Three-Part Webinar Series

Webinar 1: Industry Readiness for Vaccine and Life Science Products Transportation

Welcome

21 October 2020
Industry Readiness for Vaccine & Life Science Products Transportation

Andrea Gruber
Head, Special Cargo
IATA
This session is conducted under the Competition Law Compliance

Microphones have been muted

Please submit your questions through the Question box and send to Everyone

The webinar is being recorded and will be made available afterwards, including the PPT slides.
Transport of Vaccines and Life Science Products by Air

Welcome Address
Air Cargo Economic Outlook
Status & Regional Perspective
Risk-based Approach to Preparation
Industry Perspective – CCA

Speaker biographies are available on the IATA website
Air Cargo Markets:
Recent developments & the near-term outlook

Andrew Matters
Deputy Chief Economist
IATA

October 2020
Decline in cargo volumes similar to the GFC in 2008-09

After falling by 25% yoy in April, CTKs are currently down 12.6% yoy (Aug)

Source: IATA Economics using data from IATA Statistics
Performance is mixed across regions…

…volumes are still well down vs a year ago in Lat.Am, Eur and AsPac

RPK growth (yoy) by airline region of registration

Source: IATA Economics using data from IATA Statistics
Widespread weakness across major route areas
Asia-North America is the best performing large market currently

International CTK growth by route (Aug 2020, % year-on-year)

- Afr - Asia
- Nth - Central Am
- ME - Nth Am.
- ME - Asia
- North - Sth Am.
- Within Eur
- Afr - Eur
- Eur - Sth Am.
- Afr - ME
- Americas - SW Pac
- Asia - SW Pac
- Eur - Cent Am.
- Within Asia
- Eur - Nth Am.
- Eur - Asia

Source: IATA Economics using data from IATA Statistics
Lack of capacity is a key part of the current cargo ‘story’
Dedicated freighter capacity is up ~30% yoy, belly capacity is down ~70%

Source: IATA Economics using data from IATA Statistics
Shortage of belly capacity has forced yields higher
August capacity down 30% yoy, yields up 65% vs last year

**Graph:**
- **Cargo yields, including surcharges**
- **Capacity: available cargo tonne km**

Source: IATA Economics using data from IATA Statistics and CargoIS
Latest developments by region (overview)
Capacity has fallen more than volumes; load factor has risen significantly

<table>
<thead>
<tr>
<th>World share</th>
<th>August 2020 (% year-on-year)</th>
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<tr>
<td></td>
<td>CTK</td>
<td>ACTK</td>
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<td>TOTAL MARKET</td>
<td>100.0%</td>
<td>-12.6%</td>
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<tr>
<td>Africa</td>
<td>1.8%</td>
<td>-0.2%</td>
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<tr>
<td>Asia Pacific</td>
<td>34.5%</td>
<td>-20.1%</td>
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<td>Europe</td>
<td>23.6%</td>
<td>-18.9%</td>
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<tr>
<td>Latin America</td>
<td>2.8%</td>
<td>-27.3%</td>
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<tr>
<td>Middle East</td>
<td>13.0%</td>
<td>-6.9%</td>
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<tr>
<td>North America</td>
<td>24.3%</td>
<td>1.7%</td>
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</table>

See link to our monthly briefing [here](#)

Source: IATA Economics using data from IATA Statistics
Cargo a partial offset to collapsed passenger revenues
Cargo’s share of operating revenues had been in decline; now ~25%

Cargo share of total airline industry operating revenue, %

Source: IATA Economics using data from IATA Statistics, own forecasts
Export orders have rebounded sharply…
…pointing to a strong recovery in air cargo volumes

Source: IATA Economics using data from IATA Statistics and Markit
Air pharma has proven resilient this year
In terms of both volume and price developments vs other air cargo

Source: IATA CDD-enhanced CargoIS

Other Commodities = Biological, Dangerous Goods, High Value, Live Animal, Perishables.
Looking for insights into air transport markets and trends?

Download the IATA Economics Mobile App

IATA Economics Mobile App

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Industry Status with Regional Input

Andrea Gruber
Head, Special Cargo
IATA
Call-to-Action from the AirPharma Webinar

Industry readiness and preparedness to manage globally a temperature-controlled supply chain for vaccines, health, and humanitarian supplies

• Global Collaboration
• Plan - Prepare - Inform
• “Continuous improvement is better than delayed perfection” - Mark Twain
Managing a global temperature-controlled supply chain for vaccines, health, and humanitarian supplies

Key considerations:
- Capacity & Connectivity
- Capabilities & Facilities
- Infrastructure & Equipment
- Border Processes
- Security & Safety
- Interconnected Logistics Networks
Supply Chain Challenges

Uncertainties have a great number of implications on the supply chain planning efforts.
Supply Chain Challenges

- Manufacturing locations and sites ready to ship the vaccines
- Product shelf life & efficacy and number of doses of vaccines required
- Overall weight, size and volume of shipments foreseen
- Handling, transport and storage requirements
- Different vaccines with different temperature conditions
- Understand the supply chain constraints
- Identifying the airline capacity and connectivity
- Identifying the airport, handler and cargo terminal capabilities
- Ensure compliance on the Regulations (e.g. DGR)
Supply Chain Challenges

COMMUNICATION

- Uninterrupted temperature-controlled management across supply chain
- Ensure appropriate and availabilities of Road Feeder Services (RFS)
- Coordinating an integrated transport solutions and land-based infrastructure in remote areas
- Local distribution operational capacities
- Reinforced multilateral communication on services and capabilities, etc.
Supply Chain Challenges

COMMUNICATION

- Availability of specialized temperature-controlled infrastructure, facilities and equipment
- Dedicated qualified and trained staff
- Planning on overall capabilities
- Temperature-controlled dollies helping maintaining temperature control while the shipments are outside the temperature-controlled facility
- Accommodating inbound and outbound aircrafts
- Airport communities for coordination, consistency and uniformity
- Trucking access directly to the aircraft & security protocols
Supply Chain Challenges

COMMUNICATION

- Governments and regulatory bodies
- Border processes
- Facilitation procedures
- Health authorities
Supply Chain Challenges

COMMUNICATION

- Capacity & Connectivity
- Planning to ensure safe, reliable transport and distribution
- Operational capabilities and aircraft capacity
- Prioritization of shipments
- Facilitating freighter charter
- Interline agreements
Global & Regional Perspective

**COORDINATION**
- Real-Time Digital Supply Chain
- Initiatives aiming at rapid and efficient access to governments in Africa
- Everyone involved must work closely in real-time

**CAPACITY/CONNECTIVITY**
- Africa has been hard aggravating connectivity
- Withdrawal of capacity due to operational reduction by loss-making airlines - AME
- Lack of manpower at airports

**LOGISTICS/INFRASTRUCTURE**
- Communities – EUR / ASPAC Airports
- Ground handling warehouse capacity management for large volumes of pharma
- Unprecedented financial constraints – SA
- Lack of temperature-controlled area for customs inspection, if necessary

**DISTRIBUTION**
- Putting the lessons learned from PPE distribution to good use
- Establish regional control and communication centers
- Last mile delivery
Future Requirements

Uncertainties have a great number of implications on the supply chain planning efforts.

COLLABORATION
COMMUNICATION
PLANNING
Industry’s Readiness Starts Here

The aviation and the pharmaceutical industries have been working together in collaboration for many years to strengthen the quality requirements with realistic capabilities.

The importance of global supply chain standards and harmonized procedures

TCR specific information on vaccine transportation:
- Information in Chapter 4, Sections 4.2.9.2 and 4.2.9.3
- Packaging Requirements in Chapter 6
- WHO Documentation and Labelling for vaccines in Chapter 7, Section 7.8
- Good Storage Practices in Chapter 8 sections 8.2.8 and 8.3.3
- Product Temperature Ranges Chapter 17, Section 17.5
Risk-based Approach to Preparation

Ronald Schaefer
Senior Principal, Consulting
IATA
Transportation of COVID-19 Vaccines

Transporting additional vaccines globally will be challenging

Additional key considerations and opportunities:

• International regulations
• Packaging (active vs passive)
• Infrastructure & capabilities
• Supply chain integrity (alignment of processes, standards and procedures)
• Transparency
• Risk assessments
Transportation of COVID-19 Vaccine (Storage)

Priorities for developing capacity and resources for vaccine distribution include:

• The availability of temperature-controlled facilities and equipment—maximizing the use or re-purposing of existing infrastructure and minimizing temporary builds

• The availability of staff trained to handle time and temperature-sensitive vaccines

• The building of robust monitoring capabilities to ensure the integrity of the vaccines is maintained
Mitigating the Risks

- **Quality and product integrity** cannot be jeopardized.
- **Building confidence** and trust through knowledge, training and global standards.
- **Continuous improvements, harmonization, collaboration and alignment** with industry initiatives are key elements that will transform the future.

**Industry Standards**

**Quality Programs**

- Security 2013
- Pharma 2014
- Animals 2018
- Fresh 2019
Approach to Harmonized Standards
Different approaches for stakeholders

Approaches:

- Individual
- Network
- Community
CEIV Pharma (Community Approach)
Certified Pharmaceutical Trade Lanes Development

Locations

- 26 Ongoing Communities
- 6 Communities in Discussion
CEIV Pharma – Locations Certified Worldwide
Certified Pharmaceutical Trade Lanes Development

Locations
300+ Certifications Completed
Benefits of Harmonized Approach
A harmonized approach will improve compliance and quality, mitigate risks and increase visibility of stakeholders

- Improve handling and transport
- Instill trust & confidence in the air freight environment
- Increased competency by training
- Implementation of quality-driven strategies
- Global harmonized Audits
- Risk-based Approach
- Recognized certified organizations
- Visibility of capabilities

COMPLIANCE
QUALITY
MITIGATING RISKS
VISIBILITY
Capabilities & Infrastructure Industry Platform – ONE Source

- **Visibility** across the supply chain
- Find **facilities & infrastructure** with **validated** information
- Demonstrate **competencies** of handling **expertise**
- Showcase adherence to **quality standards**
Thank You

CEIV Pharma
IATA ONE Source
IATA Training
Industry Perspective

Nicola Caristo
Secretary General
Cool Chain Association
COOL CHAIN ASSOCIATION

Perspective on the importance of supply chain collaboration and required efficiencies to ensure industry readiness for the global distribution of the COVID-19 vaccine.
THE COOL CHAIN ASSOCIATION

- CCA Membership Overview
- Perishable Project – The LAX initiative
- Vaccines Distribution - The Scenarios Challenge
- Supply Chain Critical point and Bottleneck
- COVID-19 Airport Distribution Change Management Matrix
- Project charter for change management
- CCA Members Workshop and follow up
THE COOL CHAIN ASSOCIATION (CAA)

CCA - MEMBERS

- Airlines 19%
- GHA 17%
- Freight Fwd 14%
- Packaging 11%
- 3PL 11%
- Trucking Co. 11%
- Academic 11%
- Airports 8%
THE COOL CHAIN ASSOCIATION (CAA)
PERISHABLE PROJECT – THE LAX INITIATIVE

Scope:
- Improve quality
- Define minimum standard
- Adopt degree-hour standard
- Accountability
- Reduce Inefficiencies A-Z
- Reduce Impact at environmental level
- Sustaining shelf-life of perishable products
- Inform and make public aware of cold-chain integrity

Methodology: Degree Hours

Type of loading: passive solution and active container

Type of protection: cool /thermo dollies

Standards: feedback for regulators (CEIV Program)

<table>
<thead>
<tr>
<th>Term</th>
<th>LAX LUX</th>
<th>CV</th>
<th>FREIGHT</th>
<th>Airports</th>
<th>Airlines</th>
<th>GHA</th>
<th>Shipper (Consignee)</th>
<th>Packaging Solution</th>
<th>ULD provider (Supplementary thermal protection)</th>
<th>IT platform</th>
<th>Aircraft manufacturer</th>
<th>Regulatory Reference</th>
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<td>LAX LUX</td>
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Introducing: Degree-Hours
- Assignment: Maintain between 2-8 °C
- Transit time: 78 hours
- 78 * 5°C = 390 °C (degree-hours)

Pallet TOP
- First conclusion: Top Layer Pallets is Most Irregular
- Some excursions above 10 °C
- Highest number of degree-hours
THE COOL CHAIN ASSOCIATION (CAA)
PHARMA AND VACCINES DISTRIBUTION - SCENARIOS

ACTUAL SCENARIO CHALLENGE

- AIRLINES NETWORK REDUCTION
- STAKE HOLDERS CONTINGENCY PLANS

+ STANDARD PHARMA & VACCINES DISTRIBUTION

COVID 19 DISTRIBUTION SCENARIO CHALLENGE

- AIRLINES NETWORK REDUCTION
- STAKE HOLDERS CONTINGENCY PLANS
  + STANDARD PHARMA & VACCINES DISTRIBUTION
  + COVID-19 VACCINES DISTRIBUTION
    - TEMPERATURE REQUIREMENTS
    - PACKAGING REQUIREMENTS
    - FORECASTS AND QUANTITY
    - TIME FRAME
1. TEMPERATURE REQUIREMENTS

2. PACKAGING REQUIREMENTS

3. AIRPORTS
**THE COOL CHAIN ASSOCIATION (CAA)**

**AIRPORTS COVID-19 DISTRIBUTION CHANGE MANAGEMENT MATRIX**

- **FACILITY**
- **W/H OPERATION**
- **RAMP OPERATION**
- **TRAINING**
- **SAFETY**
- **SECURITY**
- **SUPPLIER MANAGEMENT**
- **RISK MANAGEMENT**
- **QUALITY**

### AIRPORT COVID 19 DISTRIBUTION CHANGE MANAGEMENT MATRIX

<table>
<thead>
<tr>
<th>Facility</th>
<th>Warehouse Operation</th>
<th>Ramp Operation</th>
<th>Training</th>
<th>Safety</th>
<th>Security</th>
<th>Supplier Management</th>
<th>Risk Management</th>
<th>Quality</th>
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<tbody>
<tr>
<td></td>
<td>Temp. Mapping</td>
<td>Check in/Delivery</td>
<td>- weight &amp; Balance</td>
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<td>Capability</td>
<td>Storage</td>
<td>- Contamination</td>
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<td>- General Cargo</td>
<td>(in and out)</td>
<td>- loading/unloading</td>
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<td>- DG Management</td>
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<td></td>
<td>- General Cargo</td>
<td>- Contingency</td>
<td>- Temperature</td>
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<td>(Not Monitored)</td>
<td>Operation have to consider the both dedicated temperature controlled areas and general cargo areas and in harmonization with Ramp OPs</td>
<td>management O/B</td>
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<td>Operation have to be harmonized with Warehouse OPS</td>
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<td>Low Temperature training</td>
<td>Personal Protective Equipment (PPE)</td>
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<td>Identification of new critical supplier and/or SOP review</td>
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<td>Definition of new critical control points</td>
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<td>Risk Ranking Update</td>
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| Type of packaging | Packaging types | Active | Hybrid | Passive |           |          |          |          |          |          |          |          |
|                   | - Active         |        |        |         |           |          |          |          |          |          |          |          |
|                   | - Hybrid         |        |        |         |           |          |          |          |          |          |          |          |
|                   | - Passive        |        |        |         |           |          |          |          |          |          |          |          |
|                   | - Loose          |        |        |         |           |          |          |          |          |          |          |          |
|                   | - ULD            |        |        |         |           |          |          |          |          |          |          |          |
|                   | - Pus           |        |        |         |           |          |          |          |          |          |          |          |

| Forecast and Quantity | Handling volumes | Loose | ULD |            |          |          |          |          |          |          |          |          |
|                       | Contingency      | scenarios per flow | scenarios per quantity | scenarios per flights |          |          |          |          |          |          |          |

| Time frame | TBD |

**Cool Chain Association**

WWW.COOLCHAIN.ORG
THE COOL CHAIN ASSOCIATION (CAA)

PROJECT CHANGE MANAGEMENT CHARTER

1. Purpose
2. Project Objectives
3. Description
4. Deliverables and Requirements
5. Milestones
6. Risks
7. Opportunities
8. Functions involved
9. Budget
10. Criteria for assessing the success of the process
The Cool Chain Association (CAA)

Members Workshop

04th of November 2020 from 15.00 to 16.00 (CEST time)

During the webinar we will share with all the members the last CCA initiatives and ongoing fruitful collaboration with IATA. As per the moment we’re living, the Webinar will have a special focus on the Vaccine issue, in particular we would like to share and discuss with all of you - in a very interactive way - following points:

- Actual pharma and vaccines transportation experience
  How the pandemic situation and Airline capability reduction is impacting the pharma products and vaccines supply chain?
  How Airports Communities and single stakeholders are re-organizing our own internal processes to guarantee the operation and the sustainability of the supply chain?

- COVID 19 vaccines distribution - Scenarios exercises
  Which are the main aspects Airport Communities and single stakeholders are considering for the upcoming COVID 19 vaccine distribution?
  Use of the Airports COVID-19 Distribution Change Management Matrix and dedicated Project Charters
Thank you!

Nicola Caristo
CCA – Secretary General

nicola.caristo@coolchain.org
Wrap Up & Next Steps

Andrea Gruber
Head, Special Cargo
IATA
Supply Chain Possible Solution

COMMUNICATION

Working back in the logistics chain
Focus on industry readiness to manage globally a temperature-controlled supply chain for vaccines, health, and humanitarian supplies

Call-to-Action

• Information Sharing - Global Collaboration

• Plan - Prepare – Inform

• Engage and communicate on scale up projects and initiatives for better space and distribution planning

• Stay Tuned
Question to the audience.... to unlock the answer!

From the challenges that have been outlined by the speakers what are the other areas you believe IATA should be addressing or getting involved in on behalf of the industry?

You can use reply at cargo@iata.org
Additional Outreach & Resources

Three-Part Webinar Series: Transport of Vaccines and Life Science Products by Air Cargo

This webinar series will explore the aviation industry’s challenges with regards to the transportation of an eventual vaccine and explain the role that IATA standards in pharmaceuticals and other tools are playing in moving medical supplies in this extraordinary time.

Webinar 2 - Global distribution and the flow of vaccines throughout the supply chain, 24 November / 14h00-16h00 CEST

Hear firsthand from transport and handling supply chain experts as they showcase actionable steps developed to achieve the upcoming vaccine distribution effort. Shippers, airline, ground handlers, freight forwarder and regulatory agency will speak to specific initiatives being implemented, addressing foreseeable challenges along the temperature-control supply chain as well as collaboration and partnerships.

REGISTER NOW

Webinar 3 - Key learnings in the aftermath of the vaccine distribution effort & paving the way for the future, TBD

Transportation of COVID-19 Vaccine

Air cargo plays a key role in the distribution of vaccines through well-established temperature-sensitive distribution systems, using cutting-edge technology and procedures. This capability will prove crucial to the quick and efficient transport of COVID-19 vaccines once available. This will naturally require careful planning by every segment in the entire cargo supply chain to ensure full preparedness when vaccines for COVID-19 are approved and ready for distribution.

Action Cargo: COVID-19

Enabling global trade

Airlines transport over 52 million metric tons of goods a year, representing more than 35% of global trade by value but less than 1% of world trade by volume. That is equivalent to $6.8 trillion worth of goods annually, or $18.6 billion worth of goods every day. Find out more interesting air cargo facts (pdf)

VISIT iata.org/cargo

VISIT iata.org/vaccine-transport
Thank you

- Please visit iata.org/vaccine-transport to register for the upcoming webinars
- Please visit iata.org/cargo for all COVID-19 resources

For further information, contact us at cargo@iata.org