



# Slaughterhouse Zoonoses

## Are workers reservoirs of zoonotic disease?

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### Background

- Globally slaughterhouse workers are high risk due to contact with animals
- Slaughterhouse workers may act as reservoirs of zoonotic organisms
- No previous studies in Kenya investigating zoonoses in slaughterhouse workers

#### Objective

Determine the carriage of pathogenic bacteria by slaughterhouse workers



#### Outcomes

- Prevalence of enteric pathogens and MRSA
- Risk factors associated with carriage

### Materials and methods

#### Study site

45km radius from Busia, Kenya

#### Study population

175 slaughterhouses  
650 slaughterhouse workers

#### Sampling procedure

##### Questionnaire

- Risk factors
- Knowledge of zoonoses

##### Biological samples

Blood, faeces, nasal swab



#### Sample analysis

##### Parasitology

- malaria
  - intestinal parasites
- ##### Microbiology
- *Salmonella* sp.
  - *Campylobacter* sp.
  - *Shigella* sp.
  - *S. aureus*

#### Data analysis

Logistic regression - odds ratios for risk factors to zoonotic pathogens

### Results—to date

Knowledge and practices	Percent n=402
Knowledge of zoonoses	32.1
Know meat carries disease	46.0
Wear protective clothing	48.3
Report injuries monthly	26.0
Eat at the slaughterhouse	15.7
Slaughter sick animals	19.4

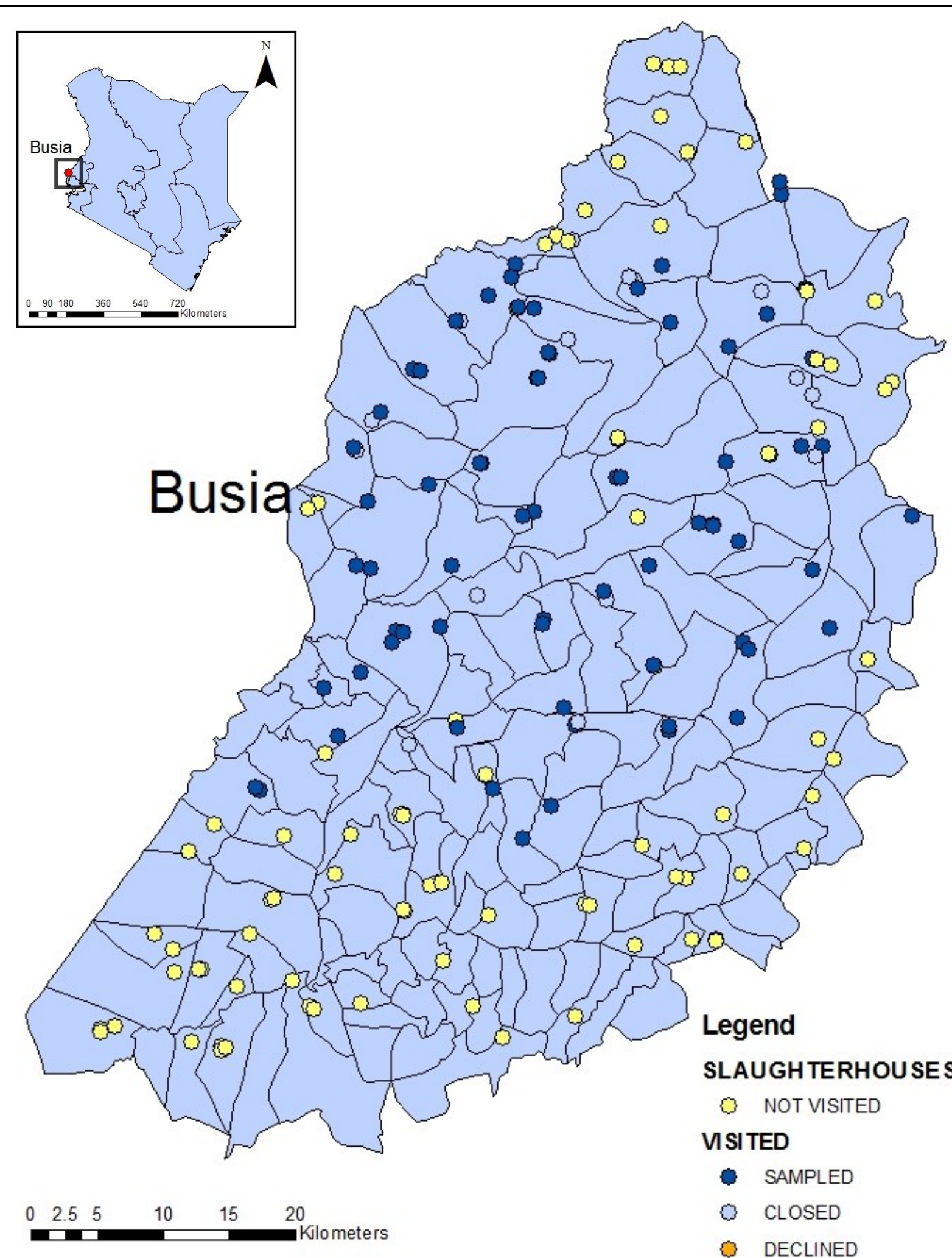


Figure 1 Map of slaughterhouses in study area in western Kenya

Organism	Prevalence n=394	95% CI
<i>Salmonella</i> sp.	7.8%	5.2-10.5
<i>Shigella</i> sp.	23.6%	19.4-27.8
<i>Campylobacter</i> sp	29.6%	25.1-34.1
MRSA (n=402)	3.7%	1.9-5.6

Table 1 Prevalence of enteric pathogens and MRSA in slaughterhouse workers

#### Key findings

**Cleaners are more likely to have MRSA carriage than other slaughterhouse workers**

OR = 4.34 95% CI = 1.1, 14.71  
Chi-squared = 7.68, 1 d.f., P = 0.006

**Workers with campylobacter reported diarrhoea episode in previous 3 months**

OR = 1.73 95% CI = 1.01, 2.94  
Chi-squared = 4.64, 1 d.f., P = 0.031

**Workers with salmonella did not report diarrhoea suggesting asymptomatic carriage**

OR = 1.53 CI = 0.59, 3.63  
Chi-squared = 1.06, 1 d.f., P = 0.304

### Conclusions and Future plans

- Hygiene in slaughterhouses in western Kenya is poor
- Asymptomatic carriage of pathogenic bacteria has been established
- NEXT STEP: Genotyping isolates for relatedness and antibiotic resistance



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