

# Trend Recognition for Unusual Pathogens in Clinical Specimens

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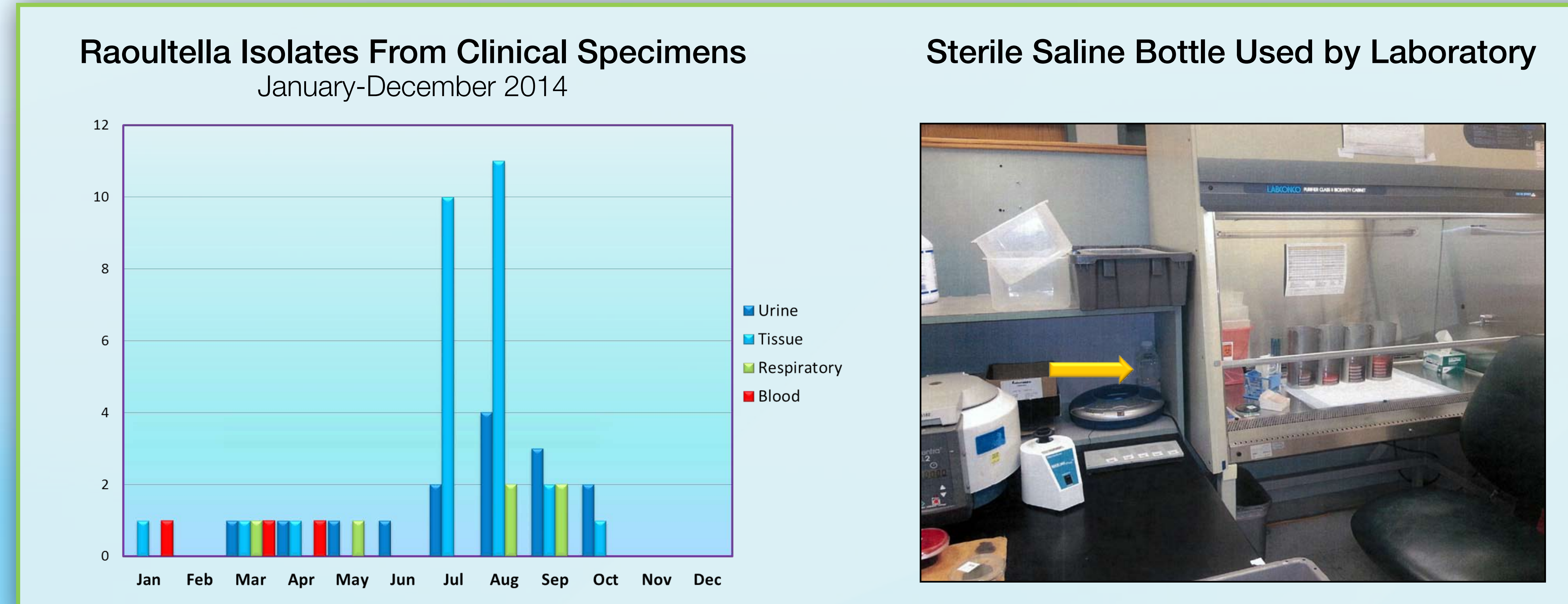
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# Trend Recognition for Unusual Pathogens in Clinical Specimens

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## Background:

- *Raoultella* is primarily an environmental bacterium and is rarely identified as a soft tissue pathogen in humans.
- Further investigation is warranted when an increase in isolates is identified in multiple tissue specimens over a short period of time.
- An increase in the number of tissue specimens identified with *Raoultella* species was observed during the months of July and August 2014.



Sterile Saline Bottle Used by Laboratory



## Results:

- The look-back of tissue specimens identified with *Raoultella* confirmed a dramatic increase in July and August.
- The line list also revealed the majority of specimens, collected in various network locations, were submitted to the laboratory during afternoon and evening hours.
- Tissue specimens submitted in the morning hours were negative.
- Direct observation of microbiology plating techniques detected first shift technicians used “single use” sterile thioglycolate broth to moisten tissue samples prior to morcellation.
- A one liter bottle of sterile saline dated 5/17/14 was used by the second shift technician for the same purpose. This practice was not consistent with protocol.
- *Raoultella* was isolated from the open saline bottle.
- Original tissue samples were re-cultured using sterile thioglycolate broth and were negative.



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## Methods:

- A look-back of *Raoultella* isolated from all clinical specimens from January through August 2014 was completed.
- Patient demographic information was organized on a detailed line list including collection date, location, collection time, specimen source, physician and date of result.
- Operating room procedures for collecting tissue specimens were directly observed.
- The microbiology department performed direct observations for processing tissue specimens from receipt to isolate identification.
- A case control study was developed to compare patients with negative tissue results.

Raoultella Specimens				
LOCATION	COLLECT MONTH	TIME	SPECIMEN SOURCE	RESULT
Ward	January	02:12	Blood	RAOULTELLA SPP.
Outpatient	January	08:43	Urine	RAOULTELLA (KLEBSIELLA) ORNITHINOLYTICA
Outpatient	March	12:16	Urine	RAOULTELLA SPP.
ICU	March	08:52	Respiratory	RAOULTELLA SPP.
Ward	April	08:52	Tissue	RAOULTELLA SPP.
Ward	June	17:37	Urine	RAOULTELLA SPP.
MOR2	July	18:50	Abscess Fluid	RAOULTELLA SPP.
CCOR5	July	11:57	Wound	RAOULTELLA PLANTICOLA
CCOR3	July	13:27	Wound	RAOULTELLA SPP.
CCOR9	July	14:01	Tissue	RAOULTELLA SPP.
MOR3	August	14:17	Tissue	RAOULTELLA SPP.
MOR5	August	08:17	Tissue	RAOULTELLA SPP.
CCOR1	August	15:57	Tissue	RAOULTELLA PLANTICOLA
CCOR4	August	15:57	Tissue	RAOULTELLA PLANTICOLA

## Conclusions:

The investigation identified a pseudo-outbreak of *Raoultella* from a contaminated bottle of saline used in the laboratory on second shift to moisten tissue samples prior to plate inoculation. Trend recognition is vital to identify pseudo-outbreaks that can result in the unnecessary administration of antibiotics.

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