparable to the OECD average of 3.9 practising physicians. Chile also faces geographical maldistribution and long waits for specialist consultation. It would be methodologically wrong to convert the licensed count into an exportable surplus or to call every licensed physician an active practitioner. A Chile–Mexico medical mobility annex must be contingent on source-region vacancy rates, active registration, individual consent and an explicit no-harm assessment (OECD, 2025).

Chile is therefore a strong language-compatible partner for local implementation and a potential source of selected, individually recruited professionals, but it does not supersede Canada automatically under the article's long-term institutional-development objective. In fact, Chile may become the preferred partner if the procurement objective changes from capacity-building to short-term Spanish-language supervised deployments and evidence of available clinicians emerges. A transparent policy analysis must acknowledge this switch condition rather than conceal it.

6.10. Costa Rica as the Central American comparator and its distinct limitation

Costa Rica is selected among Central American cases for its Caja Costarricense de Seguro Social (CCSS), geographically assigned primary-health teams (EBAIS), the organization of basic services and the rich evaluation literature concerning primary-health-care reforms. The country offers a practical governance lesson: a doctor is only one component of a territorially responsible team linking prevention, follow-up, referrals, records and community outreach. The relevant comparison for Mexico concerns population assignment, service continuity and coordinated teams—not simply the ownership or export of a medical degree (OECD, 2017).

However, Costa Rica has its own shortages of specialized personnel and pressures in waiting times. A general-practitioner oversupply claim, when reported in labor-market discussions, must be independently reconciled with regional service gaps, employment conditions, clinical experience and patient needs. A theoretical surplus of graduates does not establish that a particular group can depart without harming Costa Rican patients. As with Chile and Canada, physician availability must be established through an auditable census of willing, currently licensed professionals and a domestic no-harm test (OECD, 2017; WHO, 2010).

Costa Rica does not lose because its primary-care system is intrinsically inferior. It is not proposed as the single lead partner because the current research objective combines postgraduate training, clinical-research partnerships, digital coordination, financing and an ethical model for developing Mexico's own supply. Conversely, if the scope were restricted to reproducing a cost-sensitive territorially assigned family-health-team

model, Costa Rica would provide especially directly transferable institutional practices. This is a conditional distinction of project scope, not a universal country ranking.

6.11. Why the United States remains a comparator but not the physician-export partner

The United States cannot be dismissed on the basis of autism. It provides advanced medical schools, academic hospitals, high-complexity care and extensive autism surveillance and research; the Mayo Clinic is a concrete example of specialist expertise and multidisciplinary clinical services. The relevant constraint is that excellence in a specialist institution does not entail equitable local access in every US community and does not constitute a government-sponsored pool of primary-care physicians for Mexican rural municipalities (Rice et al., 2020).

The Affordable Care Act (2010) expanded insurance coverage, particularly through marketplaces, income-based subsidies and Medicaid expansion in participating states; it did not create a universal single-payer system or guarantee physician access in all regions. Remaining barriers include state variation in Medicaid eligibility, insurance network restrictions, out-of-pocket costs, workforce distribution and discontinuity between screening and specialist care. It would be inaccurate to declare that the Obama program simply failed: coverage gains are documented, whereas affordability and service accessibility remained incomplete. Medicaid provides means-tested coverage subject to federal-state rules; Medicare is a distinct federal program predominantly covering older adults and certain disabled people. Political changes affecting one program should not be attributed automatically to the other (Rice et al., 2020; Baicker et al., 2013).

The Trump periods must be separated chronologically. The first administration pursued repeal or weakening of the ACA and issued regulations affecting coverage; Congress did not repeal the main ACA statute. Second-administration policies need to be identified by enactment date, implementation date and affected population before causal claims can be drawn. Recent autism surveillance statistics describe earlier birth cohorts and identification practices, not prevalence caused by a single presidency. The availability of genomic research or animal models also does not establish that cloning causes autism or supplies a public-health explanation. These distinctions protect the paper from a political narrative that exceeds the evidence (U.S. Congress, 2019; Shaw et al., 2025).

The US can nonetheless be a powerful secondary partner for specialized autism care, tele-consultation, clinical education, biostatistics, information infrastructures and research protocols, potentially including academic medical-center collaborations. The proposed Mexico–Canada lead is based on the paper’s specified institutional-development objectives, not a claim that American medicine has lesser scientific quality. A Mexican contract should preserve the option of purchasing specialized US academic services directly when their incremental benefit and price can be justified.

6.12. Cuba reconsidered: cooperation, payments and evidentiary limits of allegations

Kirk (2015) shows that Cuban medical internationalism spans emergency brigades, teaching institutions, overseas deployments, specialized treatment and paid service contracts. The historical magnitude of deployment remains a relevant operational advantage: Cuba demonstrated an ability to mobilize substantial personnel abroad in a way not documented for the four alternative candidates. It would be analytically inaccurate to erase those achievements merely because the contracts and political implications are contested. Similarly, reported volumes of consultations or surgeries do not independently establish causal effects or equitable employment conditions (Kirk, 2015).

The Brazilian Tribunal de Contas da União, in Acórdão 360/2017-Plenário concerning the program and OPAS intermediary structure, identified insufficient detail in financial reporting and the need to scrutinize transfers to the Cuban government. The record discusses the contract of Cuban physician Ramona Matos Rodríguez and its reported division of a USD 1,000 amount, including portions paid in Brazil and retained or blocked in Cuba. It also examines a transfer of R\$510,957,307 in the relevant 2013 cooperation arrangement. These are documented audit figures for particular periods and contractual mechanisms; the gross public transfer cannot be treated automatically as either the Cuban government’s profit or any individual’s private wealth (TCU, 2017).

The audit record refers to related proceedings including TC-Processo 003.771/2014-8. This is a TCU administrative-process reference, not the judicial case number for all lawsuits brought by Cuban doctors against the Brazilian federal government. Without a verified docket identifying plaintiffs, cause of action and court, the manuscript must not invent a purported collective judicial case number. A future legal appendix should distinguish the TCU audit, labor claims, individual proceedings, actions by professional associations and international allegations. Such precision is essential to any corruption inquiry (TCU, 2017).

Allegations concerning personal corruption or enrichment by members of the Castro family must be examined separately from evidence of Cuban state revenue and worker remuneration. Proof of a state-owned service-export arrangement does not by itself identify a private beneficial owner, diverted amount or criminal judgment. A substantiated finding would require contracts, corporate ownership records, banking trails, asset disclosures, adjudicated proceedings or comparable primary evidence. Kirk's interviews with Cuban authorities are useful for reconstructing the program but are not a forensic audit of the Castro family; conversely, the absence of accessible records is not proof that abuse never occurred (Kirk, 2015; TCU, 2017).

Cuba's overseas operations in Venezuela and other countries should be studied contract by contract. The Cuban–Venezuelan arrangement involved distinctive oil and service relationships and cannot be assumed to have the same wages, retention percentages, reporting system or outcomes as Brazil's OPAS-mediated agreement. Haiti disaster responses, ELAM teaching cooperation, the Operación Milagro program and arrangements with paying countries are diverse institutional forms. To establish misconduct abroad, investigators must identify the particular contracting entity, government authorization, actual transfer, payroll terms, mobility restrictions and available testimony in each jurisdiction (Kirk, 2015, chapters 2–9).

The core policy lesson for Mexico is therefore specific: prohibit compulsory salary interception by a sending state; require transparent contracts with individual clinicians; conduct independent financial and clinical audits; protect complaints and freedom to leave employment; and separate performance measurement from fee transfers. These safeguards apply irrespective of whether professionals are Mexican, Canadian, Chilean, Costa Rican, Cuban or American. Ethical recruitment and domestic workforce protection should be contractual conditions rather than declarations without enforcement (WHO, 2010; TCU, 2017).

6.13. Brazilian consortia, SAMU and the non-integration of generalists and specialists

The consortia interviews serve a narrow evidentiary purpose: they identify institutional mechanisms that could improve coordination across municipalities. They are not a representative evaluation of Brazil's national Mais Médicos policy, and the interviewed consortium actors cannot be presumed to control clinical referrals, budget allocation or follow-up in every municipal health system. Where their present operational involvement is principally associated with SAMU ambulance services, that emergency transport function should be stated explicitly. It does not demonstrate that the consortia already connect each patient to the municipal government's primary-care and specialist obligations.

Mais Médicos was designed principally to strengthen primary-care physician availability and associated training, especially in underserved territories. Mais Médicos Especialistas, established through Portaria GM/MS 7.177/2025 within the later Agora Tem Especialistas strategy, addresses specialized outpatient and hospital service needs through education-service arrangements. The federal government's 2025–2026 public notices initially prioritize oncology, gynecology, cardiology, orthopedics, ophthalmology and otorhinolaryngology. The published six-priority list does not explicitly include psychiatry, developmental pediatrics or multidisciplinary autism services. That is a documented initial priority pattern, not proof that the SUS provides no mental-health services or that no autism-related specialist exists anywhere in Brazil (Ministério da Saúde, 2025–2026).

These separate policy instruments do not create an automatic referral bridge from the generalist to the specialist. The missing bridge is an accountable patient pathway: identified patient, assigned basic-health team, electronic referral, risk classification, funded specialist slot, transportation if appropriate, counter-referral, follow-up and escalation if delay exceeds the clinically acceptable threshold. SAMU ambulance coordination can be essential in emergencies but cannot substitute for scheduled developmental assessment, autism diagnostic pathways, mental-health continuity or school-based support.

Consequently, the Mexico proposal must not repeat this segmentation. Each participating municipality should identify an accountable referral coordinator linking primary-care facilities, specialist networks, rehabilitation, education and social protection. The pilot should measure both primary-care physician presence and the completion rate of clinically indicated referrals. Consortia may be useful contracting and coordination platforms where statutory competences and financing are clear, but the interviews justify this as a hypothesis to test, not a result already achieved (Brazil, Law 12.871/2013; Ministério da Saúde, 2025).

6.14. Bilateral terms, Spanish proficiency and no-harm capacity safeguard

The proposed Mexico–Canada memorandum should create a joint steering committee with Mexico's Ministry of Health, relevant Mexican universities, participating Canadian academic institutions and the provinces or professional bodies whose approval is legally required. Canada's federal government cannot simply assign provincially regulated doctors to Mexican clinics; academic participation and individual professional mobility therefore require separate institutional approvals. The agreement should specify

deliverables, financing, data protection, intellectual-property rights for teaching materials, patient confidentiality, complaints procedures, annual verification and independent evaluation.

Spanish-language readiness remains mandatory for any clinical contact in Mexico. Shared Latin-derived terminology can help English-speaking clinicians learn professional Spanish, but lexical similarities do not constitute clinical competence. The program should assess listening comprehension, medical-history-taking, informed consent, risk communication and patient-safety communication; require observed structured clinical encounters with trained interpreters where appropriate; and address indigenous-language mediation separately. Remote Canadian faculty teaching Mexican physicians in English need a translation plan, but should not be equated with foreign doctors treating Mexican patients without validated proficiency.

Workforce protection needs a hard gate: before any proposed Canadian physician relocates, the sending institution must document baseline staffing, leave coverage and changes in its patient waitlists; Mexican regulators must verify qualifications and authorize scope of practice; the clinician must consent individually and receive direct salary from the Mexican employer. Pilot recruitment is zero by default until these conditions are demonstrated. No treaty clause should promise a numerical medical contingent when the available evidence cannot justify one. The principal economic comparison is incremental cost per Mexican physician retained and per completed referral, not a headline count of visiting foreign doctors.

An independent evaluator should measure municipal continuity of primary care, time from autism suspicion to assessment, completion of specialist referrals, avoidable admissions, turnover, workforce retention and patient experience. The counterfactual may be a staggered rollout across comparable Mexican municipalities, with pre-specified indicators and transparent handling of selection bias. If capacity building does not improve these outcomes at reasonable cost, the contract must permit termination or redesign. A falsifiable agreement makes Canada a testable choice rather than an ideologically preferred one.

VIII. Detailed evidence audit: Brazilian medical cooperation, control failures and reported results

The audit anchor for Brazilian experience is Acórdão 360/2017–Plenário, proceeding 027.492/2013-3, considered on 8 March 2017. It concerned financial transfers under technical cooperation involving the Brazilian Ministry of Health and PAHO/OPAS. The TCU explicitly reported evidence that Mais Médicos had improved service provision, at the same time identifying weaknesses in payment planning, the supervision of agreements and the transparency of transfers. Both sides of this finding must be reported: an indictment of all services as ineffective contradicts the audit; an unqualified claim of financial propriety ignores its determinations (TCU, 2017).

At the time reported by the TCU, 18,240 doctors were participating: 5,274 trained in Brazil, 1,537 with foreign diplomas, and 11,429 Cuban doctors under the PAHO cooperation mechanism. These are historical snapshot figures, not current recruitment capacity for Cuba or a projection of Mexico's needs. The Cuban contingent accounted for 62.6% of that snapshot. Quantities must be tied to the date and definition of participants before making causal claims about access, quality or population outcomes (TCU, 2017).

The TCU described the contractual payment path as Brazilian programme funds passing through PAHO to the Cuban government, which retained a portion before making payments to Cuban physicians. The tribunal account records disagreement between the rapporteur and reviewing minister concerning whether all scholarship and cost-support payments should reach the individual physicians. The plenary majority did not adopt the reviewer's proposed full-payment direction. Its position on jurisdictional competence is distinguishable from an affirmative finding that the retention formula was ethically justified or that all transfers were lawful (TCU, 2017).

The TCU instructed the Ministry to require payment-account information from PAHO and to detail expenditure under the administrative charge. It also addressed the treatment of international advisers and consultants within the administrative fee, stated as 5% of transferred funds, rather than treating these expenses as direct project costs. Reported warning signs included advance payments, weak monitoring of adjustment instruments, uneconomic adviser arrangements and insufficient planning when the number of contracted doctors grew (TCU, 2017). These constitute determinations and findings of an audit, not proof of money reaching any particular political family.

For service performance the tribunal cited an increase of 33% in mean monthly consultations in municipalities that had received doctors in the first two programme cycles, compared with an increase of 14% in municipalities without the programme. The TCU also reported higher consultations and home visits in facilities it inspected. While important, these comparisons are not equivalent to a randomized assessment of physician skill, specialty access, health outcomes or the effect on autistic patients. Differential baseline needs and changes over time must be evaluated before interpreting the figures as an attributable causal impact (TCU, 2017).

The lesson for Mexico is not that imported clinicians inevitably produce corruption, nor that Cuba's historical deployment was clinically ineffective. Rather, mass staffing through an intermediary requires legally legible payment chains, physicians' contractual rights, transparent fees, auditable administration, independent assessment of patient outcomes and an exit strategy. A Canada-centred proposal would fail the same test if it relied on hidden salary assignments or unverified promises of physicians. No partner should receive an exemption because its diplomatic profile is congenial (TCU, 2017; WHO, 2010).

The published legal proceeding 027.492/2013-3 belongs to the Tribunal de Contas da União. It is not a docket number for litigation by Cuban doctors against the Brazilian government. The separate request to identify such litigation should be supported only by official court case metadata; it is not fulfilled by relabelling the TCU administrative case as a physician lawsuit. Similarly, claims about the private fortune or personal enrichment of Castro relatives require separate admissible financial evidence rather than inference from the existence of a state-level retention mechanism (TCU, 2017).

IX. Brazilian consortia: corruption perceptions, interview design and the difference between emergency logistics and longitudinal care

De Angelis (2026) begins with the results of the Indicators of Perception of Corruption in the Health Sector study associated with the Ethics in Health Institute and FGVethics/FGVsaúde, which surveyed 987 representatives across the health production and service chain. The publication reports that 66.8% considered corruption high and another 21.5% considered it moderate. These are responses to survey questions in a selected group, not a census of proven offences, financial leakage or a statistically established prevalence of criminal misconduct in all Brazilian health facilities (De Angelis, 2026).

The same published abstract reports negative perceptions affecting public institutions (92.5%) and private institutions (88.4%) and states that 63.6% of respondents had experienced or witnessed episodes characterized as corruption, with favouritism in procurement and undue influence over prescriptions offered as examples. The operational definition of "experienced or witnessed" is different from a legal ruling: respondents may accurately describe misconduct, but those statements have not thereby been independently investigated and adjudicated. The manuscript should keep perception, reported experience, audited financial conduct and court convictions in distinct evidentiary categories (De Angelis, 2026).

The ISAR publication describes its own consortia research instrument as a questionnaire answered by executive secretaries of two consortia in Rio de Janeiro. That published methods summary does not justify describing the four named consortia—CONSIM, CIOESTE/CIOESE, CISMEPA and CISBAF—as four equivalent survey units with identical participation, dates, questions or independently verified transcripts. Each organization's exact name, location, interviewee, questionnaire and documentary status must be established from the full text or original instrument before its contribution is assigned (De Angelis, 2026).

The analytical proposal in that publication is collaborative governance organized through communities of practice. It seeks to improve knowledge circulation, deliberation among municipal authorities and expert-led thematic conversations, and shared accountability. The paper identifies collective decisions, resource asymmetry, leadership and weak exchange of knowledge as managerial challenges. These are a framework and interview-informed interpretation, not a controlled demonstration that a particular consortium reduced corruption or improved diagnosis and treatment of autism after adopting communities of practice (De Angelis, 2026).

A critical organizational distinction is that participation in SAMU emergency ambulance administration, pooled transport or purchasing does not by itself establish that consortia direct the patient pathway from first clinical contact under Mais Médicos to a developmental paediatrician, psychiatrist, speech-language professional or mental-health team. The emergency chain and outpatient longitudinal chain have different staffing, clinical records, authorizations, timeliness targets and accountable offices. A provider may support one without possessing the institutional powers needed to repair the other.

The 2013 Mais Médicos initiative centred on primary-care doctor distribution, training and improvements in access to services. The more recent Mais Médicos Especialistas/Agora Tem Especialistas mechanism targets selected specialist consultations and treatment priorities. Sharing national health-system sponsorship does not imply shared individual referral records, a single programme manager or an established impact on developmental and autism services. Identifying exactly which specialties were included in each programme notice and when is necessary before drawing conclusions about access for autistic patients (Brazil, Ministério da Saúde, 2013; 2025–2026).

Autism is an appropriate tracer precisely because early concern, family-oriented assessment, continuing generalist involvement, specialised diagnosis when clinically warranted, schooling, communication support and social participation are distributed across professions and authorities. The measurable endpoint is the completion

and continuity of a clinically appropriate pathway, not the number of ambulances acquired or isolated specialist appointments scheduled. A research design would connect municipal family-health-team rosters, triage records, accepted referrals, waiting time, specialist advice and family-reported continuity, subject to consent and privacy safeguards (Hyman et al., 2020; Lord et al., 2020).

Applying the interview results responsibly would therefore require triangulation: public consortia bylaws, SAMU service contracts, regional referral rules, municipal service agreements, interview transcripts and transaction or performance data. Different provinces and municipalities may assign functions differently. Until these records are assessed, the strongest legitimate conclusion is that consortia could potentially support joint governance, not that the sampled organizations already joined Mais Médicos with the specialist programme or directly managed autism care (De Angelis, 2026).

X. Canada: physician-service capacity, management constraints, intangible knowledge and the limits of export claims

Canada is a particularly useful comparator for the distinction between the stock of professional knowledge and its capacity to be converted into timely clinical access. The Canadian Institute for Health Information reported that 5.7 million adults were without a regular primary-care provider in 2024 and estimated that the number of family physicians needed to meet current demand was 49% above the existing workforce under its model. These findings contradict the simple claim that there are already enough doctors and that only administration needs improvement (CIHI, 2025).

Nevertheless, workforce policy cannot be reduced to graduating more doctors. The CIHI documented shifts in the fraction of family physicians giving traditional primary care, and reported variation in direct-care practice and geography. Comparing headcounts with actual patient visits, clinical working hours, full-time equivalents, age structure, accepted patients and underserved geography is required to distinguish training pipeline problems from changes in incentives or modes of practice. A generalist working in an emergency department cannot automatically be counted as available to take a stable community patient panel (CIHI, 2024; 2025).

The administrative component is measurable. Survey analyses assembled by CIHI report dissatisfaction with administrative workload and, in later physician well-being work, a median of one fifth of the working week spent on administrative duties. Electronic health systems, repeated forms and funding incentives are possible targets for efficiency gains. Yet an efficiency gain expressed as liberated time does not demonstrate an immediately available excess number of doctors for another country, especially without specifying productivity, safety and population demand (CIHI, 2023; 2026).

Canada's comparative asset for Mexico may therefore be specialized human-capital formation, health-data methods, university cooperation, clinical guidelines, digital coordination, research supervision and training arrangements. These services can be internationally transferred without removing an urgently needed Canadian clinician from a patient panel. The specific providers, price, quality standards, licensing and intellectual-property arrangements must still be negotiated; general assertions about high scientific prestige do not themselves establish contract feasibility.

Statistics Canada documents material commercial receipts from Canadian research-linked intangible assets. In 2022, research-active businesses recorded technology receipts of CAD 13.0 billion from software, technical assistance and know-how, and intellectual property. Receipts from customers outside Canada reached CAD 10.1 billion, against CAD 1.5 billion paid to foreign organizations. This supports an established capacity for international commercialization of knowledge-intensive services and rights. These figures aggregate all industries, not specifically clinical medicine, and do not prove how much of the transactions involved customers in the United States (Statistics Canada, 2024).

An allegation that Canada sells specifically Canadian medical knowledge to American providers needs stronger product-level, client-country-level evidence. Licences for pharmaceutical patents, health software, hospital management tools, contract clinical research, university spin-outs and joint clinical trials should be separated from generalized services exports. The article must not infer a bilateral Canada–United States medical-knowledge trade volume from national technology exports across industries. Identifying the narrower transactions would be an additional empirical contribution, not merely rhetorical support for Canada.

Physician movement from Canada to Mexico would require occupational licensing, appropriate Spanish-language proficiency, employment and visa authorization, malpractice liability arrangements, proof of specialist or general-practice credentials and a sending-country workforce impact assessment. The most plausible early activities are digital teaching, postgraduate fellowships for Mexican professionals, shared diagnostic pathways and bounded specialist consultations, not a replacement of more than 11,000 Cuban participants historically involved in Brazil (TCU, 2017; CIHI, 2025; WHO, 2010).

Under a defensible bilateral agreement Canada would provide defined deliverables—courses accredited in Mexico, train-the-trainer residency support, interoperable referral protocols and an audited scientific cooperation programme—while Mexico funds its own long-term workforce expansion. Canada should not be called the unconditionally superior physician supplier. Its institutional suitability must be judged against binding constraints and compared with Chilean and Costa Rican offers for less linguistically and financially demanding cooperation.

XI. Country-specific evidence, paired comparative inference and a falsifiable Mexico decision

Chile merits an individual health-system chapter because it offers the most direct Spanish-speaking South American comparison. Its public and private financing, primary-care centres, specialist waiting times, regional inequalities and diagnostic referral arrangements should be assessed separately. University prestige is a potentially important research-partnership asset, but claims that one university is categorically “the best of South America” depend on the QS edition, ranking category and metric. A university ranking cannot be used as a substitute for evidence of population care or available general practitioners (OECD, 2019; 2025).

Claims of Chilean medical errors must distinguish individual adverse events, reported complaints, disciplinary sanctions and final judicial determinations, each with dates and denominators. Claims about corruption similarly require an identified adjudicative or audit record and cannot be inferred from dissatisfaction with clinical services. A genuine Chile–Canada comparison needs patient-safety rates compiled on equivalent definitions, not selected scandals in one country measured against aggregate satisfaction in the other.

Costa Rica is relevant as a regional institutional counterfactual because of its Caja Costarricense de Seguro Social and EBAIS territorial primary-care infrastructure. Its strengths are potentially local continuity, Spanish-language coordination and public service organization. However, the OECD Health at a Glance 2025 country note cautions that comparable practicing-physician and nurse data are missing, so a confident numerical statement about the availability of Costa Rican physicians relative to Canada cannot rest on this source (OECD, 2025).

The OECD documents Costa Rican expenditure of USD PPP 1,935 per capita, 6.8% of GDP, and 1.1 hospital beds per 1,000 population in the relevant country note. Its equipment counts also indicate lower density of certain diagnostic modalities than the OECD average. Such indicators point to materially different resource envelopes. They do not alone establish inferior clinical knowledge creation or prove that Costa Rica cannot train Mexican medical personnel. To test academic research capacity, bibliometric outputs, clinical trials, health innovation budgets, university partnerships and verified technology licensing should be compared with Canadian equivalents (OECD, 2025).

The United States offers a different counterfactual: large-scale university and specialist-clinic ecosystems coexist with fragmented coverage and financial barriers. Medicaid, Medicare and ACA marketplaces must be analysed as different coverage mechanisms. Mayo Clinic and other specialist institutions represent important prospects for cooperative research and tertiary education; they are not a generalizable demonstration of US primary-care affordability or a national programme ready to supply Mexican public clinics (Rice et al., 2020). The three bilateral comparisons should each assess the same decision variables but preserve meaningful institutional difference. Canada–Chile tests scientific and formal institutional capabilities against language fit, public-care experience and local legitimacy. Canada–Costa Rica tests large research infrastructure and financial capabilities against compact community-level delivery and regional cultural proximity. Canada–United States tests the transferability of public financing and clinical coordination under a provincial insurance framework against unusually strong specialist research networks and persistent coverage heterogeneity. None of the pairwise tests can claim causality from a single national ranking.

For Mexico, a selection instrument should demand specific offers from potential institutions; audited compensation and recruitment rights; medical licensing pathways; costs per trainee and per completed patient pathway; time to operational deployment; and independent measures of regional access. Clinical capacity is measured with consultations and responsible follow-up, scientific capacity with reproducible training and knowledge products, and governance with public expenditure traceability. These are separately defined outputs and should not be collapsed into the politically attractive but ambiguous assertion of a superior health system.

The Mexico-focused conclusion becomes conditional: a Canada partnership is justified if signed institutions can supply measurable training, research and specialist coordination capacities at acceptable cost and without harming Canadian patient access, while outperforming or complementing Spanish-speaking regional proposals on those defined deliverables. If that condition is not met, the analysis should explicitly permit a Chilean, Costa Rican or mixed-institution arrangement. Cuba can be excluded from a proposed contractual model only on disclosed criteria such as transparent individual compensation and enforceable practitioner rights, not on unsupported claims of personal criminal enrichment.

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XII. Policy conclusion: a conditional Canada–Mexico agreement

The proposed lead agreement is between Canada and Mexico. Canada is chosen to anchor institutional cooperation in family medicine, clinical training, primary-care governance and specialist support for autism, not because a deployable Canadian physician surplus has been established. The first binding commitments should therefore concern training, supervision, service-network integration, information governance and independently evaluated pilot sites. Direct clinical recruitment may follow only after independent bilateral workforce audits and legal validation identify willing, eligible professionals without harming care in Canada. Mexico should pay each clinician directly under enforceable individual contracts, with published and audited programme expenditure. Where physician export is infeasible, the agreement remains focused on producing and retaining Mexican professionals. Neither the historical deployment scale achieved by Cuba nor the organisational attributes of Costa Rica constitute proof that another country can supply equivalent numbers. The central recommendation is therefore a conditional, ethically governed Canada–Mexico partnership whose success is measured by Mexican healthcare outcomes and domestic capacity, not headline numbers of imported doctors (WHO, 2010; Marchildon, Allin and Merkur, 2020; Kirk, 2015; TCU, 2017).

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