



# Capabilities Statement



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## Capability Overview

Zipline is an end-to-end supply chain solution and the world's only national-scale instant logistics operator. Our service comprises best-in-class **warehousing and inventory management**, on-demand **distribution and logistics**, as well as **data and performance management**. By embedding these services into health systems, Zipline transforms the setting in which healthcare is delivered, expanding equitable access while decreasing costs and enabling more data-driven decision-making in public health.



## — Zipline Transforms Medical Access

Zipline designs, builds, and operates networks of world-class medical-grade warehouses, called hubs. The site of each hub is carefully selected with health system partners based on population coverage, health burdens, geographical reach, and flight path optimization, with each hub managing inventory for unlimited points of care in a surrounding 22,500 sq km service area.

Zipline delivers shipments via the fastest and most reliable instant logistics service, using the only scaled autonomous aircraft network in the world. The dataset underlying our warehousing, inventory management, and on-demand logistics drives supply chain performance and continuous improvement across health systems.



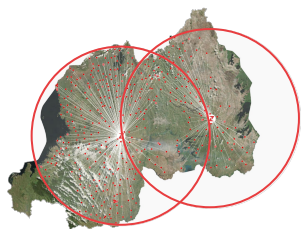
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Zipline's daily operation



## — Operational Footprint

Zipline operates the world's largest autonomous delivery network, capable of warehousing and delivering hundreds of different types of medicines, vaccines, blood products, and other medical supplies 24 hours a day, in all weather. With six active Zipline facilities and nine under construction, our system reaches thousands of health facilities serving 25 million people. Since launching in 2016, Zipline has completed 165,000+ deliveries, delivering over a million medical products. Over 75% of our deliveries are routine resupplies; emergency deliveries account for less than 25%.



### Rwanda

- 2 distribution centers
- 350 health facilities served
- 10 million people covered
- 70,000+ deliveries
- 75%+ of country's blood products



### Ghana

- 4 distribution centers, 4 launching in 2021-2022
- ~2,000 health facilities served
- 14+ million people covered
- 90,000+ deliveries
- 2.6+ million vaccine doses

## — Trusted Partners



**Zipline designs, builds, and operates nationwide networks of world-class pharmaceutical and medical-grade warehouses.**

## ADAPTABLE WAREHOUSE SOLUTION

Zipline's warehouse placement is optimized for health facility coverage, population serviceability, the distribution of disease burdens, and national health strategies and priorities.

Zipline builds and operates its own GDP-compliant warehouses, or can install droneports alongside its partners' existing medical warehouses.

Other 3PLs can hold inventory at Zipline's hubs, facilitating improved regional, multi-modal coordination across health system vendors.



## STATE-OF-THE-ART STORAGE SYSTEM

Our best-in-class warehouses employ FEFO fulfillment protocols to eliminate expiries. Zipline hubs across Ghana and Rwanda have achieved a loss and wastage rate under 0.02%.

With nationwide coverage, Zipline's hubs obviate the need for expensive, maintenance-heavy cold chain equipment at every point of care, while ensuring high-integrity cold chain items are instantly available wherever they're needed.

Each hub is fully equipped with medical-grade refrigerators, freezers, and blood banks to handle a wide range of controlled temperature requirements (2-8°C, -20°C, -70°C).



## FULL-SERVICE SUPPORT & TECHNICAL ASSISTANCE

Zipline designs customized inventory management and fulfillment systems with tailored protocols based on clients' needs. Our customer support team provides support 24 hours per day, seven days a week.

Operating a pull-based supply chain means health system planners can instantly adjust Zipline's inventory access and fulfillment SOPs, allowing regional supply chains to seamlessly meet emerging population health needs or changing policy priorities without resource-intensive, system-wide replanning and retraining.





**Zipline delivers shipments via the fastest, most reliable autonomous commercial aircraft in the world.**

## HIGH-SPEED DELIVERY

Fleet management capabilities allow Zipline to deploy over 20 aircraft simultaneously so each hub can complete hundreds of critical deliveries each day, reaching healthcare facilities and their patients within 15-45 minutes from the moment an order is placed.

Our aircraft cover a 160 km roundtrip service range, with a 1.8 kg payload at 110 km/h cruising speed. Zipline hubs also coordinate regional deliveries of test samples to national labs to reduce turnaround time from months to days.



## SAFE AND RELIABLE DELIVERY

Our aircraft fly along pre-planned flight paths embedded in national airspace and visible in real-time to national Air Traffic Control.

Zipline aircraft never land at health facilities and are only handled by trained professionals at our hubs, reducing onboarding time and complexity, as well as potential security risks.

Zipline maintains a 100% on-time and in-full delivery record, guaranteeing that products can reach patients reliably in all weather conditions.

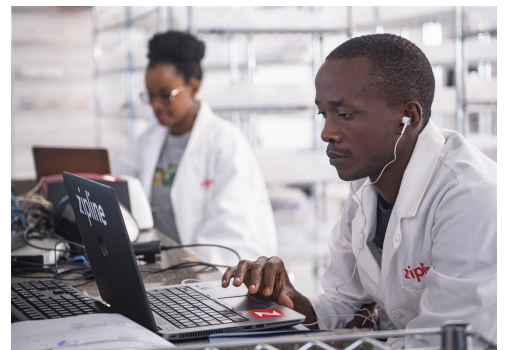


## RESPONSIVE FULFILLMENT

Each Zipline hub moves more than half a metric ton of freight per day and can operate 24 hours per day, seven days a week, with 100% uptime.

Health workers place orders using WhatsApp, SMS, or phone, allowing fast interactions with no need for special equipment, software, or data entry.

Zipline can easily deliver to drop points outside the traditional health system, such as mobile clinics, to enable equitable health access without additional infrastructure or investment.



## HIGH-GRADE QUALITY ASSURANCE

Zipline guarantees the quality of all delivered commodities, with 0% counterfeits and 100% cold chain integrity.

Zipline's inventory levels and distribution records are always 100% complete and visible to stakeholders across the supply chain, eliminating most opportunities for theft and leakage.



**Zipline analyzes supply chain performance to drive continuous improvement across health systems.**

## REAL-TIME VISIBILITY

Zipline's purpose-built inventory management and order fulfillment software assigns unit IDs to each product, tracking real-time stock positioning to provide a time- and location-stamped view into inventory at any point in the supply chain.

Every movement of inventory is controlled and secured through digital workflow processes designed for our fulfillment operators; no data is ever self-reported and there is no opportunity for human error.



## DATA INTEROPERABILITY

Zipline's data is easily interoperable with other supply chain systems. Zipline creates custom dashboards to facilitate live supply chain performance analysis, and can automate integration of databases so partners always have a complete dataset.

Our GS1-compliant product-level tracking gives government and donor partners a reliable and timely view of product demand at a national scale and with granular geographic precision.

Zipline's hub teams are in daily contact with hundreds of health facilities across a country, and use that contact to collect custom data points on behalf of partners to measure specific performance indicators.



## DATA-DRIVEN ADVISORY SERVICES

Zipline generates monthly and seasonal reports that decision-makers can use to remodel forecasting and distribution, and to eliminate stockouts, overstocking, expiries, and waste.

Our facility order datasets can be used for planning and route optimization, ensuring supply chain teams have actionable insights to drive informed decisions.

Zipline's real-time data can provide visibility into potential population health challenges and trends.



## — Case Study: Partners In Health



### THE CHALLENGE CONTINUING CHEMOTHERAPY AMIDST THE PANDEMIC

In early 2020, the COVID-19 lockdown posed a major health threat to outpatients at the Butaro Cancer Center of Excellence, Rwanda's main cancer care referral center, managed by Partners In Health and the Rwandan government. Many patients had to travel 8-12 hours round trip for treatment. As COVID-19 infections rose, health professionals feared lengthy travel could increase patient exposure or lead to missed or delayed treatment. PIH had to rethink its approach to delivering time-sensitive medicines.

### ZIPLINE'S SOLUTION AN AGILE, RESPONSIVE SUPPLY CHAIN

PIH collaborated with Zipline to distribute cancer medications to local district hospitals. Leveraging Zipline's aircraft, medications were delivered to these hospitals and PIH-trained local health workers were able to administer specialty care to patients. On-demand delivery reduced average patient travel time from eight hours to one hour - an 85% reduction in travel time that increased access to care, reduced risk of exposure, and increased treatment adherence. By March 2021, a year after launching this service with Partners in Health, Zipline had delivered over 17,000 tablets of eight cancer products to patients across 16 districts. This collaboration ensured that patients continued to have access to critical medicines and care.

## — Case Study: Government Of Ghana



### THE CHALLENGE REACHING GHANA'S EX-URBAN POPULATION

Nearly half of Ghana's population of 28 million lives outside of cities, and those 12 million residents are especially difficult to reach with time-limited, cold chain-dependent services like immunizations. Traditional ground transport can be delayed by weather or roadworks, while cold chain equipment is scarce and dependent on an unreliable electrical grid that does not cover the whole country. The Government of Ghana needed to find an alternative solution to de-risk its Covid-19 vaccination efforts.

### ZIPLINE'S SOLUTION INCREASED VACCINE COVERAGE WITH ZIPLINE'S NETWORK

When the Covid-19 pandemic hampered health workers' movements in 2020, Zipline's monthly vaccine deliveries rose by >400% from January to December 2020 as it worked to ensure continuity of routine childhood immunization programs nationwide. Zipline delivers the exact number of doses a facility will administer in a given timeframe, reducing waste and saving money. As of July 2021, Zipline has delivered over 2.6 million vaccines throughout Ghana.

