



Food and Agriculture
Organization of the
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TRICYCLE PROJECT IN THE PHILIPPINES

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Regional Workshop on Interpretation of AMU/AMR data to improve
evidence-based decision-making in Asia and the Pacific

Bangkok, 18-19 November 2025



Department of Health

Research Institute for Tropical Medicine

Antimicrobial Resistance Surveillance Reference Laboratory

Work Package 1

Research Institute for Tropical Medicine

Collection Sites:

- Department of Health - Rizal Medical Center
- Department of Health – National Kidney and Transplant Institute



Work Package 2

Department of Agriculture- National Meat
Inspection Service



Work Package 3

Department of Environment and Natural Resources-
Environmental Management Bureau



WORK PACKAGE 1: Surveillance in Humans

August 2023- December 2025 Data Collection

HOSPITALIZED PATIENTS BLOOD SAMPLES

| SAMPLE | | 2023 (Sep to Dec) | 2024 (Jan to Dec) | 2025 (Jan to present) | TOTAL |
|--------|---------------------------------------|----------------------|----------------------|--------------------------|-------|
| BLOOD | No. of ECO isolates referred to ARSRL | 6 | 36 | 55 | 97 |
| | No. of Confirmed ECO | 6 | 35 | 53 | 94 |
| | No. of ESBL (+) ECO | 3 | 7 | 27 | 37 |
| | No. of ESBL (-) ECO | 3 | 28 | 26 | 57 |

HEALTHY HUMANS (PREGNANT WOMEN) RECTAL SWAB SAMPLES

| SAMPLE | | 2023 (Sep to Dec) | 2024 (Jan to Dec) | 2025 (Jan to present) | TOTAL |
|----------------|---------------------------------------|----------------------|----------------------|--------------------------|-------|
| RECTAL SWAB | No. of Samples Collected | 36 | 108 | 81 | 225 |
| | No. of ECO isolates referred to ARSRL | 2 | 7 | 15 | 24 |
| | No. of confirmed ECO | 2 | 7 | 15 | 24 |
| | No. of ESBL (+) ECO | 2 | 7 | 14 | 23 |



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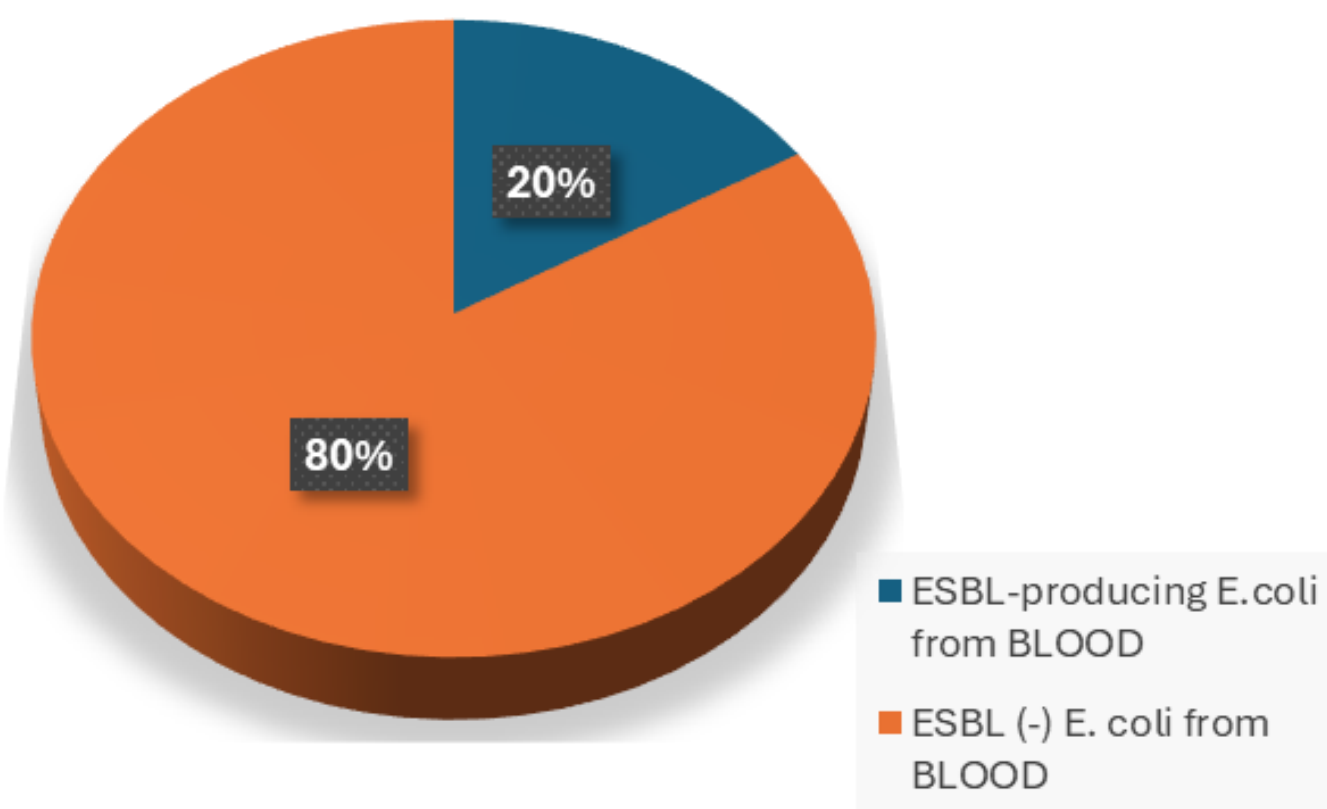


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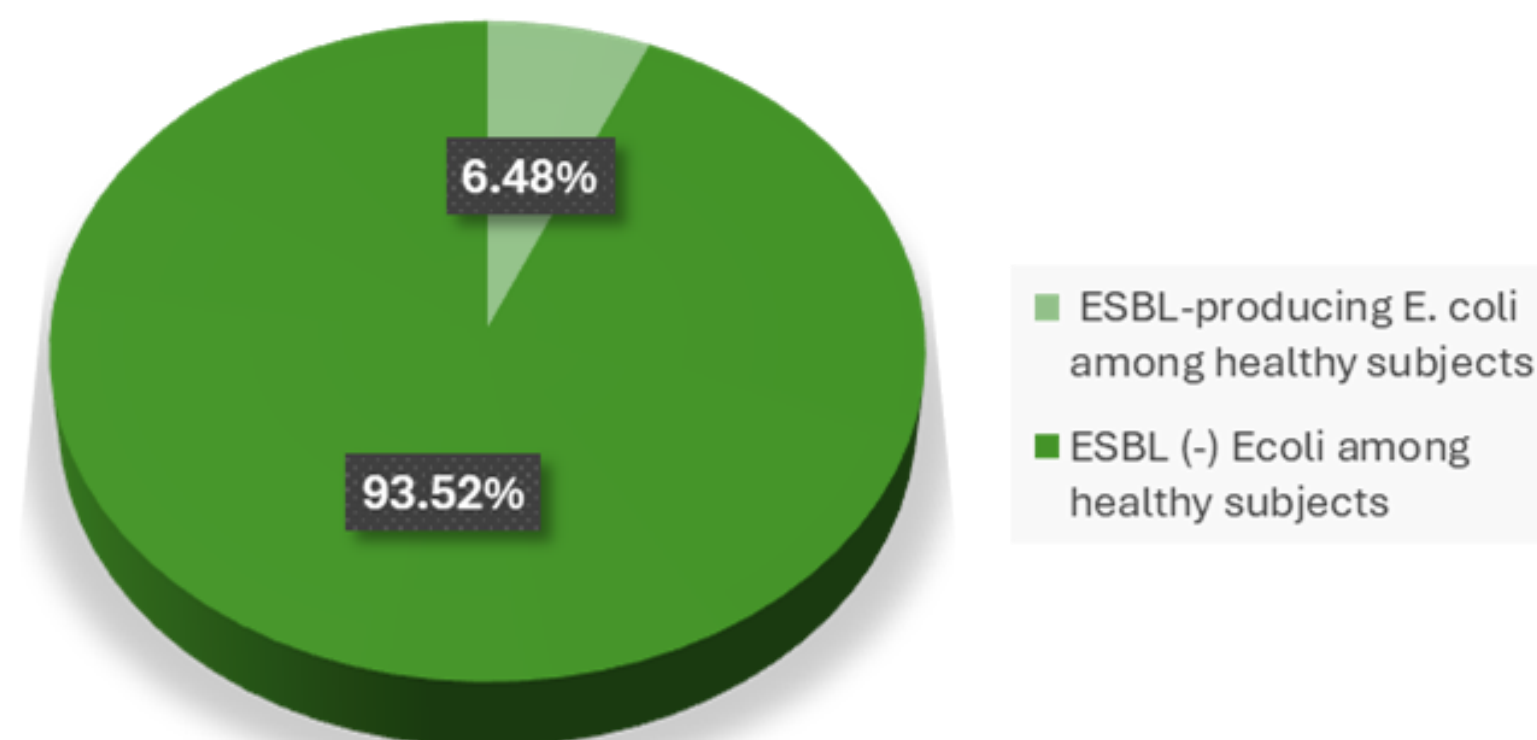
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WORK PACKAGE 1: Surveillance in Humans 2024 DATA

Prevalence of ESBL-Ec phenotype among
E. coli bloodstream infections



Prevalence of ESBL-Ec phenotype
among healthy humans



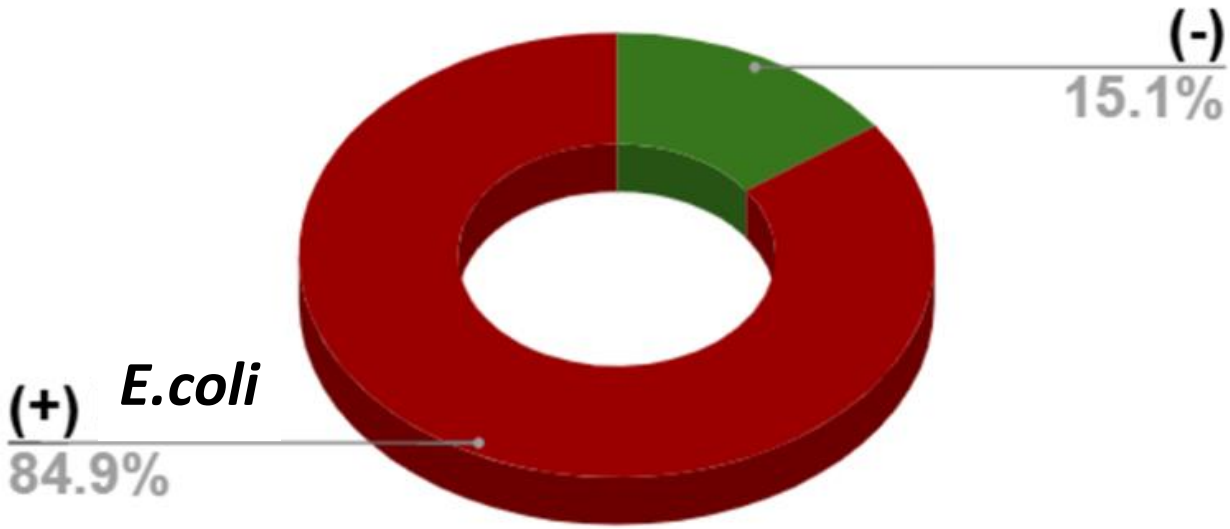


Work Package 2: Surveillance of ESBL *E. coli* in Food Animals

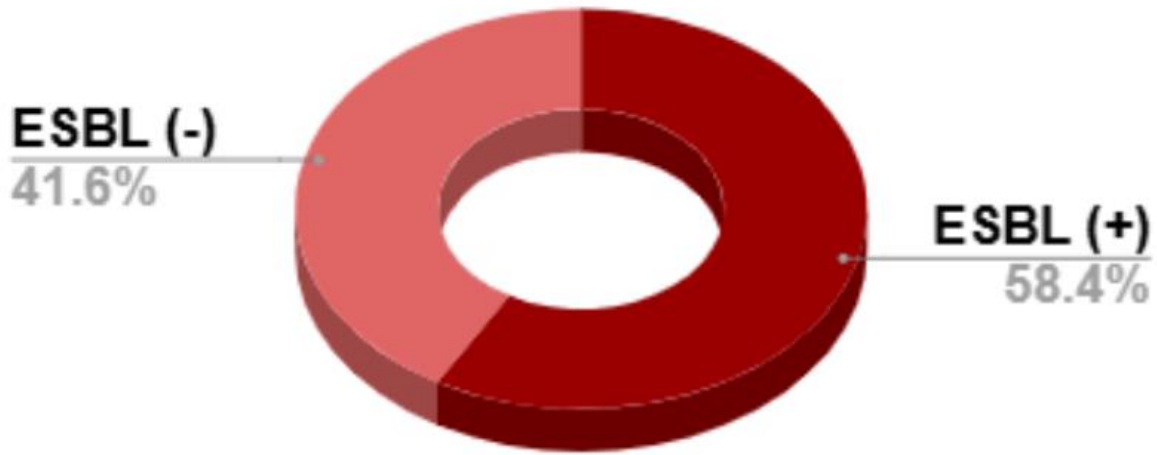
| <i>E. coli</i> & ESBL (+) Recovery Rate | | |
|--|-----|--------|
| Total Cecum Samples | 430 | |
| No. of Samples Positive for <i>E. coli</i> | 365 | 84.90% |
| ESBL (+) | 213 | 58.36% |
| ESBL (-) | 152 | 41.64% |

Referred to
ARSRL for
confirmation

E.coli Recovery Rate



Prevalence of ESBL *E.coli* among Food Animals





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WORK PACKAGE 3: Surveillance of ESBL *E. coli* in the Environment



**MARCH 17-21, 2025
RITM-ARSRL CONDUCTS
REFRESHER TRAINING
SESSION WITH DENR-EMB**



**MOA between RITM-ARSP and DENR-EMB
has been finalized and will commence sample collection**

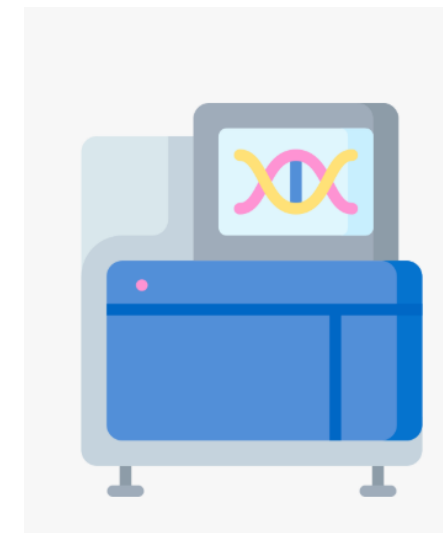
WORK PACKAGE 4: Molecular Characterization

Protocol Title: Molecular characterization and Genomic Surveillance of ESBL-producing *E.coli*

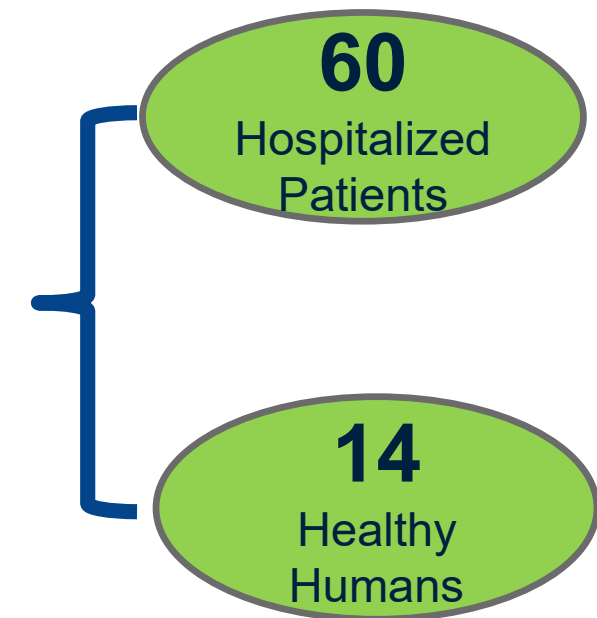
General Objective:

To utilize whole genome sequencing (WGS) to comprehensively characterize ESBL-Ec collected from humans, the food chain, and the environment, providing a detailed **understanding of their genomic profiles, antimicrobial resistance mechanisms, and transmission dynamics across different sectors**

- Received RITM ethical approval last February 24, 2025
- Ongoing sequencing of WP1 *E.coli* isolates, but will eventually include isolates from WP2 and WP3



74 *E. coli*
sequenced



| | Hospitalized patients | Healthy Humans | TOTAL |
|----------------------|-----------------------|----------------|-------|
| No. of confirmed ECO | 60 | 14 | 74 |
| No. of ESBL (+) ECO | 23 | 14 | 37 |
| No. of ESBL (-) ECO | 37 | 0 | 37 |

CHALLENGES AND LIMITATIONS

- Limited resources for sustainability (*e.g. manpower, infrastructure, logistics*)
 - Slow procurement process
 - Lengthy process of approval of MOA/MOU between agencies
 - Number of *E. coli* positive blood cultures was low
- Challenges in coordinating sampling schedules with the slaughterhouse due to their operational schedule constraints.
 - Limited manpower and logistics: (*e.g. overlapping responsibilities, unavailability of transport vehicles*)
 - Data management: transition from manual Excel-based data entry, to using WHONET database
 - Sustainability and continuity of sampling as the selected meat establishment is currently unable to accommodate further sampling activities due to operational considerations.

THE WAYS FORWARD

- Sustain Tricycle Project implementation across the 3 sectors
- Strengthen data sharing across the 3 sectors
- Expand the Tricycle Project implementation
- Foster participation and collaboration on Work Package 4 (Molecular Characterization) across Work Packages 1, 2, and 3.

Thank you for your kind attention

