United Nations Conference on Trade and Development
UNCTAD

MUNUC 36

Model United Nations at the University of Chicago

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Dear Delegates,

It is my pleasure to welcome you to MUNUC 36 and the United Nations Conference on Trade and Development (UNCTAD). My name is Hannah Maidman, and I will be your committee chair. I am so excited for this year's conference, and I look forward to meeting all of you and seeing you create innovative resolutions and foster diplomatic debate.

Here's a little bit about me: I'm a fourth year in the college, majoring in Business Economics with a minor in Spanish. On campus, I'm extremely involved in MUN, participating in MUNUC and ChoMUN (UChicago's college MUN conference) for all of my 4 years at UChicago. This year, I am the Chief Operations Officer (COO) for ChoMUN, too. Last year at MUNUC 35, I served as co-chair of the United Nations High Commissioner for Refugees (UNHCR). Outside of MUN, I work as a tour guide in the UChicago admission office, an administrative assistant at The Center for Robust Decision Making on Climate and Energy Policy at UChicago, and conduct research at UChicago's Law School as well as the Economics department. I am also on the women's club ultimate frisbee team, the President of Alpha Phi Omega, a co-ed community service fraternity, and play the alto saxophone in UChicago's Jazz X-Tet. I also enjoy running, reading, and hanging out with my dogs and friends.

I truly hope you are as interested and thrilled as we are about this committee and its topics: Economic Development of Indigenous Communities and Healthcare Supply Chains. Both of these topics are extremely important and influential, not only to the countries you represent but also the world and its treatment of human rights, trade, and economic development. Therefore, it is crucial that we do not forget the importance of these very real and ongoing issues in the world. Consequently, I hope that you treat these issues with the utmost respect and seriousness that they deserve. In regards to Economic Development of Indigenous Communities, I encourage you to address these problems in a diverse way, by creating comprehensive solutions that deal with globalization within community identity and an individual's country, while developing strategies and initiatives that increase accessibility of economic resources and aid to indigenous communities. With Healthcare Supply Chains, I encourage you to address this multifaceted issue through long-term and short-term initiatives and strategies. Healthcare supply chains continue to occur, so it is imperative that prevention and intervention occur globally to better help vulnerable populations.

Overall, I hope that you find this committee enjoyable and learn as much as possible. I hope to make this committee engaging, educational, inclusive, and also upbeat and fun. I want to hear from everyone, regardless of your MUN experience, and meet as many of you as possible in-person. Again, I am beyond excited to meet you all, so please feel free to reach out to me about anything - questions about background guides, MUNUC in general, the University of Chicago, or if you just want to talk.

With my very best regards,

Hannah Maidman

hannahmaidman@uchicago.edu

The United Nations Conference on Trade and Development (UNCTAD) was established as a permanent intergovernmental body by the United Nations General Assembly in 1964.[1] The UNCTAD was created due to growing concerns regarding developing countries and their roles and absences in participating in international trade. Consequently, many of these countries called for the convening of a full-fledged conference completely devoted to tackling these problems and identifying appropriate international action.[2] Thus, the first United Nations Conference on Trade and Development (UNCTAD) was held in Geneva in 1964. Due to the important topics this conference works to discuss and ultimately solve, the conference was institutionalized to meet every four years, with intergovernmental bodies meeting between sessions.[3] Additionally, a permanent secretariat was created to provide necessary substantive and logistical support.[4] The main goal of the UNCTAD is to support developing countries by helping them gain access to the benefits of a globalized economy more equitably and effectively. UNCTAD helps countries by providing economic and trade analysis, facilitating consensus-building, and offering technical assistance to help developing countries "use trade, investment, finance and technology, for inclusive and sustainable development."[5]

The UNCTAD is instrumental in promoting development and sustainability and reshaping the conversation of economic development for indigenous people and the health supply chain. The United Nations Conference on Trade and Development first started to address the necessity of economic development in the 1960s as a means to serve as an intergovernmental forum for North-South dialogue and negotiations on issues of interest to developing countries, such as the "New International Economic Order."[6] However, it was not until the 1980s that the UNCTAD truly faced a changing economic

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[1] The United Nations Office at Geneva. "UNCTAD." UN GENEVA. Accessed August 18, 2023. https://www.ungeneva.org/en/about/organizations/unctad.

[2] United Nations Conference on Trade and Development. "History of UNCTAD." UNCTAD. Accessed August 18, 2023. https://unctad.org/about/history.

[3] Ibid.

[4] Ibid.

[5] The United Nations Office at Geneva. "UNCTAD." UN GENEVA. Accessed August 18, 2023. https://www.ungeneva.org/en/about/organizations/unctad.

[6] United Nations Conference on Trade and Development. "History of UNCTAD." UNCTAD. Accessed August 18, 2023. https://unctad.org/about/history.

environment. At the time, there was a significant transformation in economic thinking.[7] Moreover, many developing countries, especially countries with large populations of indigenous peoples, plunged into a severe debt crisis. While the World Bank and International Monetary Fund created structural adjustment programs to help ailing countries, most developing countries were unable to recover quickly, resulting in negative growth and high rates of inflation.

The 1980s prompted the UNCTAD to evaluate its work and find different ways to provide for economic development and growth. Consequently, the UNCTAD has strengthened its analytical content of its intergovernmental debate, now primarily focusing on macroeconomic management and international financial and monetary issues.[8] UNCTAD has also broadened the scope of its activities in assisting developing countries as well as indigenous peoples, especially within the world trading system. Trade efficiency, such as customs facilitation transport, has made it easier for developing countries to gain greater gains from trade. Lastly, in 1989, the Agreement on the Global System of Trade Preferences among Developing Countries (GSTP) was established, providing the use of tariff and non-tariff preferences among its members.[9]

In 2023, the UNCTAD celebrated its 60th anniversary in a decade entrenched in inequality and vulnerability. Global politics have influenced the rise of protectionism, nationalism, and extremism, prompting increased division. The trust in multilateral systems also plummeted due to backlash against globalization. Moreover, in 2020, the COVID-19 virus spread across the world, highlighting the inequality and lack of supply within the healthcare system as well as the overall economy. Due to these global developments, the UNCTAD has multiplied its efforts, advocating for a more inclusive globalization, while aligning UNCTAD's economic and trade agenda with sustainable development efforts.[10] The UNCTAD is also continuing to monitor growth in inequality across countries and promote sustainable economic growth and structural transformation for countries and groups in need. Additionally, as the world moves further into the post-COVID era, the UNCTAD is assisting nations in redesigning their health policies to enhance counties' productive capacities as well as utilizing advancements in new technologies for better healthcare access.[11] Overall, the fundamental purpose of this body is to promote and empower developed and

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[7] Ibid.

[8] Ibid.

[9] Ibid.

[10] Ibid.

[11] Ibid.

developing countries economically and sustainably and provide them with the best tools and resources to build a better, safer future for themselves.

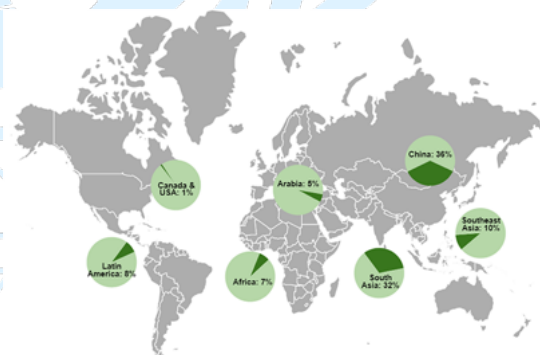# Topic A: Economic Development Of Indigenous Communities

Statement Of The Problem

The United Nations defines indigenous people as those "who inhabited a country prior to colonization, and who self-identify as such due to descent from these peoples, and belonging to social, cultural or political institutions that govern them."[12] Indigenous people have unique assets, knowledge, and tools they use to address global challenges such as environmental sustainability, which contributes to stronger regional and national economies. Historically, for many indigenous communities, extractive operations played and continue to play an important role in economic development, such as mining, timber, fishing, farming, and ranch operations.[13] However, it is necessary that indigenous communities are able to achieve economic development, since it gives these communities the opportunity to break

dependency relationships and use assets that align with their objectives for development and self-sustainability.

Right To Self-Determination

Around the world, Indigenous People have been denied self-determination, which is a principle in international law that refers to peoples' right to freely determine their political status and pursue their economic, social and cultural development.[14] Unfortunately, for Indigenous Peoples, they have been victims of violence and oppression by colonizers and current day society. There are over 5,000 different Indigenous Peoples in the world, and ⅓ of the world's 900 million extremely poor rural people are Indigenous Peoples.[15]

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[12] *Linking Indigenous Communities with Regional Development - OECD*, www.oecd.org/regional/rural-development/indigenous-communities.htm.

[13] Pauls, Elizabeth Prine. "Economic Development: Tourism, Tribal Industries, and Gaming." *Encyclopædia Britannica*, Encyclopædia Britannica, inc., www.britannica.com/topic/Native-American/Economic-development-tourism-tribal-industries-and-gaming.

[14] Ibid.

[15] Ibid.

By virtue of their right to self-determination, Indigenous peoples have the right to pursue their own socioeconomic development. However, many indigenous communities continue to face significant barriers to their growth and prosperity. When compared with non-Indigenous peoples, indigenous peoples experience poorer socioeconomic outcomes, such as lower income and wealth, housing values, education rates, and employment.[17] Many of these barriers are due to historical and long-lasting structural inequalities, as well as design and application of federal programs, laws, regulations and policies. Thus, in this section, we will discuss the existing barriers to Indigenous economic development.

General Barriers To Indigenous Economic Development

Colonialism and Federal Policies

For many Indigenous peoples, colonialism and failed jurisdiction have been barriers they have experienced in trying to achieve economic dependence. Many Indigenous peoples' institutions and governments were replaced with federal bureaucracy. For instance, during the 19th and 20th centuries, Canada removed Indigenous children from their families and placed them in federally funded boarding schools as means to assimilate children into Canada society.[18] In these schools, which were utilized in various regions around the world, Indigenous children were not allowed to speak their languages or express their cultural identities.[19] Consequently, in addition to governmental powers taking away Indigenous peoples' fiscal powers and lands, their institutions and cultures were a continuous point of erasure. The systemic impact of colonialism has limited the economic development of Indigenous peoples, preventing them from getting jobs, clean water, access to good healthcare and education, as well as providing a better future for their children.[20]

Because of colonialism and the failure of governments to recognize Indigenous

[16] Hall, Gillette, and Ariel Gandolfo. "Poverty and Exclusion among Indigenous Peoples: The Global Evidence." World Bank Blogs, August 9, 2016. https://blogs.worldbank.org/voices/poverty-and-exclusion-among-indigenous-peoples-global-evidence.

[17] Pauls, Elizabeth Prine. "Economic Development: Tourism, Tribal Industries, and Gaming." *Encyclopædia Britannica*, Encyclopædia Britannica, inc., www.britannica.com/topic/Native-American/Economic-development-tourism-tribal-industries-and-gaming.

[18] "Indigenous Peoples Rights Are Human Rights." *Amnesty International*, 9 Aug. 2023, www.amnesty.org/en/what-we-do/indigenous-peoples/#:~:text=Cut%20off%20from%20resources%20and,sometimes%2C%20extinction%20as%20a%20people.

[19] Ibid.

[20] "Barrier To Economic Development In Indigenous Communities." *House of Commons*, www.ourcommons.ca/Content/Committee/441/INAN/Reports/RP12528655/inanrp09/inanrp09-e.pdf.

jurisdiction, oftentimes, Indigenous peoples are left out of the decision-making process and oftentimes excluded from participating in general governmental action. In order for beneficial change to occur, there must be more involvement in planning, such that Indigenous peoples are included in strategic planning and the decision-making process for their economic recovery.

Administrative Burdens

Administrative burdens are also a barrier to economic development for Indigenous peoples. For many Indigenous people, they have faced administrative challenges when accessing public funding. In most cases, Indigenous people submit application after application and experience long wait responses from governmental departments.[21] It is a waiting game that prevents Indigenous people from gaining opportunities because they do not have tools necessary to succeed. Thus, transparency is necessary within governmental programming, which means identifying exceptions and the criteria for eligibility.

Access to Capital and Equity

Many Indigenous peoples face barriers related to access to capital and equity. Equity is critical in gaining economic development because without it, an individual, community, or business has infinitely more difficulty in starting and sustaining a path of wealth creation towards

economic development.[22] Additionally, access to capital, such as grants and low-cost debt, for large economic ventures in various industries like mining, resource development, food security, and infrastructure remain very difficult to secure.[23] In today's current capital resource economy, it has become extremely difficult for Indigenous people to enter, increasing the disparity between Indigenous and non-Indigenous groups. Because of capital requirements and bureaucratic interference, Indigenous people's ability to enter capital-intensive economies is obstructed.

As a result, Indigenous communities do not have the financial capital to stand shoulder to shoulder with their partners. Traditional lenders generally do not provide loans for equity, so many Indigenous communities have to pass on the opportunity or receive financial support from another source or partner at a price that is more expensive, due to high fees and interest rates.[24] Consequently, it is necessary that federal governments as well as other institutions develop solutions to provide education, access, and capital through a loan mechanism and other financial resources at safe and reasonable rates. These developments would enable Indigenous communities to participate in the opportunity and benefit from the ever growing economy of their country and the world.

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[21] Ibid.

[22] Ibid.

[23] Ibid.

[24] Ibid.

Current Threats To Indigenous Communities

Besides the lack of financial resources Indigenous Communities face, economic development cannot be achieved without recognizing the other barriers Indigenous Communities continue to face – climate change and healthcare.

Climate Change

Due to their dependency on the environment and its resources, Indigenous peoples directly face the consequences of climate change. Climate change increases the difficulties Indigenous people experience, such as political and economic marginalization, loss of land and resources, human rights violations, discrimination, and employment.[25] Below are examples of Indigenous communities affected by climate change:

In Africa's Kalahari Desert, Indigenous people are forced to live around government drilled bores of water and depend on government support for their survival.[26] Due to rising temperatures, dune expansion and increased wind speed in the Kalahari Desert, there has been a loss of vegetation, which has negatively impacted Indigenous communities traditional cattle and farming practices.[27] This greatly affects

Indigenous communities self-determination both economically and culturally.

Indigenous communities in the Arctic region are also greatly affected by climate change. For many of the Indigenous communities, they depend on hunting polar bears, walrus, seals and caribou, herding reindeer, fishing and gathering for food but also the local economy.[28] Additionally, these practices are the basis of their cultural and social identity. Due to climate change, there have been changes in the availability of traditional food sources as well as perceived weather predictions, which can affect the safety of traveling, human health, and food security.

Healthcare

Many Indigenous populations lack reliable infrastructure, which can thus limit their access to essential resources, such as transportation, drinking water, sanitation, and healthcare. For healthcare, due to climate change and limited support, Indigenous people face medical challenges at a higher rate.[29]

Water-Related Illnesses

Many Indigenous communities lack access to safe drinking water and sanitation, such as drinking water treatment infrastructure. This is especially prevalent in communities located in remote

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[25] "Climate Change for Indigenous Peoples." *United Nations*, United Nations, www.un.org/development/desa/indigenouspeoples/climate-change.html.

[26] Ibid.

[27] Ibid.

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[28] Ibid.

[29] *Climate Change and the Health of Indigenous Populations*, www.epa.gov/climateimpacts/climate-change-and-health-indigenous-populations.

lands. Untreated, contaminated drinking water can result in disease outbreaks and illnesses. Because Indigenous communities already experience limited access to healthcare, this can be detrimental and even deadly to their communities. Additionally, increased water temperatures, due to climate change, can result in the growth of algal blooms.[30] These blooms are harmful, as people can get sick if they swim, drink water, or eat fish or shellfish from waters contaminated with these blooms.[31] In southeast Alaska, governmental agencies are working with communities to monitor these blooms, in order to ensure the safety of communities and the food security.[32]

Respiratory Illness

Many Indigenous communities live near urban or industrial areas, exposing their communities to harmful air pollution. Because of climate change, which has increased outdoor air pollutants, such as wildfire smoke and dust from droughts, air quality has worsened. In many Indigenous communities, increasing droughts have led to blowing dust.[33] Exposure to this dust, as well as wildfire smoke, can cause or worsen asthma, pneumonia, bronchitis, and other respiratory conditions.[34] Without access to medical treatment, these respiratory illnesses can greatly affect Indigenous communities, increasing likelihood of death and destabilizing economies.

History Of The Problem

Economic development is the process "through which a given economy, whether national, regional, or local, becomes more complex and grows in terms of the income or wealth generated per person."[35] It is typically accomplished through creating new forms of labor and creating a new type of product. An example of economic development could be the transition from hunting and gathering to relying on agriculture. During the 19th century, economic growth was prevalent across the world, as there was a shift from extractive economies, like farming and mining, to those that transformed raw materials into consumer goods.[36] In the 20th century, another economic shift occurred, in which the economy transformed from a manufacturing economy to one focused on service industries, such as entertainment, technology, and healthcare. However, economic underdevelopment has been an ongoing problem

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[30] Ibid.

[31] Ibid.

[32] Ibid.

[33] Ibid.

[34] Ibid.

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[35] Pauls, Elizabeth Prine. "Economic Development: Tourism, Tribal Industries, and Gaming." *Encyclopædia Britannica*, Encyclopædia Britannica, inc., www.britannica.com/topic/Native-American/Economic-development-tourism-tribal-industries-and-gaming.

[36] Ibid.

for many Indigenous communities around the world, especially since the beginning of colonization and reservation eras.

A reservation is an area of land reserved for a tribe or tribes under treaty or agreement with the government, in which the government holds title to the land in trust on behalf of the indigenous community.[37] Many of these reservations are located in economically marginal rural areas – areas that are typically too dry, too wet, too steep, too remote, or possess some hindrance of productivity.[38] Consequently, rural counties with predominantly Indigenous populations had less than one-fourth savings of the average rural county, which is a much greater disparity in wealth compared to any other rural group.[39] These disparities occur for a multitude of reasons such as geography, historical inequities, nation-within-a-nation status, the ambiguity between collectivism and nepotism, poor educational resources, the prevalence of post-traumatic stress and substance abuse, and more.[40] Typical ways to improve these disparities

are through improvements to community well-being. In other words, with strong economic development, unemployment rates can decrease, an educated workforce can be created, and there can be adequate provision of infrastructure, healthcare, childcare, eldercare, and more. However, in order for these improvements to occur, it is imperative that one realizes the history of indigenous populations' economic development and trials and tribulations.

Indigenous Economies

Indigenous economies refer to the traditional and local economic systems run by indigenous peoples. These systems include land-based small-scale economic activities and practices as well as sustainable resource management.[41] Historically, these indigenous economies were subsistence oriented and organized around activities such as fishing, hunting, and gathering. Economic activities depended on geographical availability and seasonal patterns of major food sources.[42] These factors influenced the organization of Indigenous – their settlement size, duration of stay, division of labor, and

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[37] "What Is a Federal Indian Reservation?" *What Is a Federal Indian Reservation? | Indian Affairs*, www.bia.gov/faqs/what-federal-indian-reservation.

[38] Pauls, Elizabeth Prine. "Economic Development: Tourism, Tribal Industries, and Gaming." *Encyclopædia Britannica*, Encyclopædia Britannica, inc., www.britannica.com/topic/Native-American/Economic-development-tourism-tribal-industries-and-gaming.
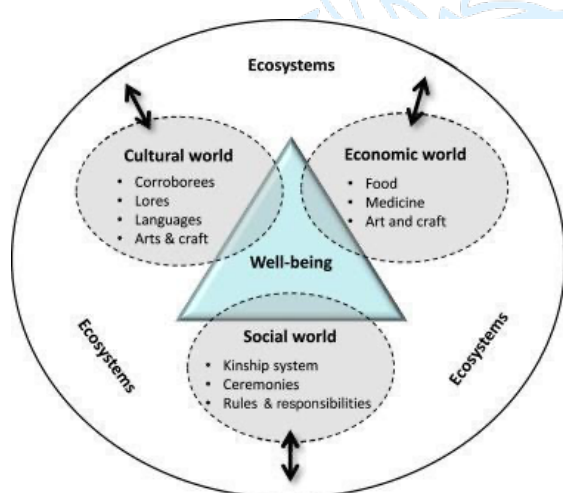
[39] Ibid.

[40] Ibid.

[41] Kuokkanen, Rauna. "Indigenous Economies, Theories of Subsistence, and Women: Exploring the Social Economy Model for Indigenous Governance." *The American Indian Quarterly*, University of Nebraska Press, 30 Mar. 2011.

[42] Trovato, Frank, et al. "Economic Conditions of Indigenous Peoples in Canada." *The Canadian Encyclopedia*, 31 Oct. 2011, www.thecanadianencyclopedia.ca/en/article/aboriginal-people-economic-conditions.

interactions with other groups.[43] When there was a surplus of a specific resource, this enabled possibilities for trade among different Indigenous communities. Trade not only provides material benefits for communities' economies, but also provides the opportunities to gain status, establish or strengthen relationships between communities, and resolve disputes.

Model Of Integrated Indigenous Economy And Ecosystems

This diagram represents the model of the integrated indigenous economy and ecosystems and the responsibilities they each have and share[44]

Impacts Of Colonization On Indigenous Economies

Initially, the presence of Europeans provided little disruption to traditional patterns of economic activity for Indigenous communities, as it expanded opportunities and items for trade.

However, the formalization of various trading markets, such as in Canada's fur trade market, became more impactful for many Indigenous communities. Conflict between colonizers and indigenous peoples occurred due to resource availability and territory when trapping, hunting, and/or collecting pursuits shifted from subsistence to market needs.[45] As a result, dependence on the external markets exposed indigenous communities to volatile and destructive consequences of the "boom and bust cycles."[46] The contact with European settlers and the shared dependency on formal economy, soon resulted in European claims to indigenous lands and resources. Thus, as the settler economy advanced and indigenous communities trade declined, many communities found themselves economically disrupted and vulnerable. As a result, indigenous participation in the labor market dwindled, causing indigenous communities to frequently be marginalized.

Moreover, after taking Indigenous communities land, many colonizers enacted acts, such as the Indian Act of 1876, which was created to force the assimilation of Indigenous peoples. This had a lasting effect on the Indigenous community, their economy, culture, society, and political

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[43] Ibid.

[44] Ibid.

[45] Trovato, Frank, et al. "Economic Conditions of Indigenous Peoples in Canada." *The Canadian Encyclopedia*, 31 Oct. 2011, www.thecanadianencyclopedia.ca/en/article/aboriginal-people-economic-conditions.

[46] Ibid.

systems. Oftentimes, the Act was used in conjunction with other assimilative policies. Traditional lifestyle and spiritual customs were systematically oppressed as an attempt to "civilize" indigenous peoples and make them conform to European values and beliefs. Children were also sent away to assimilation boarding schools, in which they were forcibly taken away from their families and taught to forget their mother tongue and spiritual beliefs. During the late 19th century and early 20th centuries, Indian Acts were used to also support various discriminatory systems, such as Canada's Pass system, which restricted the movement of indigenous peoples off reserves.[47] Economically, these mobility restrictions limited what types of foods, goods and services Indigenous farmers and people could sell at the market as well as where they could sell their food and other goods.[48] These passes were necessary for sellers of produce and other production to leave their reserve and also sell their food.[49] Besides the pass system, there was also a permit system which regulated the sale of goods off reserves.[50] Indian Acts, pass and permit systems as well as other assimilation policies damaged Indigenous economies.

Post World War Ii

At the end of World War II, the West made it a priority to modernize the world through development. This ideology stated that capitalism would allow markets to develop worldwide and increase wealth and prosperity for all.[51] However, the opposite occurred – there was a widening of the income gap between the wealthy and the poor, in which indigenous populations were greatly affected. According to UN Special Rapporteur Rodolfo Stavenhagen (2014) states "not all poor people are Indigenous, but most Indigenous people are poor."[52] This development gap became more apparent in the 1960s and 1970s, especially when many developing countries in Africa and Asia could not match the markets, capital, or technological advantages of the western world. Within the Indigenous community, Indigenous people continued to be dispossessed of their lands and endure colonial assimilation through policies and practices.

Additionally, increased globalization resulted in large corporations purchasing cheap labor in third world countries, leading to lower costs of manufacturing. This led to many nations being forced into a state of economic dependency on foreign aid, imports, resources, and multinational

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[47] Ibid.

[48] Ibid.

[49] Ibid.

[50] Ibid.

[51] Nelson , Rodney. *Beyond Dependency: Economic Development, Capacity Building, and Generational Sustainability for Indigenous People in Canada*, journals.sagepub.com/doi/10.1177/2158244019879137.

[52] Ibid.

corporations.[53] While countries post-World War II struggled to aid their populations, encourage economic growth, and create employment for their citizens, foreign countries were able to reason about financial benefits on an uneven scale. Development also led to an increased need of resources and labor. As a result of modernization, corporations began to amass great power and control of resources, labor, and markets. Consequently, governments and corporations were able to pressure Indigenous populations to sell, relinquish, or leave their lands, while also uprooting their indigenous economies. This upheaval occurs today for Indigenous populations, continuing the political, economic, and policy challenges these communities face.

Indigenous Tourism Industry

In the late 20th century and early 21st century, indigenous populations used a plethora of approaches to foster economic development. Some of these approaches have been used for decades, such as working to gain official recognition as a nation and the filing of lawsuits to reclaim parts of a group's original territory.[54]

Many indigenous populations used extractive operations, either owned by individuals, families, or tribal collectibles, such as mining, timber, fishing, farming, and ranching operations.[55] In the 1950's and 60's, highway improvements opened opportunities for tourism in remote areas, allowing a number of indigenous populations to begin sponsoring cultural festivals and other events to attract tourists. These tribal enterprises, such as hotels, restaurants, and service stations, were extremely profitable. Guide services provided another transformation of traditional knowledge that was valuable in the commercial marketplace.

Indigenous tourism is "a tourism activity that is controlled and operated by Indigenous people."[56] Currently, the global indigenous tourism market is expected to generate a revenue of around $65.16 billion by 2032.[57] The main regions that dominate the indigenous tourism market are Australia, Canada, New Zealand, and the United States of America.[58] Indigenous tourism incorporates Indigenous culture as part of the

[53] Ibid.

[54] Pauls, Elizabeth Prine. "Economic Development: Tourism, Tribal Industries, and Gaming." *Encyclopædia Britannica*, Encyclopædia Britannica, inc., www.britannica.com/topic/Native-American/Economic-development-tourism-tribal-industries-and-gaming.

[55] Ibid.

[56] Trovato, Frank, et al. "Economic Conditions of Indigenous Peoples in Canada." *The Canadian Encyclopedia*, 31 Oct. 2011, www.thecanadianencyclopedia.ca/en/article/aboriginal-people-economic-conditions.

[57] "Indigenous Tourism Market Outlook (2022 to 2032)." *Future Market Insights*, Future Market Insights, www.futuremarketinsights.com/reports/indigenous-tourism-sector-overview.

[58] Ibid.

tourism experience, such as learning about art and cultures of indigenous communities, purchasing indigenous art, carvings, and prints, eating traditional indigenous food at restaurants, or visiting heritage sites. These activities provide a source of income to numerous communities. Tourism increases the reliance of indigenous peoples on a globalized economy and lessens their dependency on local resources. However, while tourist enterprises have contributed significantly to indigenous economics, the tourism industry is inherently volatile due to visitation rising and falling in response to various factors like inflation and the cost of travel. Additionally, the globalization of tourism "threatens indigenous knowledge and intellectual property rights, their cosmovision, technologies, religions, sacred sites, social structures and relationships, wildlife, ecosystems, economies and basic rights to informed understanding."[59] Thus, tourism can reduce indigenous peoples culture and identity to simply be another consumer product that is exhaustible.

Report Attribute	Details
Indigenous Tourism Market Value (2022)	US$ 40 Billion
Indigenous Tourism Market Anticipated Forecast Value (2032)	US$ 65.16 Billion
Indigenous Tourism Market Projected Growth Rate (2022 to 2032)	4%

[59] McLaren, Deborah Ramer. "The History of Indigenous Peoples and Tourism." *Cultural Survival*, www.culturalsurvival.org/publications/cultural-survival-quarterly/history-indigenous-peoples-and-tourism.

This table depicts the past and expected revenue for the indigenous tourism market.[60]

Past Actions

Global Response

In the early 21st century, there was an increased effort on assisting Indigenous communities on local, regional, or national issues. The quest for indigenous self-determination received international recognition in 1982, when the United Nations Economic and Social Council created the Working Group on Indigenous Populations (WGIP).[61] WGIP was established as a subsidiary organ to the Sub-Commission on the PRomotion and Protection of Human Rights. WGIP gave Indigenous Peoples the opportunity to share their experiences and raise concerns at the UN. However, as a subsidiary organ of the Sub-Commission, the Working Group was located at the lowest level of the hierarchy of the UN human rights bodies. Therefore, in order for its recommendations to be considered and accepted, the recommendation had to first go to its superior body, the Sub-Commission, and then to the Commission on Human Rights and the

[60] Ibid.

[61] Pauls, Elizabeth Prine. "Economic Development: Tourism, Tribal Industries, and Gaming." *Encyclopædia Britannica*, Encyclopædia Britannica, inc., www.britannica.com/topic/Native-American/Economic-development-tourism-tribal-industries-and-gaming.

Economic and Social Council before reaching the General Assembly.[62] In 1985, the group began to draft an indigenous rights document. This process took many years as it required there to be adequate consultation with indigenous nations and nongovernmental organizations.[63] In 1995, the UN Commission on Human Rights received the draft Declaration on the Rights of Indigenous Peoples. In 2007, the declaration was passed. Indigenous communities around the world celebrated this event, as they hoped it would be helpful in their quests for legal, political, and land rights.[64]

In 1994, the UN General Assembly declared 1995-2004 to be the International Decade of the World's Indigenous Peoples.[65] The International Decade of the World's Indigenous Peoples was launched to increase the United Nation's commitment to promoting and protecting the

rights of Indigenous Peoples.[66] During the Decade, several UN specialized agencies worked with Indigenous Peoples to design and implement projects on "health, education, housing, employment, development, and the environment to promote the protection of indigenous peoples and their traditional customs, values, and practices."[67] Once the International Decade of the World's Indigenous Peoples elapsed, the Second International Decade of World's Indigenous Peoples (2005-2015) was established.

The goal of the Second International Decade of World's Indigenous Peoples was to further strengthen international cooperation for Indigenous Peoples in areas such as culture, education, health, human rights, the environment, and social and economic development, "by means of action-oriented programs and specific projects, increased technical assistance and relevant standard-setting activities."[68] The five objectives of the Decade were:

"1. Promoting non-discrimination and inclusion of Indigenous Peoples in the design, implementation, and evaluation of international, regional and national processes regarding laws, policies, resources, programs, and projects;

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[62] "Indigenous Peoples at the United Nations for Indigenous Peoples." *United Nations*, United Nations, www.un.org/development/desa/indigenouspeoples/about-us.html.

[63] Pauls, Elizabeth Prine. "Economic Development: Tourism, Tribal Industries, and Gaming." *Encyclopædia Britannica*, Encyclopædia Britannica, inc., www.britannica.com/topic/Native-American/Economic-development-tourism-tribal-industries-and-gaming.

[64] Ibid.

[65] "Indigenous Peoples at the United Nations for Indigenous Peoples." *United Nations*, United Nations, www.un.org/development/desa/indigenouspeoples/about-us.html.

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[66] Ibid.

[67] Ibid.

[68] Ibid.

2. Promoting full and effective participation of Indigenous Peoples in decisions that directly or indirectly affect their lifestyles, traditional lands, and territories, their cultural integrity as Indigenous peoples with collective rights or any other aspect of their lives, considering the principle of free, prior and informed consent.

3. Re-defining development policies that depart from a vision of equity and that are culturally appropriate, including respect for cultural and linguistic diversity of Indigenous Peoples.

4. Adopting targeted policies, programs, projects and budgets for the development of Indigenous Peoples, including concrete benchmarks, and particular emphasis on Indigenous women, children, and youth;

5. Developing strong monitoring mechanisms and enhancing accountability at the international, regional and particularly the national level, regarding the implementation of legal, policy and operational frameworks for the protection of Indigenous Peoples and the improvement of their lives."[69]

Additionally, the Decade also enacted the Trust Fund for the Second Decade, which was utilized to promote, support, and implement the objectives above. The Fund was generally used to provide small grants to projects run by Indigenous organizations or organizations working for Indigenous Peoples. If awarded

funding, one received a budget for up to $10,000 covering one year's expense.[70] From 2006 to 2014, the Trust Fund has provided grants to a total of 151 projects, with funding mainly going to projects in Asia, Africa, and Central and East Europe and the Caucasus. However, due to limited resources, the Trust fund was only able to fund 151 grants out of a total of 4,110 proposals submitted.[71]

Currently, there continues to be a multitude of efforts to promote Indigenous Peoples rights and economic development. For instance, in 2014, the World Conference on Indigenous Peoples (WCIP) was created. This conference created an environment where perspectives and best practices on the realization of the rights of Indigenous Peoples could be discussed. It assisted in pursuing the objectives of the United Nations Declaration on Rights of Indigenous Peoples.

In November 2020, the UN System Chief Executives Board for Coordination (CEB) called for action on building an inclusive, sustainable, and resilient future with Indigenous Peoples by revitalizing the action plan and strengthening collective and coherent UN system efforts.[72] This call further supports the Executive Heads' commitment to supporting Member states in "the promotion, protection and realization of the

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[70] Ibid.

[71] Ibid.

[72] Ibid.

[69] Ibid.

rights of Indigenous Peoples and redoubling efforts to ensure collaborative and coherent United Nations system action to support the rights and well-being of Indigenous Peoples."[73]

Possible Solutions

Indigenous communities have been involved in international trade for millenia. Therefore, there is an opportunity for economic development with Indigenous businesses that could result in mutually beneficial relationships and equitable access to growth and trade.

Accessibility To Finance

Access to finance is one of the largest barriers Indigenous communities face. It prevents indigenous communities from expanding their businesses and limits their accessibility to capital, as they are unable to use collectively owned, traditional lands as collateral for bank loans.[74] To improve access to capital, one could create a robust Indigenous banking unit to provide debt capital to communities and development corporations.[75] This could also help support entrepreneurs and the risk they face. Additionally, in Canada, in supporting access to capital for

entrepreneurs, they have created the Aboriginal Entrepreneurship Program.[76] This provides approximately $25 million of equity capital per year so that entrepreneurs can access affordable commercial loans.[77] This program pairs well with Canada's Indigenous Growth Fund, which is Indigenous-designed and led, and "a key economic recovery initiative, which will provide [I]ndigenous businesses with a fully independent source of capital."[78]

Designing Inclusive Trade Policies

Trade agreements and the processes involved in their development is crucial to the economic development of indigenous peoples, as it improves inclusivity. For instance, New Zealand's *Trade for All* agenda aims to make trade policies work for everyone, including traditionally underrepresented groups such as the Māori people.[79] In the *Trade for All* program, the New Zealand government worked with the Māori people to determine how to "maximize

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[73] Ibid.

[74] "How Indigenous Peoples Are Reshaping Modern Economies." *World Economic Forum*, www.weforum.org/agenda/2022/08/how-indigeno us-peoples-are-reshaping-modern-economies/.

[75] Ibid.

[76] *Reclaiming, Revitalizing, Maintaining and Strengthening Indigenous …*, www.ourcommons.ca/Content/Committee/441/I NAN/Reports/RP12528655/inanrp09/inanrp09-e .pdf.

[77] Ibid.

[78] Ibid.

[79] "How Indigenous Peoples Are Reshaping Modern Economies." *World Economic Forum*, www.weforum.org/agenda/2022/08/how-indigeno us-peoples-are-reshaping-modern-economies/.

opportunities for all while addressing global issues such as Indigenous rights."[80]

The APEC-initiated Indigenous Peoples Economic and Trade Cooperation Arrangement (IPETCA) is an agreement that has the potential to increase Indigenous trade.[81] This agreement works through cooperation to remove trade barriers for Indigenous peoples, share knowledge, promote responsible business conduct, and build networks.[82] Additionally, a Partnership Council was established, where representatives of Indigenous peoples come together to create and review the implementation process of IPETCA.[83]

Building Connections

Another solution to assisting Indigenous populations is through building connections and partnerships. Indigenous populations can continue to work with the World Bank for funding as well as NGOs such as Native American Rights Fund, Survival International, International Work Group For Indigenous Affairs, etc. Additionally, it is imperative that Indigenous businesses work with non-indigenous businesses. Non-Indigenous businesses have begun to recognize the advantages of partnering with Indigenous businesses, as it provides an opportunity for knowledge-sharing. For instance,

in New Zealand, the Māori people partnered with the Japanese Seafood company Nippon Suisan Kaisha Limited (Nissui) in Sealord Group Limited.[84]

Nissui operates sustainable fishing and aquaculture and employs over 1,200 people in New Zealand as well as worldwide.[85] This partnership between the Māori people and Nissui greatly helped economic development, as it resulted in the company trading its products worldwide, with a seafood portfolio worth more than $500 million.[86] Partnering with non-indigenous businesses and educating both indigenous groups as well as non-indigenous groups about the importance of collaboration is crucial, as it can result in mutual economic prosperity and growth.

All in all, countries need to collectively act to help Indigenous communities with their economic development. This requires team effort, starting from governments through to civil institutions, academia, and companies. Even as individuals, it is crucial that we carefully consider our responsibilities as consumers, voters, and global citizens. If people come together with change as their goal, a big impact can happen.

[80] Ibid.

[81] Ibid.

[82] Ibid.

[83] Ibid.

[84] Ibid.

[85] Ibid.

[86] Ibid.

Bloc Positions

South America + Africa

In Africa there are around 50 million Indigenous peoples.[87] Most of these people are nomadic and semi-nomadic pastoralists and hunter-gatherers.[88] In South America, there are an estimated 42 million indigenous peoples. With Mexico, Guatemala, Peru, and Bolivia accounting for more than 80% of the regional total.[89] In both regions – South America and Africa – indigenous people face a lot of challenges ranging from marginalization and nonrecognition by governments and other ethnic groups, to poverty.

In order to achieve economic development, South America and Africa not only need funding but also better access to education and health. In Africa, the education gap between indigenous and non-indigenous people is critical.[90] Primary school enrollment rates for indigenous children are much lower than the national average.[91] Additionally, indigenous peoples' territories are often exploited for mining, logging, and other extractive industries, which has threatened the livelihoods of pastoral, semi-nomadic, hunter-gathers and forest people.[92] In South America, it is necessary to create the legislative, institutional, political, and economic conditions that would reflect existing diversity and a commitment to " recognize, respect, promote, advance and not diminish in any way the rights of aboriginal communities and to defend the principles of the United Nations Declaration on the Rights of Indigenous Peoples."[93]

Europe

In Europe, specifically Northern Europe, there are 80,000 – 100,000 indigenous people, the Sami people, in the EU.[94] The majority of indigenous

[87] "Indigenous Peoples in the African Region ." *United Nations*, www.un.org/esa/socdev/unpfii/documents/2013/Media/Fact%20Sheet_Africa_%20UNPFII-12.pdf.

[88] Ibid.

[89] "Indigenous Latin America." *World Bank*, World Bank Group, 8 Aug. 2023, www.worldbank.org/en/region/lac/brief/indigenous-latin-america-in-the-twenty-first-century-brief-report-page.

[90]

https://www.un.org/esa/socdev/unpfii/documents/2013/Media/Fact%20Sheet_Africa_%20UNPFII-12.pdf

[91] "Indigenous Peoples in the African Region ." *United Nations*, www.un.org/esa/socdev/unpfii/documents/2013/Media/Fact%20Sheet_Africa_%20UNPFII-12.pdf.

[92] Ibid.

[93] Economic Commission for Latin America and the Caribbean. "It Is Urgently Necessary to Achieve the Full Inclusion of Indigenous Peoples in Fulfillment of the 2030 Agenda, Guaranteeing the Exercise of Their Collective Rights." *Economic Commission for Latin America and the Caribbean* www.cepal.org/en/pressreleases/it-urgently-necessary-achieve-full-inclusion-indigenous-peoples-fulfillment-2030.

[94] European Parliament. *International Year of Indigenous Languages - European Parliament*, www.europarl.europa.eu/RegData/etudes/ATAG/2020/646118/EPRS_ATA(2020)646118_EN.pdf.

people – 50,000 – 65,000 live in Norway, 20,000-40,000 in Sweden, and 8,000-10,000 in Finland. 60% of the Sami people live outside of their homeland.[95] Historically, the Sami people's lifestyle and economy has been based around reindeer herding as well as fishing, trapping, and hunting. Sami culture views reindeers as an important culture, but with its decreasing population, Sami people are now living in more permanent modern accommodations.[96] In order to achieve economic development, it is imperative that European countries make it a priority to protect indigenous peoples who have been exposed to adverse corporate behavior and are often unable to hold perpetrators accountable. Thus, European countries must invest in enabling indigenous communities to monitor and report human rights abuses and environmental damages as well as advocate with political and corporate actors.[97] With proper help from European countries, indigenous communities will be able to boost their own

initiatives for economic and sustainable development.

North America

There are roughly 6.6 million Indigenous peoples in the United States, 1.7 million in Canada, and 16.9 million in Mexico.[98] In America, indigenous peoples are called Native Americans, in Canada First Nations, and in Mexico Indigenas. Currently, there are many efforts occurring to assist indigenous peoples in their business and economic development through both governmental and nongovernmental organizations. In the United States, the government is enacting levels of funding specifically for Tribal communities and Native people, including $32 billion in the American Rescue Plan.[99] In Canada, there are multiple programs and services created to increase business skills, invest in a business, or develop land on a

[95] Ibid.

[96] "The Last Indigenous People of Europe." *Insight Vacations*, Insight Vacations https://secure.gravatar.com/avatar/5195a9192a0e4 693a5a914245dd57013?s=96&d=mm&r=g, 8 Aug. 2022, www.insightvacations.com/blog/the-last-indigenou s-people-of-europe/.

[97] "EU Boosts Support to Indigenous Peoples' Rights around the World." *International Partnerships*, 9 Aug. 2022, international-partnerships.ec.europa.eu/news-and-e vents/news/eu-boosts-support-indigenous-peoples-r ights-around-world-2022-08-09_en.

[98] "Mapped: The World's Indigenous Peoples." *Visual Capitalist*, 27 Mar. 2023, www.visualcapitalist.com/cp/mapped-the-worlds-in digenous-peoples/.

[99] "Fact Sheet: Biden-Harris Administration Announces New Actions to Support Indian Country and Native Communities Ahead of the Administration's Second Tribal Nations Summit." *The White House*, The United States Government, 30 Nov. 2022, www.whitehouse.gov/briefing-room/statements-rel eases/2022/11/30/fact-sheet-biden-harris-administr ation-announces-new-actions-to-support-indian-co untry-and-native-communities-ahead-of-the-admini strations-second-tribal-nations-summit/.

reserve.[100] However, in Mexico, Indigenous peoples lack formal recognition of their territories and natural resources and are often the last to receive public investment, access to justice and infrastructure, and the right to participate in social representation.[101] Additionally, the United States and Canada have had troubled pasts with the indigenous community. Indigenous peoples in both regions are continuing to overcome barriers to economic development. These barriers include, but are not limited to, the legacy of colonialism, failure to recognize Indigenous jurisdiction, inadequate infrastructure, administrative burdens, limited access to capital, and limited access to federal procurement opportunities.[102]

Asia

Asia is home to the largest number of indigenous people worldwide. In Asia, there are an estimated 260 million indigenous people.[103] Despite the significant number, equaling about half of the combined population of Europe, Asian indigenous peoples face an array of challenges, such as the denial of the right to self-determination, loss of control over their land and natural resources, marginalization and discrimination, forced assimilation, and violent repression by state security forces.[104] Despite these challenges, indigenous groups have continued to fight for their rights, organize, and mobilize across the Asian region. One organization that has been essential in helping Asian indigenous people is the Asia Indigenous Peoples Pact (AIPP) Foundation, based in Chiang Mai, Thailand.[105] AIPP works to facilitate the growth of an alliance "no fewer than fifty indigenous organizations based in 14 countries in Asia, with twenty of those organizations based in

[100] "Business and Economic Development for Indigenous Peoples." *Canada.Ca*, Government of Canada, 20 Oct. 2022, www.canada.ca/en/services/indigenous-peoples/business-and-economic-development-indigenous-peoples.html.

[101] "Violence against Indigenous Groups Defending the Environment in Mexico." *IUCN*, 8 Dec. 2022, www.iucn.org/story/202212/violence-against-indigenous-groups-defending-environment-mexico#:~:text=Indigenous%20peoples%20in%20Mexico%20lack,social%20representation%20and%20decision%2Dmaking.

[102] "Barrier To Economic Development In Indigenous Communities." *House of Commons*, www.ourcommons.ca/Content/Committee/441/INAN/Reports/RP12528655/inanrp09/inanrp09-e.pdf.

[103] Benedict, Josef. "Asia Home to Largest Number of Indigenous Peoples: Activists Building a Movement in Face of Attacks." *CIVICUS Global Alliance*, www.civicus.org/index.php/fr/medias-ressources/133-blogs/3373-asia-home-to-largest-number-of-indigenous-peoples-activists-building-a-movement-in-face-of-attacks#:~:text=Asia%20is%20home%20to%20the,370%20million%20original%20inhabitants%20worldwide.

[104] Ibid.

[105] Ibid.

Southeast Asia."[106] It is imperative that Asian countries continue to work with AIPP to strengthen the solidarity, cooperation and capacities of indigenous peoples in Asia, while also protecting their rights, cultures, and identities.[107] It is through lobbying and advocacy as well that change can be achieved.

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[106] Ibid.

[107] Ibid.

Glossary

Aboriginal: having no known others preceding in occupancy of a particular region

Assimilation: the process of taking in and fully understanding information or ideas

Boom and Bust Cycle: capitalist economies that tend to contract after a period of expansion and then expand again

Capitalism: an economic and political system in which a country's trade and industry are controlled by private owners for profit

Economic Development: economic growth plus progressive changes in certain important variables which determine the well-being of the people

Globalization: the process by which businesses or other organizations develop international influence or start operating on an international scale

Indigenous Economies: the traditional and local structures of Indigenous peoples

Indigenous People: distinct social and cultural groups that share collective ancestral ties to the lands and natural resources where they live, occupy or from which they have been displaced

Indigenous Tourism: a tourism activity that is controlled and operated by Indigenous people

Marginalization: occurs when a person or groups of people are less able to do things or access basic services or opportunities

Reservation: an area of land reserved for a tribe or tribes under treaty or other agreement with the government

Self-Determination: the process by which a country determines its own statehood and forms its own allegiances and government

Statement Of The Problem

A healthcare supply chain is "an extensive network of systems, components, and processes that collectively work to ensure medicines and other healthcare supplies are manufactured, distributed, and provided to patients."[108] This system is a complex global system established with built-in protections to ensure that medications and other medical supplies are manufactured and delivered as soon as possible, even when there are natural disasters and pandemics. The most crucial of these protections is the supply chain's ability to predict, plan, and react to potential disruptions that may occur in the supply chain.[109] There are many contributors in a healthcare supply chain, such as pharmacies and pharmacists that are found in health systems and hospitals, pharmaceutical quality standard developers, and health insurance providers.[110] However, manufacturers and distributors are key to a healthcare supply chain. Manufacturers are the first link in the supply chain, as they make the medicine and healthcare supplies. Manufacturers manage the distribution of their products from when they are produced to when they are distributed.[111] Distributors are the second link in the supply chain. They purchase the medicine and healthcare suppliers in bulk from manufacturers and then maintain large stocks in various locations across the country.[112] Developing a healthcare supply chain takes meticulous planning and assembling. A healthcare supply chain needs everything from contracting various suppliers to finding the availability of a reliable manufacturer's labor force, to ensuring quality control and testing to protect patients.[113] Sometimes it takes many beginning years for a medical product to even get approved for patient use.

Importance Of Healthcare Supply Chains

Effective and efficient healthcare supply chain and its management is critical to ensuring patient safety and satisfaction, reducing costs and limiting waste, improving healthcare outcomes as well as addressing supply chain issues that may arise.[114] In 2020, the COVID-19 pandemic

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[108] Dadmun, Ryan. "What Is the Healthcare Supply Chain?" *Healthcare Ready*, 15 May 2015, healthcareready.org/what-is-the-healthcare-supply-chain/.
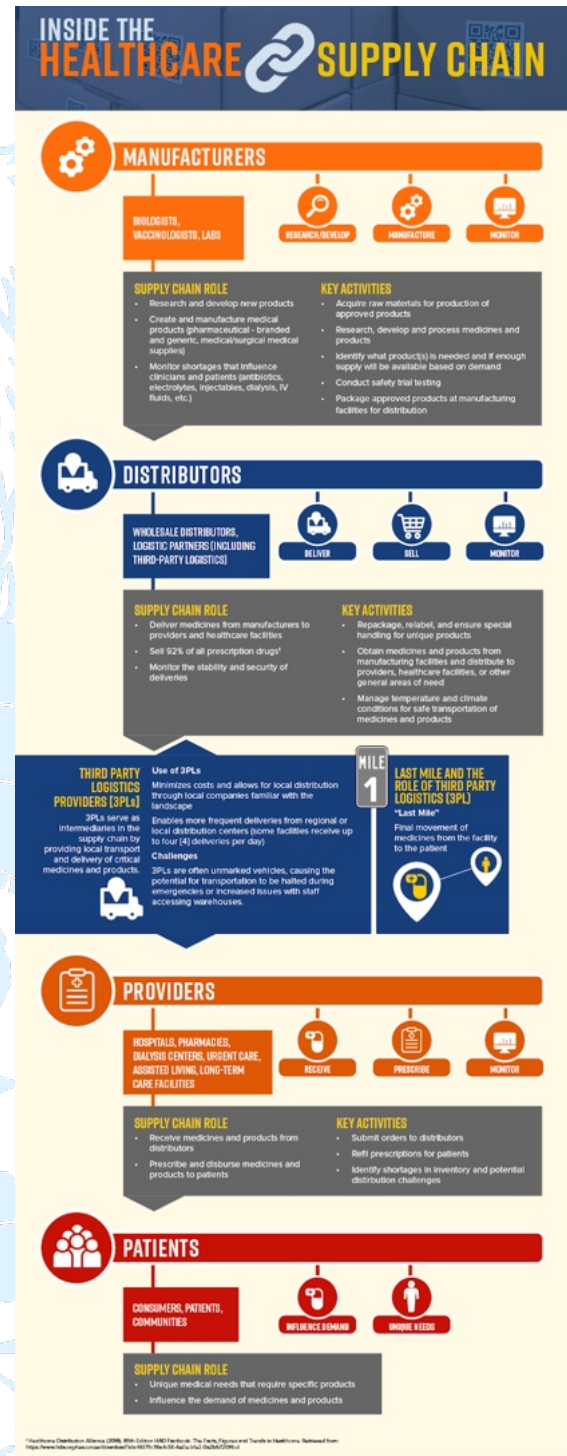
[109] Ibid.

[110] Ibid.

[111] Ibid.

[112] Ibid.

[113] Ibid.

[114] Nadeau, Kara L. "Supply Chain Issues in Healthcare and How to Mitigate Them." *GHX*, www.ghx.com/the-healthcare-hub/supply-chain-issues/.

highlighted the many flaws found within healthcare and its supply chain. There was limited product manufacturing, lack of staff availability, and inefficient inventory management in healthcare facilities.[115] Thus, it is critical that a healthcare supply chain is created with cost savings, supply reliability, and operation efficiency.[116]

This flow chart illustrates the healthcare supply chain into 4 subcategories: manufacturers, distributors, providers, and patients[117]

[115] Ibid.

[116] Ibid.

[117] Dadmun, Ryan. "What Is the Healthcare Supply Chain?" Healthcare Ready, May 15, 2015. https://healthcareready.org/what-is-the-healthcare-supply-chain/.

Challenges In Healthcare Supply Chains

Healthcare supply chain fallout has been a long-standing issue that needs to be fixed and essentially optimized. According to a 2022 survey of 227 hospital purchasing leaders by AHRMM, the top four healthcare supply chain issues among "hospital purchasing leaders to be costs (76%), material scarcity (63%), inventory management (55%) and personnel shortages (55%)."[118] However, there are also many common causes to healthcare supply chain issues.

Manual Supply Chain Management

With the lack of digitalization, many systems have gaps and increased risk for errors. For instance, prescriptions and other invoices that are manually processed and sent via email or fax involve many touchpoints that add time, labor, costs, and room for error.

Inventory management:

Deficient inventory management is a management that relies on manual tracking and documentation of products as they are received, stored, and moved.[119] They are extremely inefficient and place a huge burden on the supply chain and clinical staff. Inventory management that is faulty can also limit the visibility of supply

status, which can result in stockouts, overordering, added costs and waste.[120] Moreover, manual processing of inventory management can limit the ability for healthcare organizations to access comprehensive and accurate data in real time.[121] This can result in poor quality control, lack of forecasting accuracy, and "the inability to perform meaningful analytics to support healthcare supply chain optimization initiatives."[122] Poorly run inventory management can also result in issues in communication and problem resolution between providers and suppliers.

Data and Analytics

Healthcare supply chains will continue to face challenges if they do not have access to credible data, which comes from its procurement processes (ERP) and clinical usage of products (EHR) for analysis. ERP stands for enterprise resource planning, and it is a software that helps healthcare managers provide the best medical service for their patients.[123] EHR stands for electronic health record, and it is an electronic

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[118] Nadeau, Kara L. "Supply Chain Issues in Healthcare and How to Mitigate Them." *GHX*, www.ghx.com/the-healthcare-hub/supply-chain-issues/.

[119] Ibid.

[120] Ibid.

[121] Ibid.

[122] Ibid.

[123] Hall, Don. "Best Healthcare ERP Solutions: Compare Key Features." *CIO Insight*, 15 Feb. 2023, www.cioinsight.com/enterprise-apps/healthcare-erp-system-features/#:~:text=Healthcare%20enterprise%20resource%20planning%20(ERP,medical%20service%20to%20their%20patients.

version of a patient's medical history.[124] When using manual processes instead of one that can access and leverage data and insights from the healthcare supply chain, this can result in supplier relationship issues.[125] Additionally, with the lack of data on product usage and demand, this can inhibit collaboration between providers and suppliers. In a supply chain that has complex networks in which distributors, suppliers and providers must work together on changing product and price data, manual updates can be detrimental to the system.[126] This can result in pricing inaccuracies, which can hurt patients if they cannot afford medicine, as well as loss of time and labor used to resolve inaccuracies.

COVID-19 gave the world an inside look into the global healthcare supply chain weakness. There were frequent shortages of medical masks, test kits, personal protective equipment (PPE), and ventilators. However, these healthcare supply chain problems – drug and equipment shortages, expired drugs, broken medical equipment, and lack of infrastructure and manufacturing capability – are not new. Healthcare supply chain weaknesses are found around the world. For example, in Colombia, patients experienced

shortages of 219 drugs from 2010 to 2021.[127] In developing countries, 50-80% of medical equipment is not functioning.[128] Many low- and middle-income countries (LMICs) rely on compromised donated medicine. In one year, 30% of drugs donated to the Republic of Macedonia arrived either expired or about to expire.[129]

Supply chain management (SCM), "which involves planning and managing inventory, sourcing, financing, receiving, conducting quality control, warehousing, and distributing medical products to health clinics, pharmacies, and hospitals, has long been neglected" is crucial to solving the healthcare supply chain problem.[130] There are many reasons for weak and problematic healthcare supply chains, such as lack of resources, untrained personnel, weak procurement practices, inefficient transportation systems, lack of storage facilities, and low manufacturing capacity. For many supply chains, they are unable to anticipate certain needs for medications in a timely manner, such as malaria pills during monsoon seasons when there are

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[124] "Electronic Health Records." *CMS.Gov*, www.cms.gov/priorities/key-initiatives/e-health/records.

[125] Nadeau, Kara L. "Supply Chain Issues in Healthcare and How to Mitigate Them." *GHX*, www.ghx.com/the-healthcare-hub/supply-chain-issues/.

[126] Ibid.

[127] Andrews, Kathryn, et al. "Tackling Health Care Supply Chain Challenges through Innovations in Measurement." *World Bank Blogs*, blogs.worldbank.org/health/tackling-health-care-supply-chain-challenges-through-innovations-measurement.

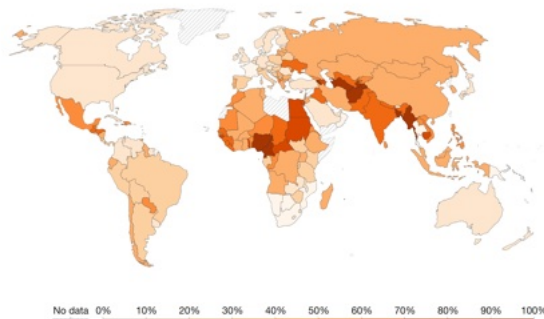[128] Ibid.

[129] Ibid.

[130] Ibid.

more mosquitos.[131] Additionally, supply chains have to accommodate medications that need to be refrigerated as well as others that need to be stored in dry places.

Because healthcare workers cannot get adequate suppliers, many patients are faced with life or death. As these disruptions compromise health care and even result in fatalities. At the beginning of the COVID-19 pandemic, PPE shortages were due to rising demand, panic buying/hoarding, and unprepared healthcare systems. As a result, many frontline workers were placed in grave danger, while the lack of medical supplies also forced patients to travel far to receive treatment or forgo care.

Share of out-of-pocket expenditure on healthcare, 2019
Out-of-pocket expenditure on healthcare as percent of total current healthcare expenditure.

This map depicts the total out-pocket expenditures citizens must pay for healthcare in their countries[132]

Moreover, shortages of medicine and use of expired medications can be extremely dangerous. For instance, patients in Côte d'Ivoire were receiving a combined antiretroviral treatment for HIV. Among the patients, drug stockout impacted 11% of the population, which resulted in treatment discontinuation and increased risk of interruption in care or death.[133] Based on evidence in Uganda and Nigeria, stock shortages of medication can result in disruptions in care, which can lead to increased risk of antimicrobial resistance and treatment susceptibility, which furthers health inequity.

History Of The Problem

History Of Supply Chains

During the mid to late-1800s, there was only long distance transportation. Before the Industrial Revolution, supply chains were completely localized, making it difficult to bring raw materials across long distances.[134] Therefore, supplier and manufacturing portions of the supply chain had to close together. However, after the invention of the steam-powered train

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[131] Ibid.

[132] "Share of Out-of-Pocket Expenditure on Healthcare." Our World in Data. https://ourworldindata.org/grapher/share-of-out-of-pocket-expenditure-on-healthcare.

[133] Andrews, Kathryn, et al. "Tackling Health Care Supply Chain Challenges through Innovations in Measurement." *World Bank Blogs*, blogs.worldbank.org/health/tackling-health-care-supply-chain-challenges-through-innovations-measurement.

[134] "The History and Future of Healthcare Supply Chain Automation." *Notisphere*, www.notisphere.com/post/the-history-and-future-of-healthcare-supply-chain-automation.

and the development of the Transcontinental Railroad in America, the supply chain changed, in which suppliers could send their materials to far places around the country.[135] Moreover, the invention of the automobile also changed the supply chain, as it would help transport supplies to even more specific locations.

The healthcare supply chain greatly chained in the 1960s when IBM created the information management system. More specifically, IBM created IMS (inventory management system), which was the first computerized inventory management and forecasting system.[136] IMS primarily focuses on transaction management, which helps various organizations, especially the healthcare system, stay connected with their finances within the supply chain.[137] Consequently, IMS is continuously used in healthcare today, as it helps balance transactions between vendors and insurance companies.[138]

In the 1970s, JCPenney installed a real-time warehouse management system in their stock room.[139] While this may not seem applicable to the healthcare system, it was extremely groundbreaking as manufacturers in warehouses, whether for drugs or clothing, no longer needed

to memorize inputs from reference sheets or manually track what was coming in and out of the warehouse.[140] This management system allowed distributors and suppliers to rely on computerized systems and barcodes. Additionally, in the 1990s, Radio Frequency Identification (RFID) tags were developed. RFID tags were a step up from barcodes, as they did not require workers to scan every piece of inventory in transit. Instead, the scanners automatically picked up RFID tags and all of the information about the product, streamlining the transaction process.[141]

In the 2010s, the supply chain continued to evolve with new dew data and AI to improve risk management. For supply chain managers, especially in the healthcare industry, it is imperative that one tries to mitigate risks in their supply chain. If the supply chain is not watched, it could result in costly medications and failure in medical implementations.[142] Thus, currently, as the supply chain continues to advance, more and more data has become available. With this data, managers are able to track their inventory better and identify inefficiencies. Additionally, with artificial intelligence programs, managers are able to see real-time insights into how they can improve their supply chains.[143] However, even

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[135] Ibid.

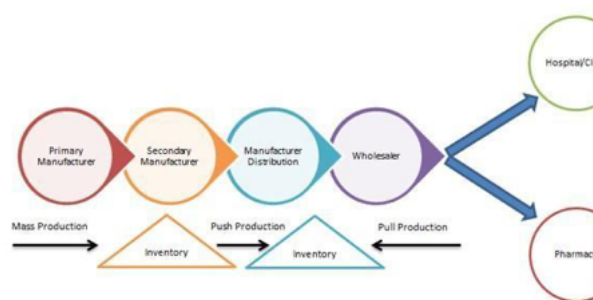[136] Ibid.

[137] Ibid.

[138] Ibid.

[139] Ibid.

[140] Ibid.

[141] Ibid.

[142] Ibid.

[143] Ibid.

with advancements in the supply chains,especially within the healthcare industry, there are still many weaknesses and problems that must be fixed.

This diagram depicts the healthcare supply chain process[144]

Healthcare Barriers

It is evident that in developed countries and markets, such as North America, Europe, and the Far East, that there is sophisticated and accessible healthcare. However, for many countries that are not found within those regions healthcare and the healthcare supply chain are extremely fragile and inaccessible. For instance, in Africa, there is one doctor per 3,324 people whereas there is one per 293 people in Europe.[145] Only 33% of people

in Africa and 45% of people in South East Asia have access to sanitation systems whereas in Europe it is 93% of people. Healthcare supply chains in countries across southern sub-Saharan Africa, the Middle East, and South Asia are greatly behind other countries in socio-demographic indexes, which foreshadows the lack of focus on healthcare and opportunities to fix it.[146] Therefore in order to understand the challenges and root causes of failure within the healthcare supply chain, one must address the issues as the source.

Geography

One of the primary barriers to healthcare supply chain access is geographical. Many of the world's poorest or unequal are also the largest. For instance, India covers 3.287 million km^2, the Democratic Republic of the Congo 2.345 million km^2, China 9.597 million km^2, Brazil 8.516 million km^{2}.[147] These countries have widely dispersed populations which are oftentimes separated by great distance from the nearest primary healthcare. As a result, many countries are unable to access healthcare efficiently or quickly. The remoteness of populations is an emerging problem for many countries in terms of the healthcare supply chain. For instance,
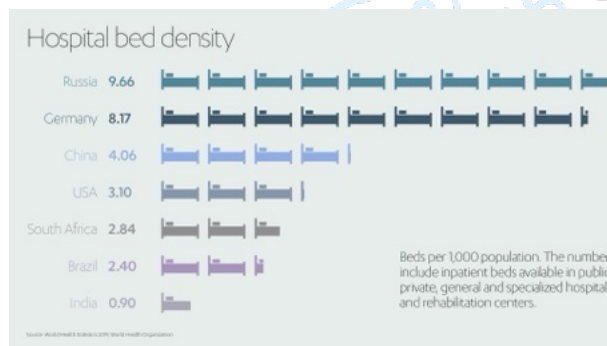
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[144] Does Human Capital Improve Health Care Agility through Health Care Supply Chain Performance? Moderating Role of Technical Orientation - Scientific Figure on ResearchGate. https://www.researchgate.net/figure/Healthcare-supply-chain-and-the-human-capital-activities_fig1_336832452.

[145] "The History and Future of Healthcare Supply Chain Automation." *Notisphere*, www.notisphere.com/post/the-history-and-future-of-healthcare-supply-chain-automation.

[146] Ibid.

[147] "Improving Healthcare Access in Developing Markets." *Rising Nations Healthcare Access | Abdul Latif Jameel Health*, aljhealth.com/en/insights/healthcare-access-worldwide/.

Germany has 8.17 hospital beds per 1,000 people while China has just 4.06, South Africa 2.84, Brazil 2.4, and India 0.9.[148]

Hospital bed density

	Beds per 1,000
Russia	9.66
Germany	8.17
China	4.06
USA	3.10
South Africa	2.84
Brazil	2.40
India	0.90

Beds per 1,000 population. The numbers include inpatient beds available in public, private, general and specialized hospital and rehabilitation centers.

This diagram depicts the lack of hospital beds in developing and under-developed countries compared to developed countries[149]

In sub-Saharan Africa, over 287 million people live more than 2-hours in transportation time from the nearest hospital. In fact, ⅔ of sub-Saharan countries fail the "global target of 80% of people living within two-hours of a hospital, while in South Sudan (average life expectancy: 59 years) only 22.8% of people meet that criteria.[150]

Availability

Even if countries have access to healthcare, there is also a problem of availability. For many people that are sick or injured and reach a hospital or healthcare system, they struggle to access treatment because of the healthcare supply system and developed economy. According to a

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[148] Ibid.

[149] Ibid.

[150] Ibid.

report by the WHO, countries spanning from Asia, Africa, the Middle East and Latin America, issues that these countries experience in healthcare include:[151]

Shortage of trained health workers, equipment, and medicines

Limited hours of operation and short staffing

Unsustainable waiting times

Variable quality of drugs and medical aids

Inadequate information for patients on healthcare options and choices

Poor or late referrals

Additionally, low-income countries suffer poor integration of healthcare at the local, regional, and national level.[152] Many of these countries lack a cohesive and holistic approach when it comes to healthcare, which is especially evident in access to vaccinations.

According to a vaccination study that covers areas such as Bangladesh, Benin, Brazil, Cambodia, Eritrea, Haiti, Malawi, Nepal, and Nicaragua, in Cambodia, it was found that less than 1% of children receive all available vaccinations.[153] Moreover, one-in-five children received no vaccinations at all.[154] In the poorest wealth quintile of Haiti, 15% of children received no

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[151] Ibid.

[152] Ibid.

[153] Ibid.

[154] Ibid.

intervention while only 17% only received one intervention. Additionally, in Nicaragua, which is among the other countries that had the most promising data, only 13.3% of children received all their vaccinations.[155] Altogether, the healthcare supply chain is one that needs help both monetarily and organizationally to ensure that healthcare is not only accessible but available.

Language

Many products, such as food products, clothing, electronics, car parts have a Universal Product Code. A Universal Product Code is a unique 12-digit number given to products sold in stores and online.[156] This product barcode is extremely useful, as it can identify and track products that are sold, shipped, as well as received.[157] However, the healthcare industry as well as the healthcare supply chain lacks these codes. According to the President of Advantus Health Partners, "We don't have [the] consistency and intelligence to make sound decisions as an industry because we don't have a universal language... And it's the under-discussed underlying problem in the industry, in my opinion."[158]

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[155] Ibid.

[156] "Master UPC Codes: Essential Guide for 2023." *Shopify*, 18 Nov. 2022, www.shopify.com/blog/what-is-a-universal-product-code#:~:text=The%20Universal%20Product%20Code%20(UPC,sold%2C%20shipped%2C%20and%20received.

[157] Ibid.

[158] Twenter, Paige. "Healthcare Supply Chain's No. 1 Issue: A Language Barrier." *Becker's Hospital*

For instance, during the pandemic, gloves and other PPE equipment were extremely popular, as they were vital for everyday work in hospitals. In fact, there were actually 9,000 different types of gloves in the US, which meant there was a high variation in production and distribution.[159] However, due to lack of language within healthcare supply chains, many hospitals lacked PPE because of fragmented communication and distribution.[160] Currently, hospitals are trying to work around this language by fully aligning their clinical, operations, and financial segments. However, in order for advancement and change to occur within the healthcare supply, change in communication and a universal language are necessary.

Past Actions

Global Response

USAID Global Health Supply Chain

There are many organizations that have been created to combat the barriers found in the healthcare supply chain. For instance, the USAID Global Health Supply Chain (GHSC) is "a collection of 8 complementary projects working to achieve stronger, more resilient health supply

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Review, www.beckershospitalreview.com/supply-chain/healthcare-supply-chains-no-1-issue-a-language-barrier.html.

[159] Ibid.

[160] Ibid.

chains that ensure an uninterrupted stream of quality health products and services for millions of people worldwide."[161] GHSC operates by learning from the history of global health supply chain management. From there, GHSC works to consolidate USAID's primary supply purchasing and distribution power across the health sector.[162] Consequently, GHSC is able to mitigate risks and increase efficiencies and cost saving to create a streamlined and integrated supply chain.[163] There are many projects GHSC works on, such as:

Business Intelligence and Analytics: This project focuses on data, such that it collects, integrates, and increases its acceptability for all supply chain contractors.[164] Consequently, this allows for better transparency in finances, orders, shipments, and technical assistance when it comes to healthcare.

Procurement and Supply Management: This project works to provide various services for commodity procurement, supply, and systems as means to strengthen technical assistance.[165] This project focuses on 4 health areas – HIV/AIDS,

malaria, family planning and reproductive health, and maternal, newborn, and child health.[166]

Promoting the Quality of Medicines: this project focuses on ensuring proper quality of medicines.[167] Additionally, this project focuses on the safety of medicines by working to strengthen countries' quality assurance systems.

Quality Assurance: This is a project that focuses on quality assurance for health commodities.[168]

Rapid Test Kits: This is a project that obtains and ships HIV Rapid Test Kits (RTKs) to countries in need.[169]

Systems for Improved Access to Pharmaceuticals and Services: This project focuses on strengthening the pharmaceutical systems. The project addresses 5 interrelated health systems functions - governance, human resources, information, financing, and service delivery.[170]

Additionally, since GHSC is global, the organization works with countries around the world, especially those in developing countries like South Africa, Tanzania, and Cote d'Ivoire.

Project Last Mile

While progress is being made to better healthcare supply chains, medicine does not always reach its

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[161] "About GHSC." *About GHSC | USAID Global Health Supply Chain Program*, www.ghsupplychain.org/our-work/mission.

[162] "USAID Global Health Supply Chain Program." *Home | USAID Global Health Supply Chain Program*, www.ghsupplychain.org/..

[163] Ibid.

[164] "About GHSC." *About GHSC | USAID Global Health Supply Chain Program*, www.ghsupplychain.org/our-work/mission.

[165] Ibid.

[166] Ibid.

[167] Ibid.

[168] Ibid.

[169] Ibid.

[170] Ibid.

intended healthcare facilities. In fact, nearly 50% of people lack access to critical medicine.[171] Thus, Project Last Mile was created. Project Last Mile is a public-private partnership with The Coca-Cola Company and Foundation, the the Bill and Melinda Gates Foundation, The Global Fund, and USAID "to help improve uptake of life-saving health services and to enable medicines to go to the "last mile" and benefit communities in Africa."[172] Project Last Mile works with regional Coca-Cola bottlers and suppliers to strengthen public health systems capacity in the supply chain by sharing information from the Coca-Cola system with the local Ministry of Health.[173] In other words, the project improves planning, distribution, and performance management for public health in Africa. Project Last Mile works with African governments to teach them the best practices for a successful healthcare supply chain, such as supply chain logistics, strategic marketing skills, and general best business practices.[174] Project Last Miles objective is to:[175]

Create more efficient medicine deliveries;

Create better-stocked healthcare facilities; and

Increase the availability and accessibility of life-saving medicines

Currently, Project Last Mile is working with eight countries in Africa: Ghana, Liberia, Mozambique, Nigeria, Sierra Leone, South Africa, Swaziland, and Tanzania.[176]

Additionally, the United Nations also has the Department of Operation Support (DOS), with a division for supply chains. While this group is not primarily focused on healthcare, it is still an important department that can teach both developed and developing countries the best practices for supply chains, which can then be utilized in healthcare. More specifically, in DOS, the office of supply chain management (SCM) focuses on logistics, procurement, enabling and outreach, aviation safety, and uniformed capabilities.[177] The primary mission of SCM is to help countries create reliable and collaborative supply chains by utilizing operations that link business processes, data, and best practices into one structure.[178] The UN supply Chain covers the below topics:

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[171] "Project Last Mile: Basic Page." *U.S. Agency for International Development*, 14 Dec. 2022, www.usaid.gov/cii/project-last-mile.

[172] Ibid.

[173] Ibid.

[174] "What We Do – PLM – Project Last Mile." *PLM - Project Last Mile*, www.projectlastmile.com/what-we-do/.

[175] Ibid.

[176] "Project Last Mile: Basic Page." *U.S. Agency for International Development*, 14 Dec. 2022, www.usaid.gov/cii/project-last-mile.

[177] "Supply Chain | Department of Operational Support." *United Nations*, United Nations, operationalsupport.un.org/en/supply-chain.

[178] Ibid.

"Client demand: Fulfills UN mission requests for goods and services.

Track & Trace: Monitors the status of requisitions, purchase orders, or shipments to follow progress and ensure completion.

Demand Planning: Develops optimized plans for sourcing, logistics, storage, transport and distribution.

Sourcing: Evaluates and secures the best suppliers for the Organization.

Inbound Logistics: Organizes storage, transportation, and delivery of incoming goods from supplier to a distribution location.

Storage and transport: Stores or prepare goods for transport according to relevant schedules.

Outbound Logistics: Distributes goods and services to clients.

Delivery and Receipt: Ensures clients receive the right goods, at the right time, at the best quality."[179]

Possible Solutions

Today, healthcare supply chains continue to evolve. Thus, healthcare organizations are focusing on improving the healthcare supply chain process through digitization and automation of procurement processes and inventory management. Solutions to the

healthcare supply chain are aimed at further improvements in healthcare logistics, quality control, patient safety, and cost optimization.[180]

Utilizing technology to improve efficiency and accuracy

Hospitals need to implement a cloud healthcare enterprise resource planning (ERP) system that integrates with the electronic hospital record (EHR) systems, supply chain management and financial/patient billing systems.[181] With a club-based ERP this will help simplify and streamline the healthcare supply chain, making it easier to control and view. In addition, technology can facilitate better collaboration within the healthcare system, as well as between suppliers and other stakeholders in other networks.[182]

Altogether, a digitized healthcare system that processes data and is able to generate analytics will be extremely beneficial to the healthcare supply chain. It allows for successful communication as well forecasting and demand planning data when working with suppliers.[183] Technology allows healthcare supply chains to generate more accurate and timely supplier

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[179] Ibid.

[180] "Supply Chain Issues in Healthcare and How to Mitigate Them." *GHX*, www.ghx.com/the-healthcare-hub/supply-chain-issues/#supply-chain-solutions.

[181] Ibid.

[182] Ibid.

[183] Ibid.

performance metrics as well as strengthen relationships and other supply chains.

Frequent and Transparent Reporting

Transparency is necessary for a healthcare supply chain to be successful. When targets are established, it is imperative that there is good tracking performance as it ensures manufacturers, suppliers, distributors and stakeholders have access to up-to-date information.[184] This gives healthcare supply chains better visibility on their progress as well as fosters a sense of accountability. Thus, healthcare supply chains should ensure that there are dashboards that display the metrics that are most crucial to the supply chain. With this evident information, healthcare supply chains can then provide additional information, such as facility surgeon, or supply level, that can inform leaders and the actions they must take.[185]

Incentives to Improving Supply Chain

Incentives can result in meaningful behavior changes in some clinicians, companies, distributors, etc. For instance, with incentives, clinicians may shift away from "from their suppliers of choice to clinically similar suppliers used by their peers."[186] Additionally, incentives may help encourage suppliers and distributors to ensure that healthcare supplies are not only available but accessible to people. These incentives can be both financial or nonfinancial and may include " a commitment to reinvest a percentage of savings in things prioritized by physicians, such as equipment, conference attendance, or publications."[187]

Bloc Positions

Africa

In Africa, there is a lack of diversification in the healthcare supply chain and production capability for medical supplies. Consequently, many countries in Africa have to rely on imports for healthcare systems.[188] In fact, it is estimated that "Africa produces only 6% to 20% of its medicinal and pharmaceutical products, while the other 80% to 94% of the continent's medical needs are met through imports."[189] Additionally, public health supply chains across the continent are short-staffed and overburdened, which makes

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[184] Bowen, Brianne, et al. "Optimizing Health System Supply Chain Performance." *McKinsey & Company*, McKinsey & Company, 23 Aug. 2022, www.mckinsey.com/industries/healthcare/our-insights/optimizing-health-system-supply-chain-performance.

[185] Ibid.

[186] Ibid.

[187] Ibid.

[188] Kamara, Jonta, and Ukeme Essien. "Covid-19 in Africa: Supply Chain Disruptions and the Role of the Africa Continental Free Trade Agreement." *Journal of Global Health*, U.S. National Library of Medicine, 17 Dec. 2022, www.ncbi.nlm.nih.gov/pmc/articles/PMC9758448/.

[189] Ibid.

most Africans have to turn to private health innovators. Unfortunately, many of these private health supplies are fragmented from manufacturing to distribution. This results in increased prices, unpredictability, availability, as well as uncertain quality.[190] For instance, fake and standard products are more available in open drug markets in Africa than in global standard medicine.[191]

In order to achieve successful healthcare supply chains, African countries must leverage technology to digitalize the supply chain processes. Additionally, by working with innovators within Africa as well as global partnerships from a plethora of foundations, solutions around resolving long-term challenges regarding availability, accessibly, supply, and quality of health products in the public healthcare supply chain can be achieved.[192]

Europe

In Europe, the healthcare system is experiencing significant pressures in the supply chain, demographic, and economy. The countries in the European region are experiencing supply chain challenges, such as shortages of antigens, stockouts and interruptions of immunization services, shortages of PPE as well as medicine.[193] Countries that are working to improve their healthcare supply chains include Azerbaijan, Georgia, Kazakhstan, Moldova and Uzbekistan, especially in optimizing their delivery of medications and health products.[194] In addition, many European countries are experiencing an influx in the elderly population, which puts more pressure on the need for timely medications and treatments.[195] Moreover, as new treatments evolve, their availability is leading to increased healthcare costs per patient, which can also affect social care and the pension payment system.[196]

To counter these problems and resolve healthcare supply chain disruption, action is required. Thus, Europe must leverage its power and utilize consultations and government-led programs, such as participatory health supply chain assessments to achieve a successful healthcare

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[190] Kene-Okafor, Tage. "African Governments Are Collaborating with Innovators to Strengthen Local Health Supply Chains." *TechCrunch*, 25 July 2023, techcrunch.com/2023/07/25/african-governments-are-collaborating-with-innovators-to-strengthen-local-health-supply-chains/.

[191] Ibid.

[192] Ibid.

[193] "Countries Strengthen Health Supply Chains with Support from UNICEF and Who." *World Health Organization*, World Health Organization, www.who.int/europe/news/item/07-02-2021-countries-strengthen-health-supply-chains-with-support-from-unicef-and-who.

[194] Ibid.

[195] "Challenges to European Healthcare Systems at a Glance." *Go to BFF Banking Group*, www.bff.com/challenges-to-european-healthcare-systems-at-a-glance.

[196] Ibid.

supply chain.[197] Additionally, Europe should work with the United Nations, WHO, UNICEF, etc. to create a supply chain maturity model, which "enables health and other government officials to review the performance of 13 critical operational and technical supply chain functions."[198]

North America

In the United States, Canada, and Mexico, healthcare and the healthcare supply chain are very flawed. About half of US adults say they have difficulty affording healthcare costs.[199] Additionally, high healthcare costs disproportionately affect uninsured adults, Black and Hispanic adults, and those in lower incomes.[200] These higher costs are due to the healthcare supply chain's inability to create transparent accessible *and* available modes of healthcare. The US healthcare supply chain is also experiencing shortages and inefficiencies – there is a supply and demand issue. More specifically, there is a shortage of nurses and physicians, such

that the Association of American Medical Colleges (AAMC) postulates that the U.S. will experience a shortage of between 54,100 and 139,000 primary and specialty care physicians by 2033 as the demand increases.[201]

In Canada, more than 80% of the activities required to make drugs sold in Canada are imported.[202] Additionally, most medical devices used in Canada are imported.[203] As a result, Canada is faced with serious shortages, as manufacturers are unable to meet demand. Factors that have contributed to Canada's flawed healthcare supply chain include rising cost of labor, transportation, and inability to get raw materials.[204] In Mexico, the healthcare supply chain is hurting as many companies risk having their shipments slowed due to the customs process, especially cross-border operations

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[197] "Countries Strengthen Health Supply Chains with Support from UNICEF and Who." *World Health Organization*, World Health Organization, www.who.int/europe/news/item/07-02-2021-coun tries-strengthen-health-supply-chains-with-support-from-unicef-and-who.

[198] Ibid.

[199] Kearney, Audrey, and Alex Montero. "Americans' Challenges with Health Care Costs." *KFF*, www.kff.org/health-costs/issue-brief/americans-cha llenges-with-health-care-costs/.

[200] Ibid.

[201] Medifind. "8 Major Problems with the U.S. Healthcare System Today." *Medifind.Com*, www.medifind.com/news/post/problems-us-health care-system.

[202] Ibid.

[203] "Consultation Guide on Improving Access to Drugs and Other Health Products in Canada: Drug and Other Health Product Shortages." *Canada.Ca*, Government of Canada, 1 Sept. 2023, www.canada.ca/en/health-canada/programs/consult ation-improving-access-drugs-health-products/guid e/drug-health-product-shortages.html.

[204] Ibid.

between the United States and Mexico.[205] Moreover, Mexico's healthcare supply chain and healthcare system faces many challenges as it is underfunded and poorly organized and managed.

Asia

In Asia, the healthcare supply chain system is continuing to evolve with the introduction of digitalization and technology. For instance, in Asia, the data landscape is evolving, such that most clinical recordkeeping is using electronic health records and increasing the scale of unstructured insights.[206] However, according to Zuellig Pharma, up to 3-in-10 medical products in the Asian and Pacific market remain substandard and are in need of better traceability.[207] Countries in South-East Asia and Western Pacific region also face many problems, such as inadequate resources for and a high magnitude of diseases. This is due to poor public health management as well as equity, human resources, health promotion, and health service delivery.[208] Consequently, Asian countries are in need of supply chains for healthcare such that numerical and personal products, medical equipment, and other essentials are accessible and available to the general public.

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[205] Venetis, Demetri. "How Cross-Border Operations in Mexico Are Transforming Supply Chains & Diversifying Manufacturing." *Supply & Demand Chain Executive*, 17 Aug. 2023, www.sdcexec.com/sourcing-procurement/manufact uring/article/22870141/rxo-how-crossborder-opera tions-in-mexico-are-transforming-supply-chains-div ersifying-manufacturing#:~:text=While%20Mexico' s%20location%20is%20an,down%20by%20the%20c ustoms%20process.

[206] "Healthcare Supply Chain Security ." *KPMG*, assets.kpmg.com/content/dam/kpmg/sg/pdf/2020/ 07/healthcare-supply-chain-security.pdf.

[207] Ibid.

[208] "Health in Asia and the Pacific." *World Health Organization*, World Health Organization, 1 Jan. 1970, apps.who.int/iris/handle/10665/205227.

Glossary

Analytics: a field of computer science that uses math, statistics, and machine learning to find meaningful patterns in data

Digitalization: adaptation of a system, process, etc. to be operated with the use of computers and the internet

Electronic Health Record (EHR): an electronic version of a patient's medical history that is maintained by the provider over time, and may include all of the key administrative clinical data relevant to that person's care under a particular provider, including demographics, progress notes, problems, medications, etc.

Healthcare enterprise resource planning (ERP): software that addresses healthcare managers' unique requirements to provide the best medical service to their patients

Healthcare supply chain: an extensive network of systems, components, and processes that collectively work to ensure medicines and other healthcare supplies are manufactured, distributed, and provided to patients

Incentives: a thing that motivates or encourages one to do something

Inventory Management: process of ordering, storing, using, and selling a company's inventory

Personal protective equipment (PPE): clothing and equipment that is worn or used in order to provide protection against hazardous substances or environments

Supply Chain: the sequence of processes involved in the production and distribution of a commodity

Supply Chain Management: system of procurement, operations management, logistics and marketing channels, so that the raw materials can be converted into a finished product and delivered to the end customer

Universal Product Code: a unique 12-digit number given to products sold in stores and online

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