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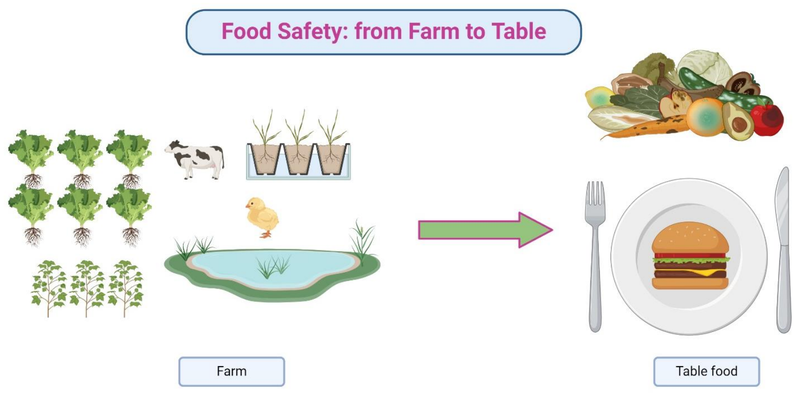
Epidemiological aspects of antimicrobial-resistant *Salmonella* spp. isolated from food in Phnom Penh, Cambodia



BCAKGROUND

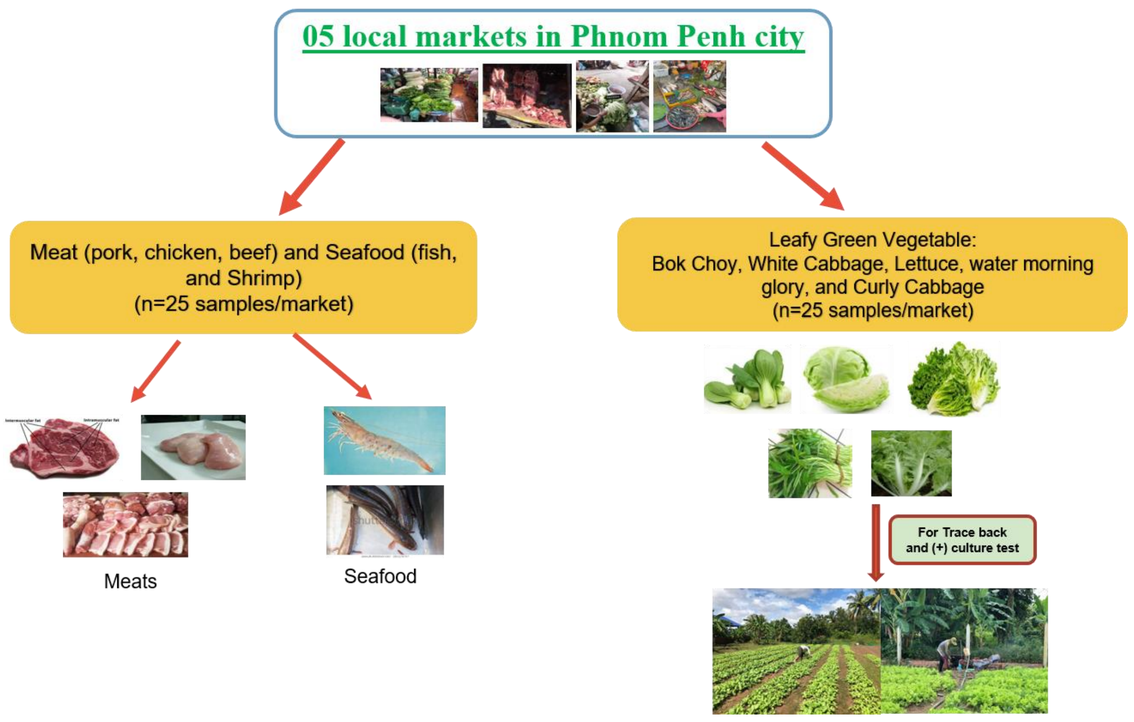
Antibiotic-resistant *Salmonella* spp. in fresh food products poses serious challenges to food safety and public health in Cambodia. There are few published reports on the prevalence of *Salmonella* spp. and associated antibiotic resistance in the Cambodian food chain.

OBJECTIVE

This study aims to determine the incidence and antimicrobial resistance (AMR) of *Salmonella* spp. among food sampled at local markets and farms in Phnom Penh, Cambodia.

METHOD

- **Samples:** meat, seafood, and Leafy green vegetables collected from local markets and farms close to Phnom Penh, Cambodia.
- **Prevalence Study:** Culture- and PCR-Based methods
- **AMR test**: Antibiotic Susceptibility Test (AST) with 12 antibiotics (Figure 1)



RESULTS

- The *Salmonella* spp. prevalence: **49%** (139/285), with **71%** (99/139) AMR.

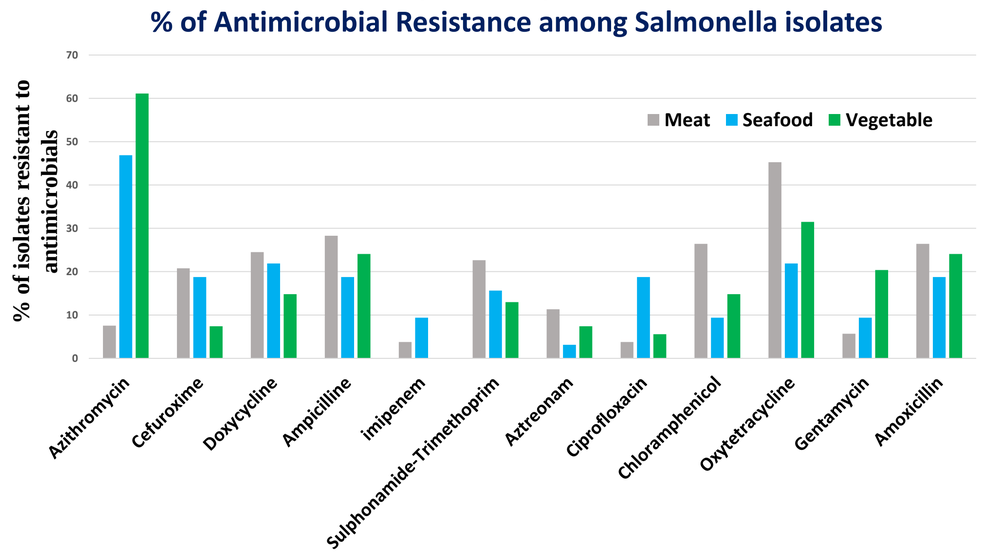


Figure 1: Percentage (%) of antimicrobial resistance among *Salmonella* isolates for the 12 antibiotics used in this study

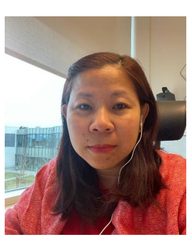
- Multi-drug resistant (MDR) found in most of the isolates from meat, seafood, and vegetable.
- **01** isolated from vegetable resistance to 11 antibiotics (Azm-Cxm-Do-Amp-Sxt-Atm-Cip-C-Ot-Gn-Aml)

Table1: Antimicrobial Resistance Phenotype of 139 *Salmonella* spp. isolates from meat, seafood, and leafy green vegetable.

No. of Antibiotics	No. of isolate with Resistant Phenotypes		
	meat	seafood	Vegetable
one	10	9	18
Two	7	4	7
Three	5		4
Four	3	3	5
Five	6		
Six	4	1	2
Seven	1	1	2
Eight	1	1	
Nine	2		1
Ten			1
Eleven			1

CONCLUSION

- **Meat, seafood, and vegetables often are contaminated with *Salmonella* spp., and there are potential human health risks related to antibiotic-resistant *Salmonella* spp. in the food chain.**
- **This risk can likely be associated with unrestricted use of antibiotics in the livestock sector and poor hygiene and sanitation practices from production to consumption.**
- **This study points out the need for a control strategy to reduce levels of AMR *Salmonella* spp. in the food value chain.**



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