

The MERS-tracker story

Incorporating results from Middle East respiratory syndrome coronavirus (MERS-CoV) field studies into decision making

21 November 2024



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MERS-CoV epidemiology



THE LANCET
Infectious Diseases

Image source:
Dr Elmoubashar Farag, OHLEP

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Middle East respiratory syndrome coronavirus in dromedary camels: an outbreak investigation

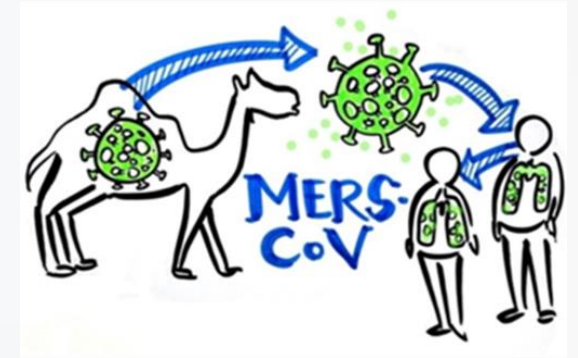
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MERS-CoV is one of the high impact coronaviruses that have emerged in recent years

- Betacoronavirus
- Zoonotic
- Pandemic potential

First identified in KSA and Jordan in 2012



Dromedary camels were confirmed as the reservoir host through OH investigations

No specific therapeutics or vaccines licensed/ available; several candidates in development

One of 9 WHO priority pathogens for research and development (R&D) activities

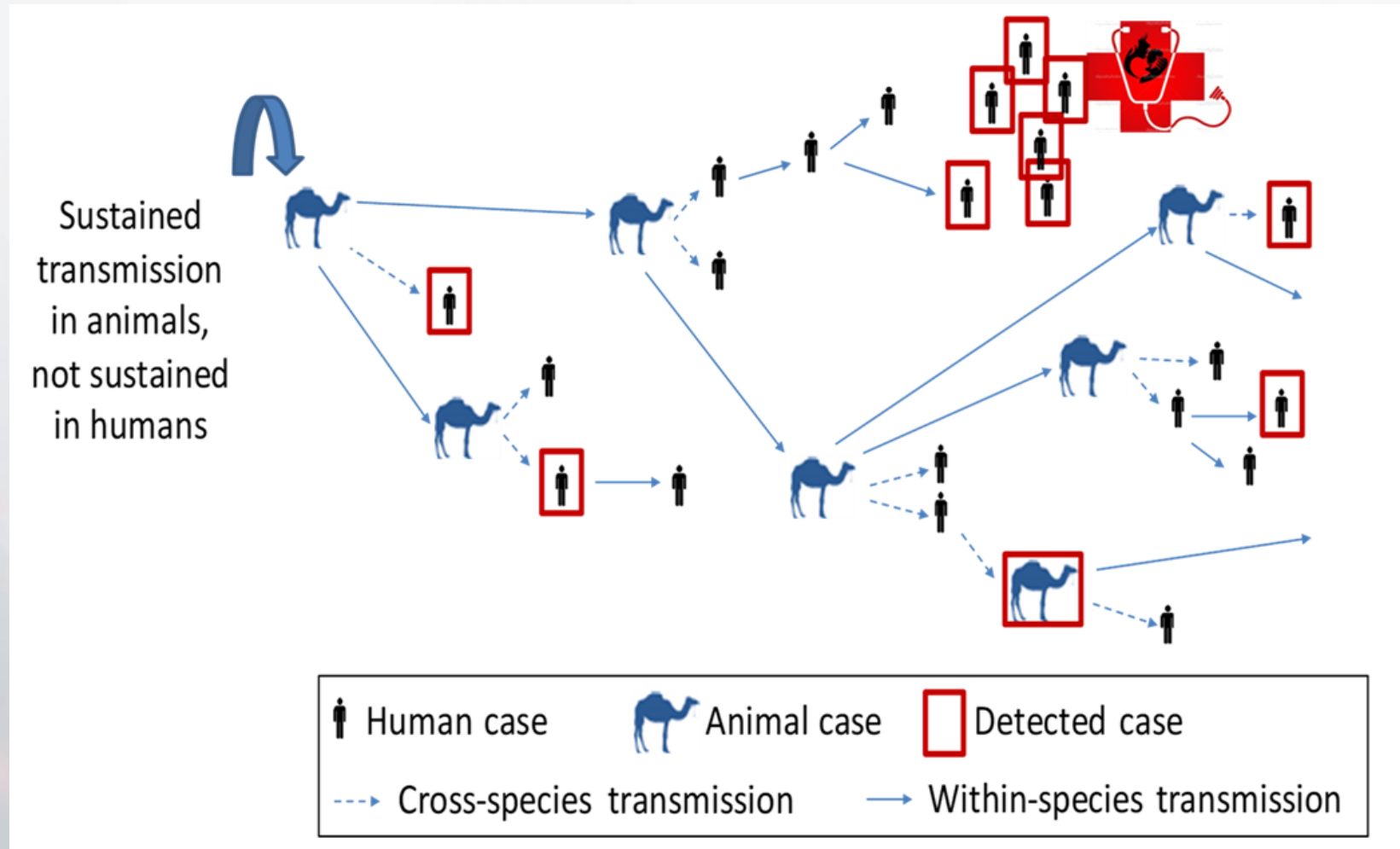


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MERS-CoV transmission

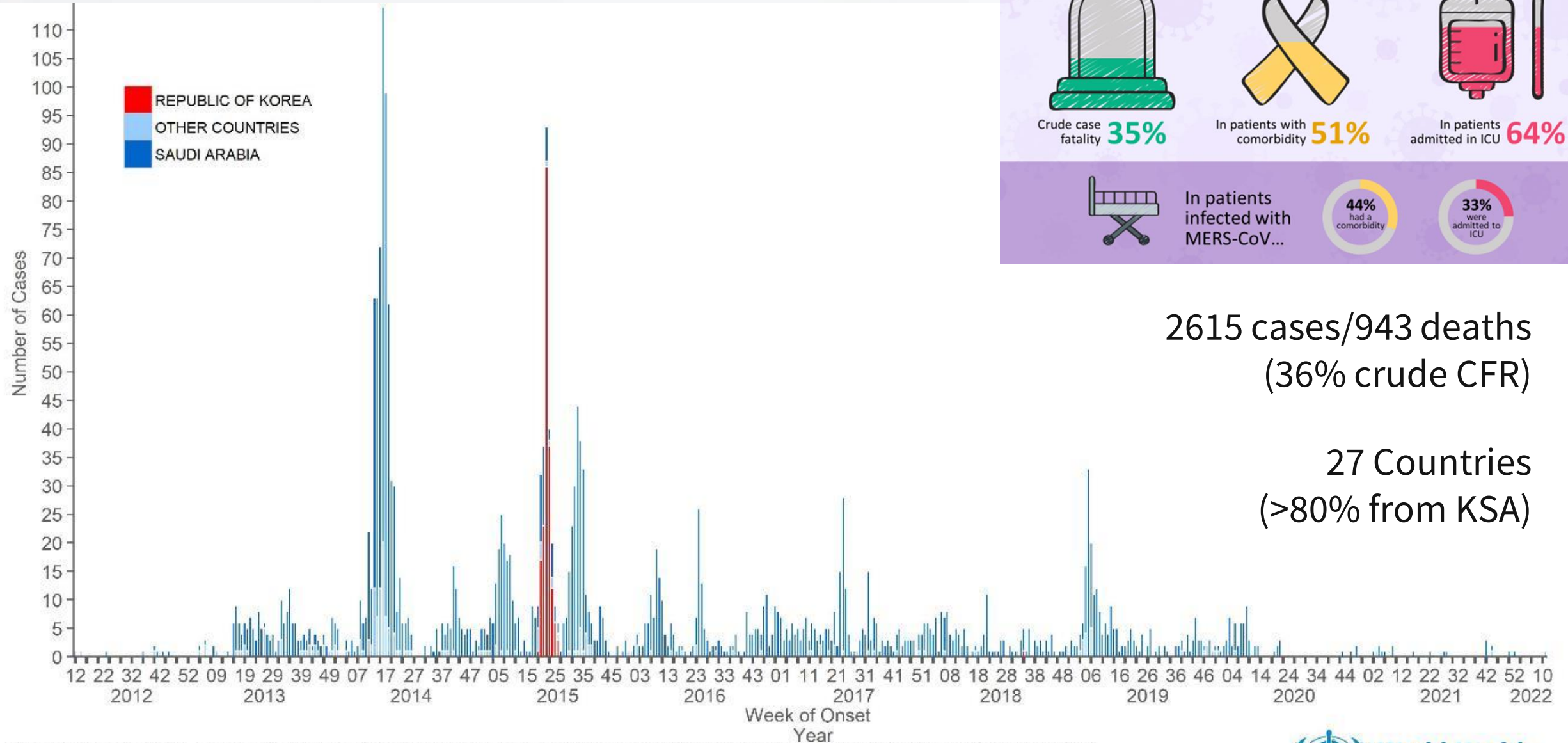
- No/mild disease signs in camels
- Sporadic spillover to humans, potentially undetected
- Human-to-human transmission in healthcare settings or communities



Courtesy of Prof Malik Peiris, HKU

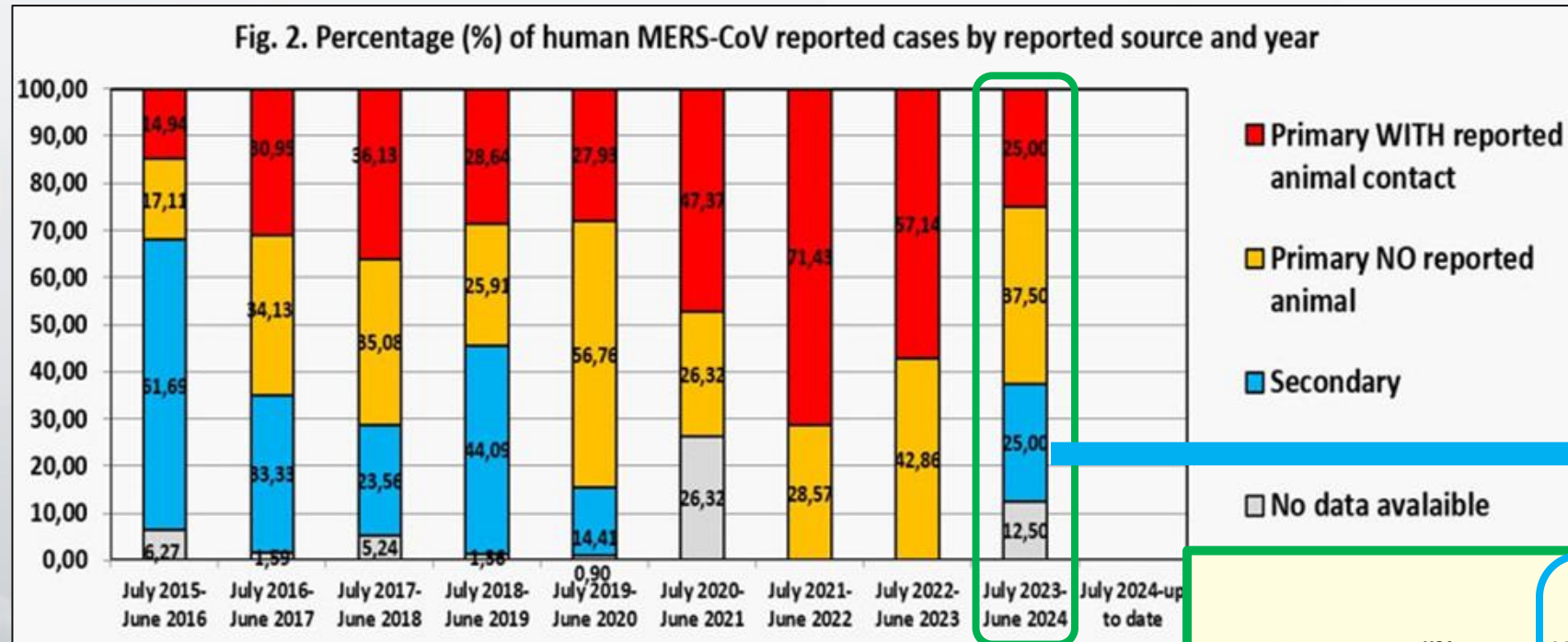
Modified from Ferguson & Van Kerkhove, 2014

WHO MERS-CoV global epidemic curve



Other countries: AUSTRIA, Algeria, BAHRAIN, CHINA, EGYPT, FRANCE, GERMANY, GREECE, IRAN, ITALY, JORDAN, KUWAIT, LEBANON, MALAYSIA, NETHERLANDS, OMAN, PHILIPPINES, QATAR, THAILAND, TUNISIA, TURKEY, UNITED ARAB EMIRATES, UNITED KINGDOM, USA, YEMEN
Please note that the underlying data is subject to change as the investigations around cases are ongoing. Onset date estimated if not available.

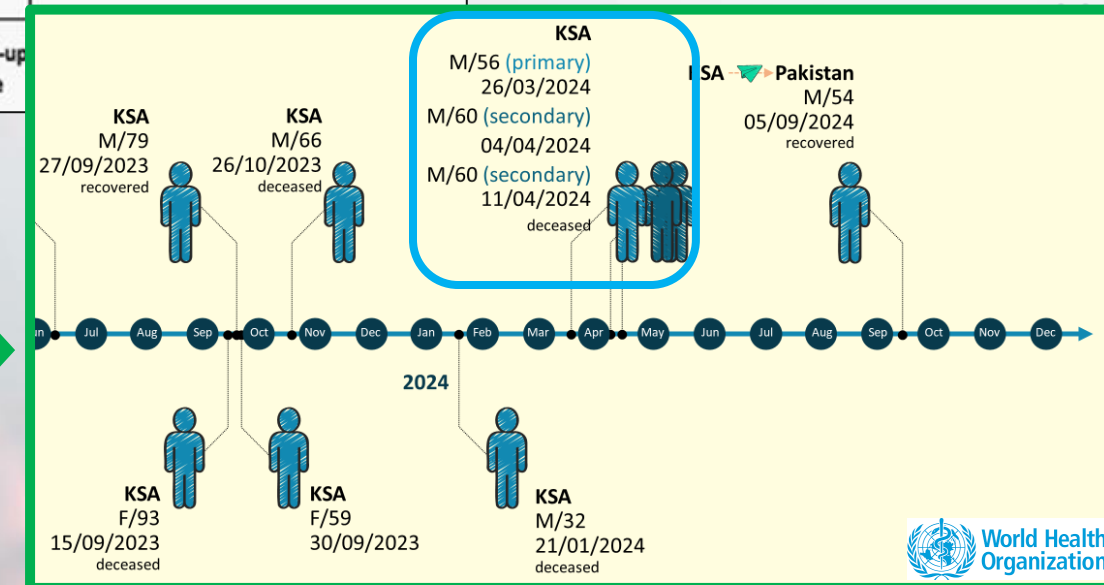
MERS cases by exposure source (in percentage)



Source: FAO

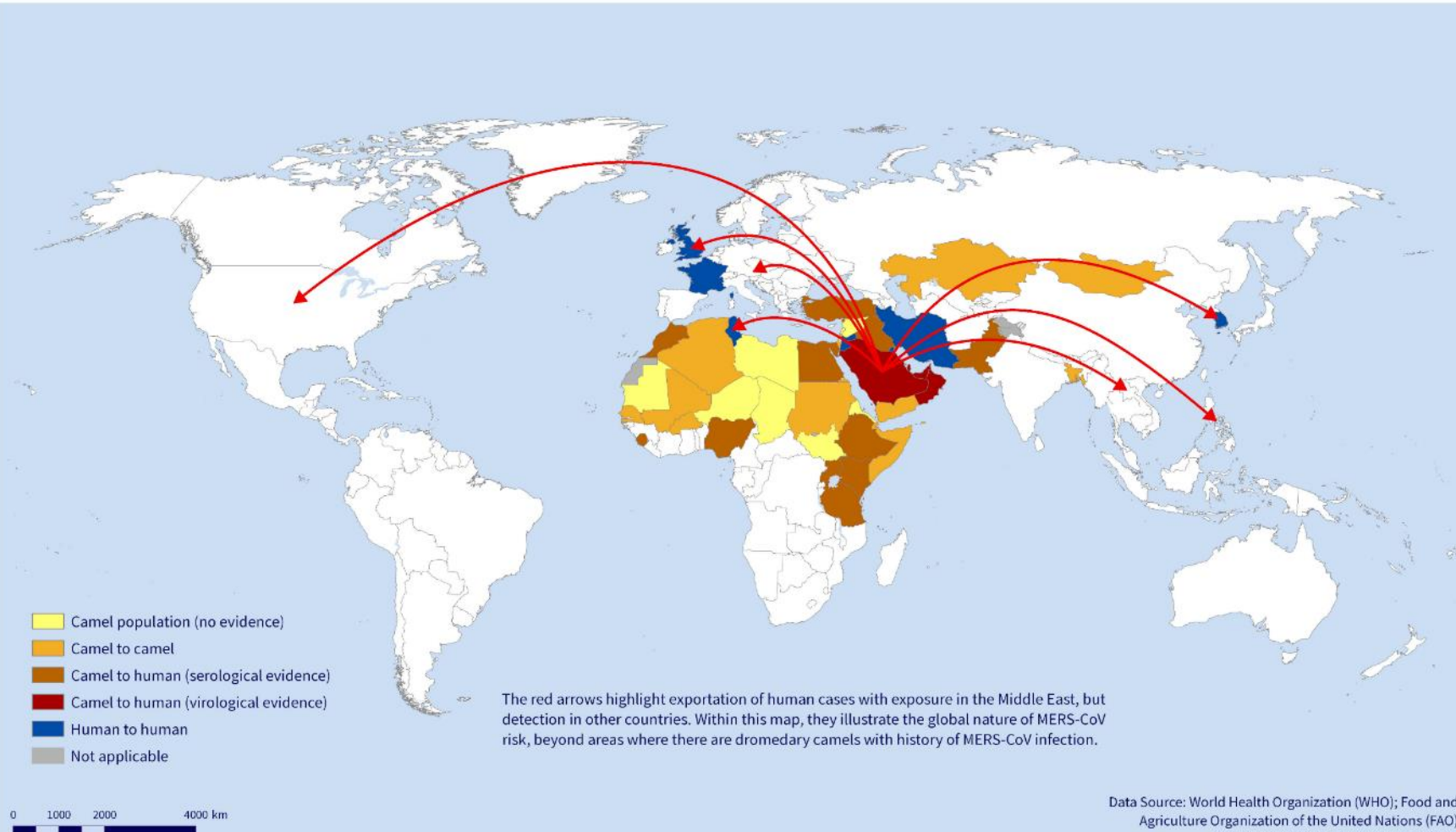
Recent trend towards predominantly sporadic primary cases;
with or without reported camel exposure

> Important to capture virus circulation in camels



MERS-CoV – a global threat I.

Zoonotic and human-to-human transmission of Middle East respiratory syndrome coronavirus (MERS-CoV)



The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization (WHO); Food and Agriculture Organization of the United Nations (FAO)
Map Creation Date: 27 September 2023
Map Production: WHO GIS Centre for Health, DNA/DDI
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Geographic distribution of MERS-CoV is much wider than evidenced by reported human cases



no MERS-CoV evidence to date



evidence of circulation in camels



serological evidence of spillover



endemic with sporadic case reports

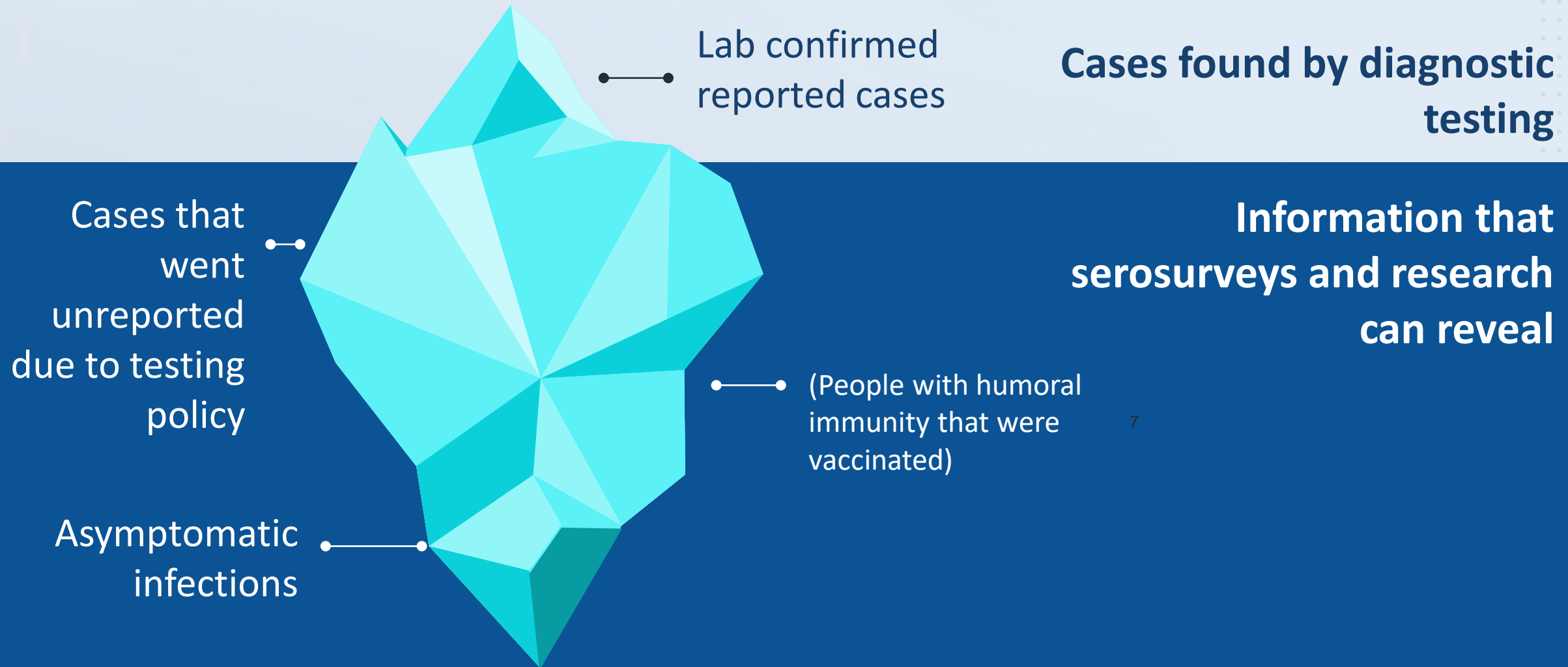


traveler case with onwards H2H transmission



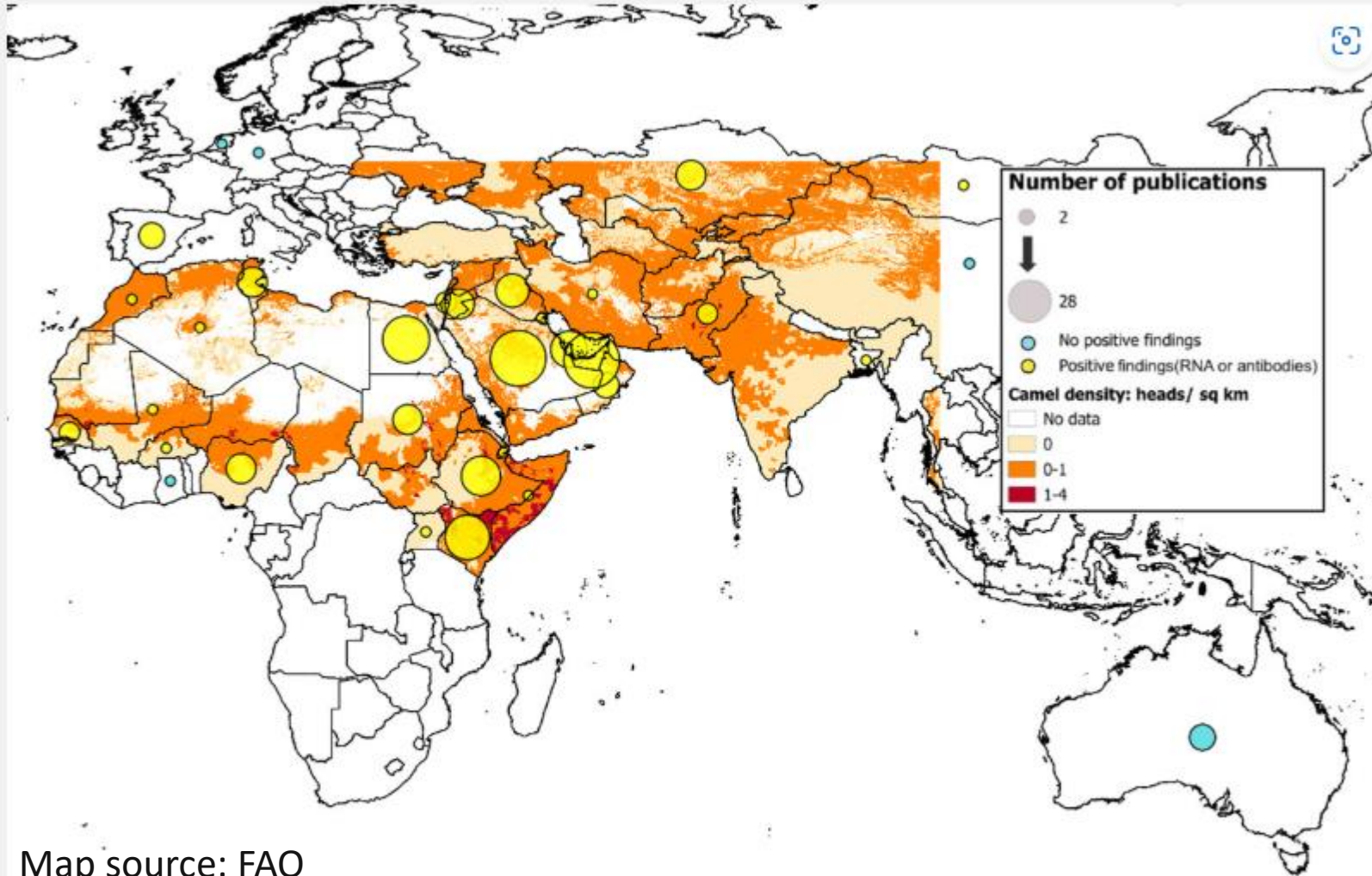
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Serosurveys estimate the population prevalence of antibodies, revealing information on infection and humoral immunity



MERS-CoV – a global threat II.

Map 1. MERS-CoV livestock field surveys by country*



Map source: FAO

*Note: Positive findings in Spain refer to samples taken in the Canary Islands. Livestock surveillance in Chile, not pictured, resulted negative.

➔ **SOLUTION: MERS-tracker !!**

- **Comprehensive:** animal and human studies
- **Interactive:**
 - Studies directly accessible at one click
 - Visualization of geographic representation and results
 - Maps and graphs downloadable
 - List of studies downloadable with metadata
- **Up-to-date:** through automated literature search



Thank you for your attention

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