Rethinking the integration of Unmanned Aircraft Systems (UAS) into Supply Chain systems

Alfons van Woerkom

on behalf of Sara de la Rosa
UAS Coordinator, ISG
sara@isg-health.org
Interagency Supply Chain Group (ISG)

UAS COORDINATION  Hosted since June 2018 by The Global Fund and UNICEF

PARTNERSHIPS  7 ISG member + 2 Observer agencies (IDB, CDC)

WEBSITE  www.isg-health.org
Overview of ISG projects tracked

Health Supply Chain Drone Projects

🌟 ISG member funded Drone projects 17.1 million USD

Circle: Country requests to ISG > 7.3 million USD

16 AFRICAN COUNTRIES
8 REST OF THE WORLD
ISG partner ecosystem and work efforts

- **Policy & Advocacy**
  - Raising political will and Industry engagement platforms
- **Analytical Work**
  - M&E and Use case Prioritization Frameworks
    - Academia
- **In-Country Work**
  - UNICEF
  - PATH
  - Other NGOs
- **Partnerships**
  - Corporate partners / CSR support
    - technical
    - financial
    - advisory
    - other
- **Standards**
  - Country and cross-country standards
    - Service providers and operators
    - DG biologicals, packaging delivery standards

**Financial & economic Market & Business model analysis**

**Additional analyses**
- Private sector engagement
- Gaps assessments
- Market shaping
Health Impact = lives saved
i.e. one 5 lbs delivery parcel of vaccine vials can protect the life of about 100 children

Access
• reliable, fast access within 15-45 minutes to rural and remote health facilities

Availability
• Reduce % stockouts due to delivery failure

Local empowerment
• economic impact
• high quality supplies and business services

Turnaround time
• Laboratory patient diagnosis and delivery of treatment

Decreasing waste
• expiries and spoilage
Establishing a collection of Toolkits for

- implementations/operations
- evidence generation Monitoring & Evaluation
- cost estimation
• USAID’s GHSC-PSM is utilizing UAVs to transport and deliver health commodities and collect laboratory samples
  ✓ Working in rural settings
  ✓ Integrating into existing supply chain - not testing technology
  ✓ Looking to improve health outcomes
  ✓ Strong element of knowledge transfer
  ✓ Close collaboration with the Malawi Ministry of Health and Department of Civil Aviation

Community Health Worker Elizabeth Pemba receives antimalarials and vaccines
Flights occur across Lake Malawi

- **Two types of boxes** → single use for drops only, → multi-use for delivery and collection

- **Cold chain capability** through use of a styrofoam box and temperature monitor

- UAS are a valuable asset to
  - reduce stock outs between regular distributions,
  - conduct emergency deliveries,
  - collect lab samples and
  - return diagnostic results to get patients on treatment sooner

**Delivery Route:** Nkhata Bay District Hospital to Likoma Island Hospital

- Air distance: 76km (Range: 100 km)
- Flying time: ~55 minutes, Battery Powered
- Speeds: cruise 80 km/h max 160 km/h
- Payload: up to 6 kg

Malawi ongoing work, June 2019
Flight Range: 160 km
Flying time: ~45 minutes, Battery Powered
Speeds: cruise 101 km/h max 128 km/h
Payload: up to 1.75 kg

Ghana ongoing work, April 2019

- 4 Distribution Centers
- 148 High Priority Products
- 2000 health centers serving 15M people
- 600 delivery flights/day

**Partners:** GAVI, Zipline, UPS Foundation, Pfizer, and Ghana MoH

- Contract value USD $12.5 million over 4 years

World's largest vaccine drone delivery network
Capacity Building
Roadmap to introducing UAS

Phase 1: Advocacy & demo testing (6+ months)
- Evidence generation on safety, acceptability, and feasibility

Phase 2: Ongoing use & validation (1 year)
- Demonstrate effectiveness and efficiency of UAS

Phase 3: Expanding impact (6+ months)
- Governments scale up UAS to maximize impact

Health Impact
- Improved health outcomes of all communities

1. Stakeholder / community engagement
2. Regulatory approvals & support
3. Feasibility testing
4. Business case implementation
5. Local capacity building
6. Expanded delivery
7. Sustainability planning & transition

Credit: Village Reach