



中国民用航空局民用航空医学中心



Aviation Public Health Risk Assessment

——Analysis and Prevention of Microbial Contamination
on aircrafts

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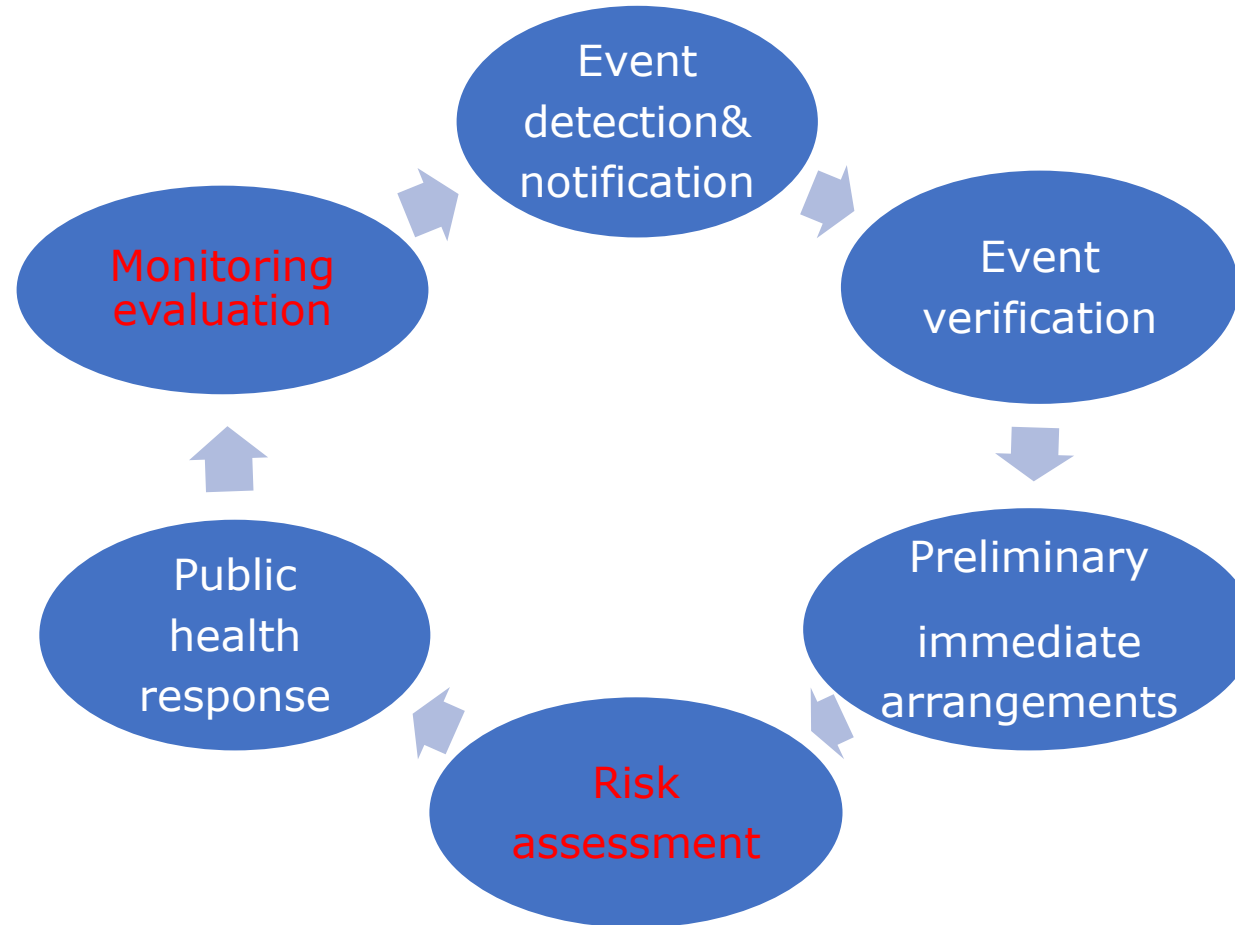
Civil Aviation Medicine Center of CAAC



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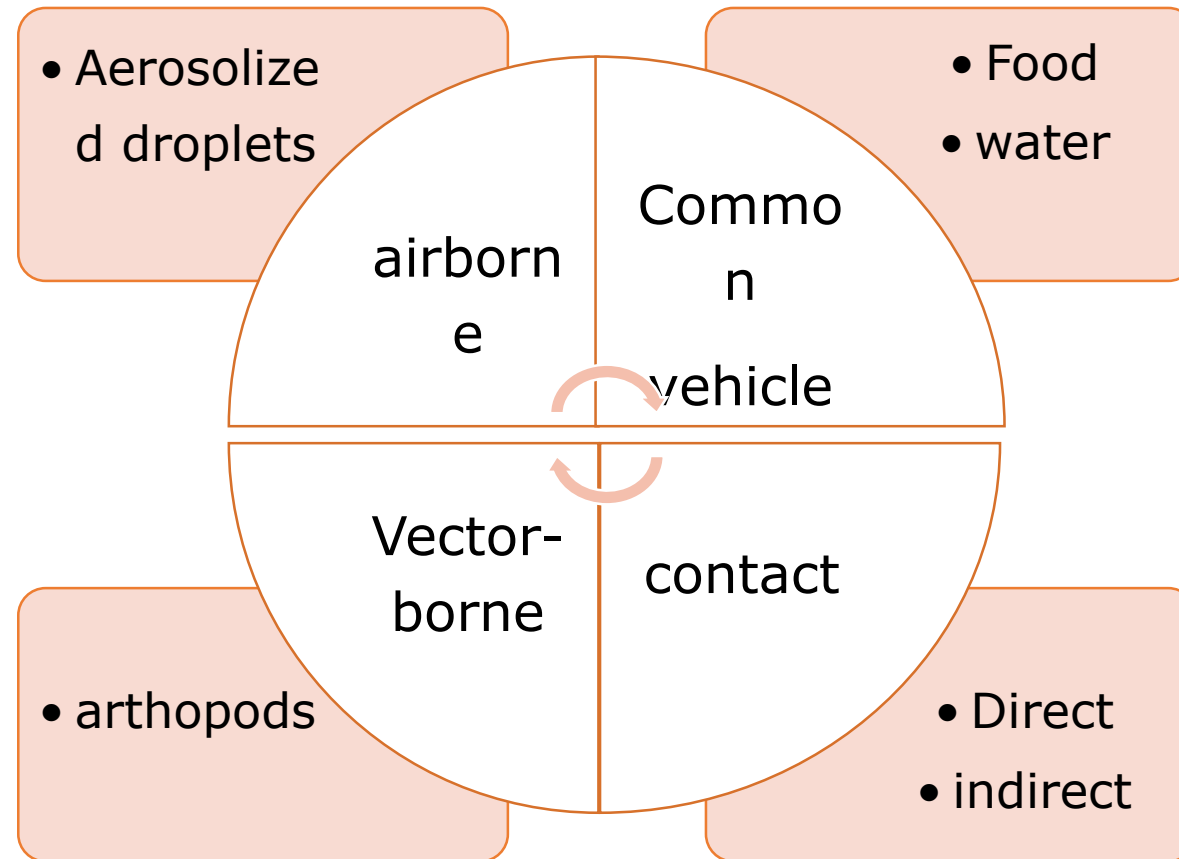
- ❑ Framework for public health risk management
- ❑ Microbiological contaminant risk assessment on aircraft interior surfaces
- ❑ Health measures for events related to reduce risk in contact pathways

Framework for public health risk management



•Handbook for the Management of Public Health Events in Air Transport, WHO (2015)

Routes of disease transmission via aircraft



Microbial contamination of aircraft surfaces

- **Objective:** Microbial contamination status of surface materials
- **Subjects:** high touch contact surfaces
- **Detection methods:** Microbial culture method, mass spectrometry
- **Monitoring items:** total number of bacteria, pathogenic bacteria



Results of total bacterial count monitoring

Results of total bacterial count monitoring of the tray table and seat armrests

Sampling	Number	Total bacterial (cfu/cm ²)			
		<i>P</i> ₂₅	<i>P</i> ₅₀	<i>P</i> ₇₅	<i>P</i> ₉₅
Tray table	408	0.4	1.0	5.4	45.5
Armrests	408	0.1	1.4	4.0	47.8
Total	816	0.1	1.1	5.0	45.8



Comparison of total bacterial counts between tray tables and seat armrests on different travel distance

Voyage	Number	Tray table (cfu/cm ²)				Armrest (cfu/cm ²)			
		Min	Max	<i>P</i> ₅₀	IQR	Min	Max	<i>P</i> ₅₀	IQR
Long-range	492	0	300	2	9.1	0	300	3.0	15.5
Short-range	324	0	30	1	5.0	0	40	1.1	3.3

Assessment of Efficacy of Aircraft Cleaning

➤ Quantitative analysis:

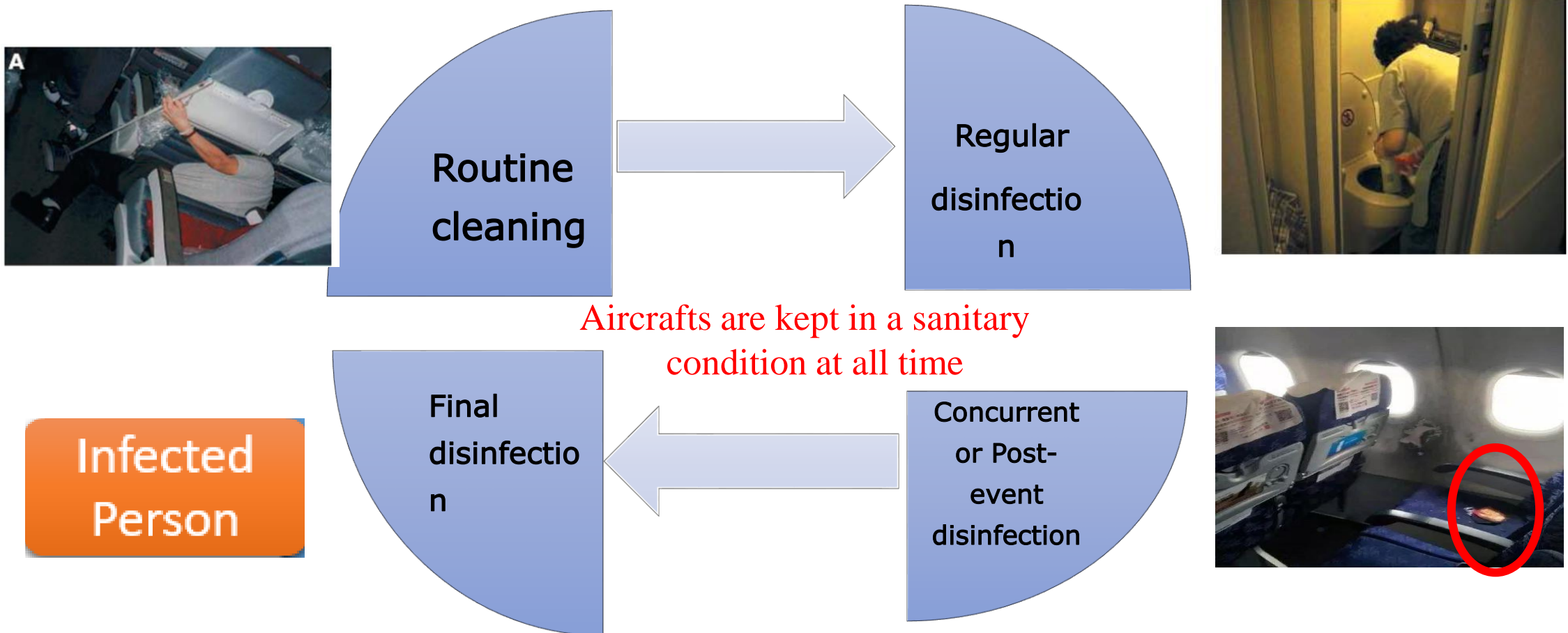
Fluorescent labeling method

- before cleaning –labelled
- after cleaning- fluorescent marks were cleared



Health measures to reduce risk in contact pathways

➤ Disinfection of aircraft





Health measures to reduce risk in contact pathways

➤ Hand Hygiene

YOUR 4 Moments for Hand Hygiene

- before touching a patient
- before having a meal
- after body fluid exposure risk or touching contaminated high touch surfaces
- after using the restroom





Health measures to reduce risk in contact pathways

- **Microbial contamination monitoring**
- **Aircraft cleaning effect evaluation**
- **The aircraft disinfection**
- **Hand hygiene**

Thanks
