

Uzbekistan drug airlift: a quantitative analysis of public/private collaboration

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Abstract

Uzbekistan is a country within Central Asia resting on a precarious plane of health, economic, and social problems affecting its stability. In an effort to aid the stability of the country, the U.S. along with numerous non-government organizations (NGOs) and private organizations worked together to carry out a program entitled Operation Provide Hope 2002, a humanitarian operation responsible for the donation of over \$50 million in medicines and medical supplies. An analysis of the context within which the program was carried out, along with a look at both the costs and benefits of the operation show that the benefits far outweigh the costs both in quantitative and qualitative terms.

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Uzbekistan: a historical, economic, environmental, and health context

Through a complex chronological history of Iranian nomads, Islamic Arabs, Turks, Mongols, Uzbeks, and Russians, came the establishment of Uzbekistan as an independent nation on August 31, 1991. Uzbekistan is one of the cradles of world civilization with "some of the world's oldest sedentary populations and several of its most ancient cities"¹. Located just north of Afghanistan between the Amu Darya and Syrdariya rivers, Uzbekistan has the largest population in Central Asia. With a long and varied history of conquests, peoples, and traditions, Uzbekistan is arguably the most powerful state in Central Asia today (see Figure 1).

As a result of its recent independence, Uzbekistan is currently facing monstrous health and environmental issues. During the country's 70-year history as a part of the Soviet Union, it experienced a severe lack of investment in industrial development as its population continued to increase. The high demand placed on cotton production within the region further exacerbated already existing societal and environmental fault lines. An examination of Uzbekistan's health care system and status is inevitably an examination of a history of air pollution, water pollution, severe economic constraints, and neglect. A true understanding of both the necessity for and the positive effects of medical donations in Uzbekistan cannot be obtained without first understanding the vastly limited resources, environmental issues, and the current health problems facing both the government and international community as they relate to Uzbekistan.

Demographic and social-economic indicators

Uzbekistan is a Central Asian nation, which covers 425,400 km², making it slightly larger than California. Uzbekistan's capital is Tashkent, with a population of 2.3 million and the country is divided into 12 provinces (oblasts). Uzbekistan is made up of 121 cities, 113 urban settlements, and 163 rural districts². Only 10.8% of the land is arable and it is totally landlocked. The population is estimated at 25.9 million (rising annually at approximately 1.9%); most of which are Muslim (Sunnis). Of those, three-quarters live in rural areas, where there are more employment opportunities. Uzbekistan consists of a predominantly younger population. In 2001, 44.6% of the population was under 18 years of age³. The average family size in Uzbekistan is 5.6 and life expectancy at birth is 64⁴.

Uzbekistan is a member of the Commonwealth of Independent States. As a result of the economic and social changes experienced since 1989 and the country's independence (1991), many people have fled the country's borders. Between 1989 and 1995, there was a net emigration of 565,000. The effects of the post-1989 transition include a decrease in output and income, a growth in poverty and a rise in unemployment⁵. "As a result of the fall of production and a substantial excess of workforce supply over demand, almost 70% of emigrants [are] people of working age"⁵. An increasing inflation rate and a decrease in purchasing power has continued and numerous income disparities continue to shape living standards⁶. With a GDP per capita in \$US of 299 and a GNI per capita of 2410, the population below the national poverty level line is 29%⁷. Policies of equity and growth, with liberalizing trade, and greater accountability in the public sector would be good priorities to reduce economic disparities and attract foreign investment.

Industry and environment

Major industries and exports in Uzbekistan include cotton (which accounts for 40% of exports), textiles, and natural gas. As its greatest source of income, cotton, has also become Uzbekistan's greatest source of health-related problems. Uzbekistan has a rate of tuberculosis among the highest in the world. Moreover, about 13% of new cases are multi-resistant. Among those patients who have been treated previously for tuberculosis, 40% have MDR-TB. The former Soviet Union, in an effort to become self-sufficient in cotton, diverted tributaries of the Aral Sea for massive irrigation of cotton fields in the area. The result has been environmental devastation. Since 1960, the sea level has dropped by 50%. Consequently, residents of Uzbekistan and Turkmenistan are paying the price, as winds whip tons of contaminated dust from the dry seabed into the air, leading to respiratory infections, diarrheal diseases, and high rates of tuberculosis⁸. Additional illnesses



Source: CIA – The World FactBook

Figure 1 Source: CIA – The World FactBook.

attributed to contaminated drinking water include typhoid, paratyphoid, hepatitis, intestinal disease, cancers, anemia, dystrophy, and cholera. The disaster put an even heavier burden on the people already hit by a strong economic downturn. As people become poorer and increasingly unable to afford healthy food, they grow weak and become easy prey for tuberculosis and other illnesses.

Health care delivery system

The health system that Uzbekistan inherited from the Soviet-era was centralized in terms of service and delivery. The system was characterized by having a large number of doctors, who were government employees. The emphasis on care was curative, resulting in high expenses and long hospital stays. In sum, the system was largely inefficient.

In 1993, Uzbekistan undertook a program of privatization that began with the introduction of health insurance and continued with the gradual privatization of health care facilities. Under the new program, the government would require private health facility owners to maintain the same standards as state facilities and to offer minimum free health care for the indigent population. In the first few years of the program, however, only pharmacies and small clinics were privatized.

The government has concentrated on implementing a major reform program, The National Program of Reformation of Health (1998–2005). The program involves significant changes in health policy and strategies, with a priority in delivering integrated primary health services while developing rural infrastructure and training new doctors and nurses in general family practice. The reform has also changed the focus of health care toward preventive care as well as cost effective delivery of health services.

The problems of the health care delivery system in Uzbekistan include an extremely short supply of vaccines and medicines in hospitals, the generally poor quality of medical training, and alleged corruption within the medical profession, which exacerbates the negative impact of changes in the system for the average patient and diverts treatment to favor private patients.

Another shortage in Uzbekistan is that of contraceptives. The flow of supplies into the country is

scarce. The United Nations Population Fund procured half of the total amount of contraceptives supplied to the country. In 1999, UNFPA provided contraceptives, which met 80% of the country's need⁷.

Health statistics

In addition to the population indicators already described, other health relevant indicators include those related to money spent for health care and health resources. In 1994, 11.1% of the annual government budget was allocated for health care in Uzbekistan. Of that amount, 60% went to state hospitals, 30% went to outpatient clinics and less than 6% went to medical research⁹.

Health resources showed that the number of physicians per 1000 people in 1997–1999 was 3.0. The number of hospital beds per 1000 people in 1996–2001 was 8.8¹⁰.

The estimated infant, child and maternal mortality rates are 55 per 1000; 63 per 1000; and 55 per 100,000, respectively. These rates are very high compared to similar countries¹¹.

Pharmaceuticals

Prior to its independence, Uzbekistan's drug policy and regulation system came directly from Moscow. As a result of its independence, in 1997, Uzbekistan adopted the *First Act on Drugs and Pharmaceutical Activities* under the Ministry of Health. The goal of the act was to ensure the implementation of a comprehensive national drug policy¹².

An official state register of pharmaceuticals approved for medical use in Uzbekistan contains 3500 products listed by brand name. Since 1994, prices have been fixed for the 20 most basic drugs. For all other products, price regulation is based on capping wholesale and retail mark-ups at 20 and 25%, respectively¹³.

Imported and internal shipments of pharmaceuticals are now decentralized and increasingly privatized. There are still, however, tremendous shortages of pharmaceuticals, basic medical supplies and medical equipment. As of 1999, domestic drug production met less than 10% of the demand¹⁰. All drugs imported to Uzbekistan must be registered with the pharmacological committee of the Health Ministry. Pharmaceuticals must meet the following requirements:

- All products must have a safety certificate from the country of origin.
- All products must also have a registration certificate from the Ministry of Public Health in Uzbekistan.
- A sample of each type of pharmaceutical arriving at the customs warehouse must be sent to the central laboratory of control and analysis.

For the most part, pharmaceutical sales have been decentralized. All drug stores, except for those located in hospitals and clinics, have been privatized. Uzbekistan, as mentioned before, has a major problem with shortage of medicines in general. According to a 1995 private study, the state system provided less than 20% of needed medicines and less than 40% of needed medical care. In 1990, the percentage of children receiving vaccines for diphtheria, pertussis, measles, and polio averaged between 80 and 90%. That statistic fell sharply during the first years of independence; for example, in 1993, fewer than half of the needed doses of measles vaccines were administered¹⁰. Clearly, while Uzbekistan is moving toward a completely autonomous effective pharmaceutical distribution system, international medical aid is still extremely necessary.

2002 operation provide hope

In response to the precarious state of Uzbekistan's economic, environmental, and medical situation, the US State Department facilitated a multi-organization humanitarian airlift to Uzbekistan. The airlift, which took place on 20th August 2002, was one of the largest undertakings of the larger, Operation Provide Hope, a humanitarian aid program established by the US State Department in 1992. In addition to the State Department, six additional NGOs collaborated in the collection and delivery of over \$35 million worth of medicines and medical supplies and \$16 million in medical equipment. In order to create the most useful load of medical supplies, the State Department collaborated with Uzbekistan's Ministry of Health and received a "wish list" of the most needed medicines and supplies. The NGOs then set out to obtain the necessary materials from a variety of private sources. Once they had the supplies, each NGO was responsible for transporting their contributed goods to Andrews Airforce Base in Maryland. From here, the supplies were loaded aboard a C17 Globemaster Aircraft and flown to Tashkent, Uzbekistan. The goods were received and distributed by the members of organizations to their various assigned regions (oblasts). The operation's partners and their assigned regions were as follows:

Counterpart International: Overall responsibility for the logistics of unloading the C-17 and uploading the smaller planes that delivered the meds to the various oblasts. They were specifically responsible for the distribution of meds to Karakalpakstan Oblast near the Aral Sea.

Project Hope: Responsible for the distribution of meds to Uchkuduk, Zarafshan, Navoi, Samakand, and Dzhizak.

Heart to Heart International: Responsible for the Ferghana Valley, Namangan, and Andijon.

AmeriCares: Responsible for the Karshi, Bukhara-Kashkadarynskaya Oblast.

Northwest Medical Teams International/MAP International: Responsible for the Termez-Surkhandarinskaya Oblast.

The level of collaboration and cooperation between the partners, the American government, the NGOs, and the Uzbekistan government makes this operation unique. As such, it is useful to learn about each of the individual organizations and their role in Operation Provide Hope in this successful example of a public/private sector joint activity.

The cooperating partners

AmeriCares

Officially established in 1982, AmeriCares has worked to deliver medicine and relief supplies to the indigent populations of more than 137 countries. Since its founding, AmeriCares has been responsible for the acquisition and distribution of over \$3.4 billion in aid. In addition to soliciting funds and supplies from the private sector, AmeriCares works with international and local organizations to insure the effective, timely, and appropriate distribution of medical supplies and care to those who need it most. Utilizing a program model combining strategic partnerships, high efficiency and tight auditing procedures, AmeriCares has established a 1:288 donation ratio¹⁴.

AmeriCares has played a significant role in the provision of aid to Uzbekistan since its first airlifts in 1996. From 1996 to the present, AmeriCares has delivered aid valued at over \$36,250,667¹⁵. As one of the organizations involved in Operation Provide Hope, AmeriCares provided "essential antibiotics and cardiovascular medicines totaling \$1.96 million"¹⁶. This aid was made up of 16 different products distributed to 42 medical facilities in Uzbekistan's Bukhara and Kashkadarya regions.

Project HOPE

Project HOPE (Health Opportunities for People Everywhere) is an independent, international, non-profit health education and humanitarian assistance organization. Founded in 1958, Project HOPE was originally identified with the S.S. HOPE hospital ship, which conducted medical training and humanitarian assistance missions around the world until 1974. Now land-based and operating in 37 countries, Project HOPE's primary areas of expertise are infectious diseases (including HIV/AIDS and TB), women's and children's health, health professional education, humanitarian assistance, development of health systems and facilities (including community health clinics and children's hospitals), and the *Health Affairs* journal. Project HOPE is based in Millwood, Virginia with allied international organizations in the United Kingdom, Germany, Switzerland, Japan, and Hong Kong.

Throughout its 44-year history, Project HOPE has utilized Gift-In-Kind (GIK) product donations to support its health education and humanitarian assistance activities. In recent years, Project HOPE has shipped on average, more than \$75 million per annum in donated supplies. Donated products include pharmaceuticals, medical supplies, and equipment. In addition to medical supplies, equipment and pharmaceuticals, donors have provided books, computers,

satellite communications systems, office supplies, packing materials, vegetable seeds, and free transportation.

Project HOPE has been involved in the implementation of a variety of programs within Central Asia dating as far back as 1988. Since 1991, Project HOPE has delivered more than \$450 million worth of humanitarian aid to all 15 of the former Soviet Republics. As part of Operation Provide Hope, Project HOPE delivered over \$25 million worth of medicines and supplies this past year to Tajikistan. In August 2003, Project HOPE assisted US State Department in the coordination of its annual Provide Hope airlift to Tajikistan's capital Dushanbe. Five NGOs participated in this project, which resulted in an airlift valued at more than \$18 million.

Heart to Heart International

In 1992, with the completion of its first multi-million dollar medical supply airlift, Heart to Heart International, a global humanitarian organization was established. Over the last 10 years, Heart to Heart has contributed more than \$300 million in pharmaceuticals and supplies to people in more than 100 countries around the world¹⁷. Started as a small volunteer organization, Heart to Heart has grown into a well-respected significant agency that establishes partnerships to promote health, alleviate hunger, and offer resources, education and hope. Heart to Heart International also leads seminars in continuing medical education, family practice, and advanced life support in obstetrics in order to increase the competency of local medical staff.

Over the last decade, Heart to Heart International has provided substantial aid to Uzbekistan. In 2002 alone, Heart to Heart was involved in three different aid projects resulting in a combined delivery of \$34,321,716⁵. For its part in Operation Provide Hope, Heart to Heart delivered medical aid valued at over \$19 million to the Fergana Valley region. This aid consisted of 62 pallets of medical supplies and was distributed to over 100 hospitals and clinics in the Ferghana Valley¹⁸.

Northwest Medical Teams International

What started as a fledgling group of volunteers dedicated to improving the health of those in need has resulted in an expansive humanitarian organization with operations in over 50 countries. In 2002, NWMTI received over \$90 million in donated supplies. When these donations were combined with a volunteer staff of 1931 strong contributing over 89,000 hours of service, the result was a 1:72 monetary donation ratio.

Since 1998, NWMTI has recognized and responded to the vast need for medical supplies in Uzbekistan. Over the course of their relationship, NWMTI has distributed \$22,902,695 worth of pharmaceuticals and medical supplies throughout the country. As a dedicated partner in Operation Provide Hope, NWMTI responded to the grave need for medications within the Termez Oblast by delivering a shipment valued at \$2 million to 33 hospitals and clinics within the Surkhandaryo region.

MAP International

MAP International was founded in 1954 and serves the health needs of poor people in over 107 countries.

Map's support comes in the form of providing essential medicines, helping to prevent and eradicate disease, and developing local communities. As a part of Operation Provide Hope, MAP was responsible for supporting NWMTI in the acquisition of donated medical supplies from a variety of sources. MAP is directly responsible for the shipment of over \$2 million in medical supplies.

Counterpart International

Originally named, the Foundation for the Peoples of the South Pacific (FSP), as a tax exempt, non-profit, non-partisan, non-sectarian voluntary international organization, Counterpart's service dates back to 1965. Though Counterpart International has a long history of establishing partnerships with governments, businesses, and international communities, and is equipped with a strong organizational base (Counterpart has offices in 60 countries, a staff of 300, and an annual budget of \$150 million), perhaps its most redeeming attribute is its commitment to the construction of institutions starting at the local level. Counterpart is well known for strengthening democratic civil societies by building institutions so that a society can help itself.

With on the ground programs in every nation of the former Soviet Union, Counterpart plays a crucial role in many programs designed to aid the Newly Independent States (NIS). Working closely with the US State Department, Counterpart played a critical role in organizing and carrying out Operation Provide Hope in Uzbekistan. Counterpart's responsibility included chartering an American Cargo Jet and assisting the other NGOs in distributing over \$35 million worth of medical supplies to 255 clinics and hospitals throughout Uzbekistan¹⁹.

Costs

A cost analysis of Operation Provide Hope can be broken down into four general categories; product donation costs, medical equipment costs, transportation costs, and NGO employment costs. The first of these, and by far the largest, is the wholesale value of the donated medical products. Table 1 provides a breakdown of the total value of donated goods as attributed to each of the participating NGOs.

The secondary cost sector deals with the surface shipment of \$16 million in medical equipment. Examples of the types of equipment donated include X-ray room and laboratory equipment, and supplies such as bandages, needles and sutures.

The tertiary cost sector deals with the transportation and distribution of the donated supplies. Represented in terms of the total mission cost, this figure includes the cost of procuring and operating the C-17 Globemaster Aircraft as well as the costs related to airport personnel. For this sector of the operation, the total mission cost was \$296,782.25.

In addition to product donation costs and air flight costs, an assessment of the NGOs' individual employment costs was necessary. Table 2 represents those costs. Together, all cost sectors combined resulting in a total cost for Operation Provide Hope at \$52,535,031.06.

Table 1 Total donation product value and distribution by individual NGOs (based on information from individual NGOs)

Donor	No. of pallets	Value (\$)
Heart to Heart International	95	19,167,992.87
North West Medical Teams/MAP International	27	2,056,832.07
AmeriCares	18	1,966,523.82
CitiHope	90	4,698,407.31
Project HOPE	26	6,280,767.71
Catholic Medical Mission Board	18	1,438,415.09
Total	274	35,608,938.87

Benefits

Certainly, the paramount benefit related to the donation and delivery of medication is the vast increase in the quality of life of the donor recipients. In Uzbekistan, likewise, the primary benefit and result are the direct improvements in the health and lives of over four million people across the country. However, taking a closer look yields a benefit analysis in more quantitative and economic terms. This analysis is useful in determining the efficacy of donation programs that utilize private sector, government, and NGO partnerships.

In Uzbekistan, the leading causes of death and disease include cardiovascular diseases, respiratory diseases, digestive diseases, and infectious diseases (see Table 3). Because Operation Provide Hope utilized intensive and effective communication between partners, medicines were donated according to need. As expected, the majority of the donated medicines focused on alleviating the aforementioned most

serious health conditions in Uzbekistan. A closer look at each reveals the positive results of the donations (see Table 4).

As in most other countries, cardiovascular diseases are the leading causes of death in Uzbekistan. It is appropriate then that the majority of the supplies and medicines delivered by the operation were aimed at cardiovascular conditions. In fact, medicines valued at over \$25 million account for the portion of the total donations related to cardiovascular conditions. With current rates of cardiovascular conditions in Uzbekistan at 782.5 cases per 100,000, the total estimated number of cardiovascular cases is over 203,000. The donated medications for these cardiovascular conditions are able to be distributed to and extend the lives of 3.125 million people. This means that the donated supplies can effectively treat a significant portion of people with cardiovascular conditions. With an average GNI per capita in Uzbekistan of \$2410, the additional gross income gained annually by those

Table 2 Estimated personnel costs for individual NGOs (based on information from individual NGOs)

NGO	Estimated personnel costs (\$)	Total \$ donation
Heart to Heart International	338,752.27	19,167,992.87
AmeriCares	34,753.99	1,966,523.82
CitiHope	83,034.05	4,698,407.31
North West Medical Teams/ MAP International	36,350	2,056,832.07
Project HOPE	110,998.80	6,280,767.71
Catholic Medical Mission Board	25,420.83	1,438,415.09
Total	629,309.94	35,608,938.87

Table 3 Structure of mortality (in %) by main cause of death and age group in Uzbekistan (1998), compared with the average for the European region (1997)

Cause of death	0–64 years		65 years and above	
	Uzbekistan	Europe	Uzbekistan	Europe
Cardiovascular diseases	39.1	30.7	77.8	59.9
Malignant neoplasms	10.6	22.8	4.8	16.5
Accidents, injury and poisoning	10.0	19.5	0.9	2.0
Diseases of the respiratory system	13.6	5.6	6.2	7.0
Infectious and parasitic diseases	5.2	3.0	0.6	0.5
Diseases of the digestive system	8.5	5.7	3.2	3.0
Ill-defined conditions	1.6	2.7	3.9	4.3
Other diseases	11.4	10.0	2.5	6.1

Table 4 Operation provide hope donations to leading health conditions and projected GNI gains (figures extracted from the US State Department's Project Distribution Report)

Cause of death	Quantity of donation	Value of donation (\$)	Approximate number of drug recipients	Approximate total GNI gained by recipients (\$)
Cardiovascular diseases	6593	25,467,883.93	3,125,000	489,230,000
Respiratory diseases	11,147	3,335,768.01	412,500	69,890,000
Digestive diseases	13,778	2,511,968.78	312,500	40,247,000
Infectious diseases	13,093	2,670,751.34	325,000	16,870,000
Total	44611	33,986,372.06	4,175,000	616,237,000

recipients of cardiovascular meds, accounting for the productivity gained for 1 year is over \$489,230,000.

In part due to past environmental abuses, the occurrence of respiratory conditions in Uzbekistan is disproportionately high. At a rate of incidence reaching 110.2 per 100,000, the total number of respiratory cases approaches 29,000. In order to facilitate the diminishment of this figure, Operation Provide Hope was successful in delivering medicines valued at over \$3.3 million. These medicines are capable of assisting 412,500 people and result in an estimated \$69,890,000 dollars in gained yearly income.

At 64.4 cases per 100,000, digestive diseases are among Uzbekistan's top health concerns with approximately 16,700 cases. As a result, Operation Provide Hope allocated over \$2.5 million in digestive medications. These medicines can directly affect 312,500 people and result in an estimated \$40,247,000 in additional GNI.

In addition to cardiovascular, respiratory, and digestive diseases, Operation Provide Hope also made significant inroads into the infectious disease category. With over 7000 cases of infectious disease, approximately \$2.6 million worth of meds were donated. These medicines can help extend the lives of over 325,000 people and create \$16,870,000 in additional GNI.

Cardiovascular, respiratory, digestive, and infectious diseases make up the greatest proportion of diseases targeted by Operation Provide Hope. The estimated economic growth in terms of gained annual income for donation recipients totals over \$616 million. This total represents a donation ratio of 1:12. This estimate is assuredly an underestimate of the total monetary value created as a result of the medicines because it does not include medicines targeted at conditions such as diabetes, iron deficiency, and typhoid, as these donations were considerably smaller in scale. While substantial, the benefit stemming directly from the donated medicines and supplies was not the only benefit that resulted from Operation Provide Hope.

In addition to the direct benefits resulting from the utilization of the donated medications, Uzbekistan will be positively effected by the partial alleviation of its spending on healthcare. Uzbekistan's gross domestic product (GDP) is \$7.5 billion. As a percentage of GDP, Uzbekistan spends 5.3%, or \$397.5 million on healthcare annually. Operation Provide Hope's donation of the equivalent of over \$52 million represents 13.2% of Uzbekistan's total healthcare spending. This significantly large percentage translates into money that can be used by Uzbekistan in a variety of ways, health related or not. As a percentage of

pharmaceutical spending in Uzbekistan, the donations show an even greater impact. Approximately 10%, or \$39.75 million of total health care spending in Uzbekistan is categorized as pharmaceuticals. The \$35 million dollars in pharmaceutical donations made by Operation Provide Hope equate to 89.7% of Uzbekistan's total spending on pharmaceuticals.

Beyond the monetary benefits of donating medical supplies to Uzbekistan, rest the qualitative benefits. These benefits include the opportunity for greater democratization in the region, greater economic liberalization, and the development of energy resources. In a time of great unrest not only in Uzbekistan, but also regionally and globally, the importance of establishing friendly and productive relationships with countries like Uzbekistan, cannot be underestimated. Certainly, the goodwill associated with aid in the form of medical supplies that directly save and enhance lives will allow the USA to establish not only a fruitful and mutually beneficial economic relationship with Uzbekistan but will be vital in the creation of a true, accurate, positive opinion of the USA abroad.

Conclusion

Through Operation Provide Hope, the lives of over 4 million Uzbeks have been significantly extended and enhanced. Beyond the great increase in the quality of life for this portion of the Uzbek population lies the vastly increased economic stabilization of the country, which translates into greater worker productivity, a stronger economic relationship with the international community and the opportunity for an unlimited future. Companies and organizations that donate products and labor to countries such as Uzbekistan are directly affecting and improving the lives of people all over the world. By establishing effective partnerships that improve societies and save lives, these organizations are helping the USA to become a global partner. In the end, the rewards of programs such as Operation Provide Hope will extend far beyond health and monetary benefits to a kinder, more humane and tolerant world.

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