



UNIVERSITY OF MEDICINE AND PHARMACY – HO CHI MINH CITY

One Health approach in management of *Streptococcus suis* Infection

EPIDEMIOLOGICAL FACTORS AND CLINICAL MANIFESTATION IN PATIENTS WITH *S. SUI* MENINGITIS

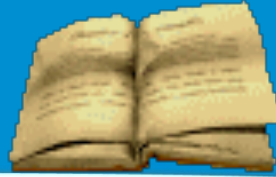
TREATED IN THE HOSPITAL FOR TROPICAL DISEASES AT HCM-CITY



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Outline



- 1- Introduction:
- 2- Objective and Method
- 3- Results
- 4- Discussion
- 5- Conclusion





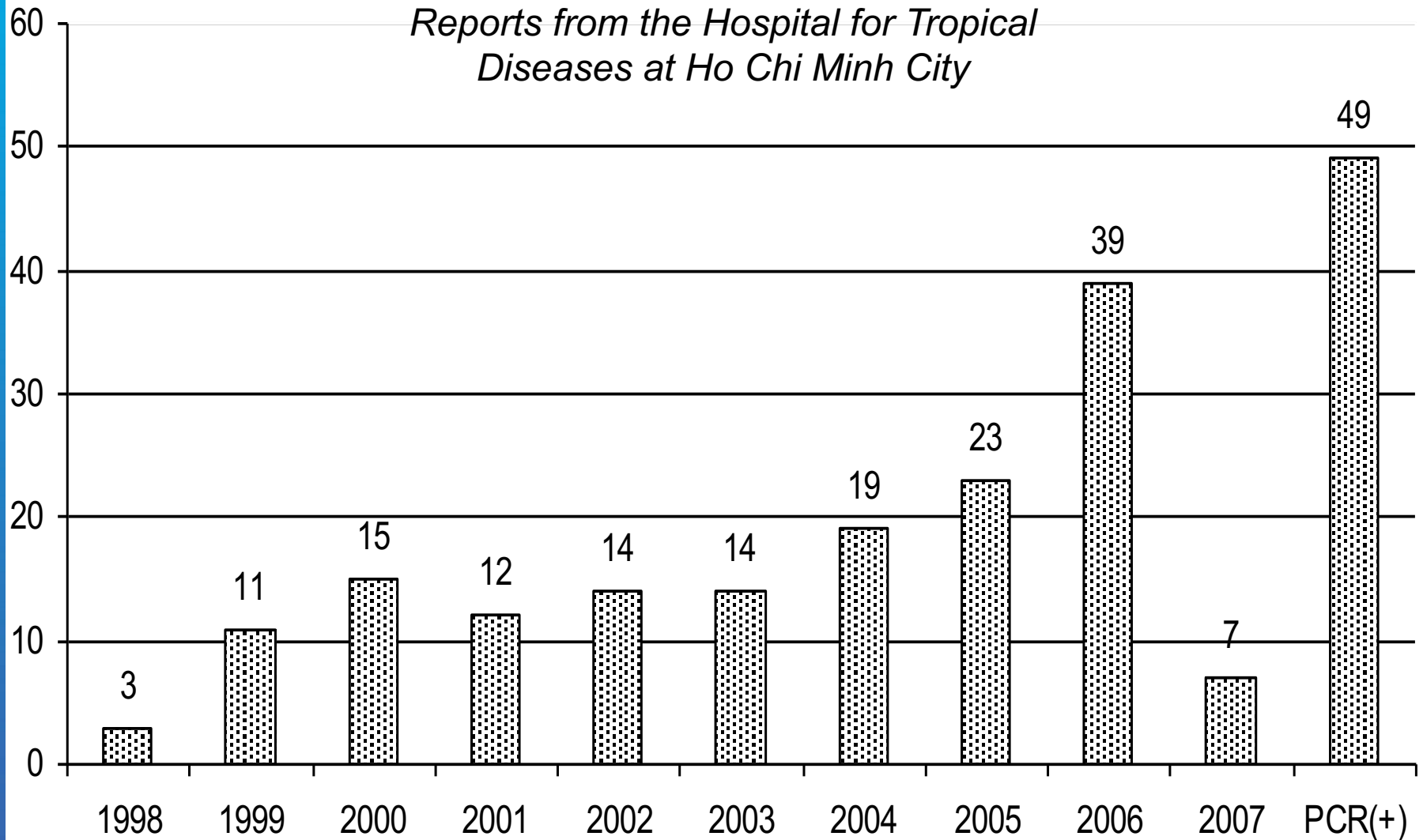
1- Introduction:

- + Human *Streptococcus suis* infection is an emerging zoonotic disease in Southeast Asia
- + Outbreaks with high morbidity and mortality and endemic disease
- + Major negative impact on the economically important pig industry across the region
- + Reports from HTD: number of annual cases of *S. suis* infection has been increasing from **3 cases in 1998 to up to 39 cases in 2006**



Cases of *S. suis* infection admitted to HTD by years

*Reports from the Hospital for Tropical
Diseases at Ho Chi Minh City*





2- Objective and Method

+ **Research Questions:**

- 1- What are the epidemiological factors related to *S. suis* meningitis?
- 2- What are clinical symptoms of *S. suis* meningitis?

+ **Objective:** To investigate the epidemiological factors and clinical symptoms of patients with *S. suis* meningitis

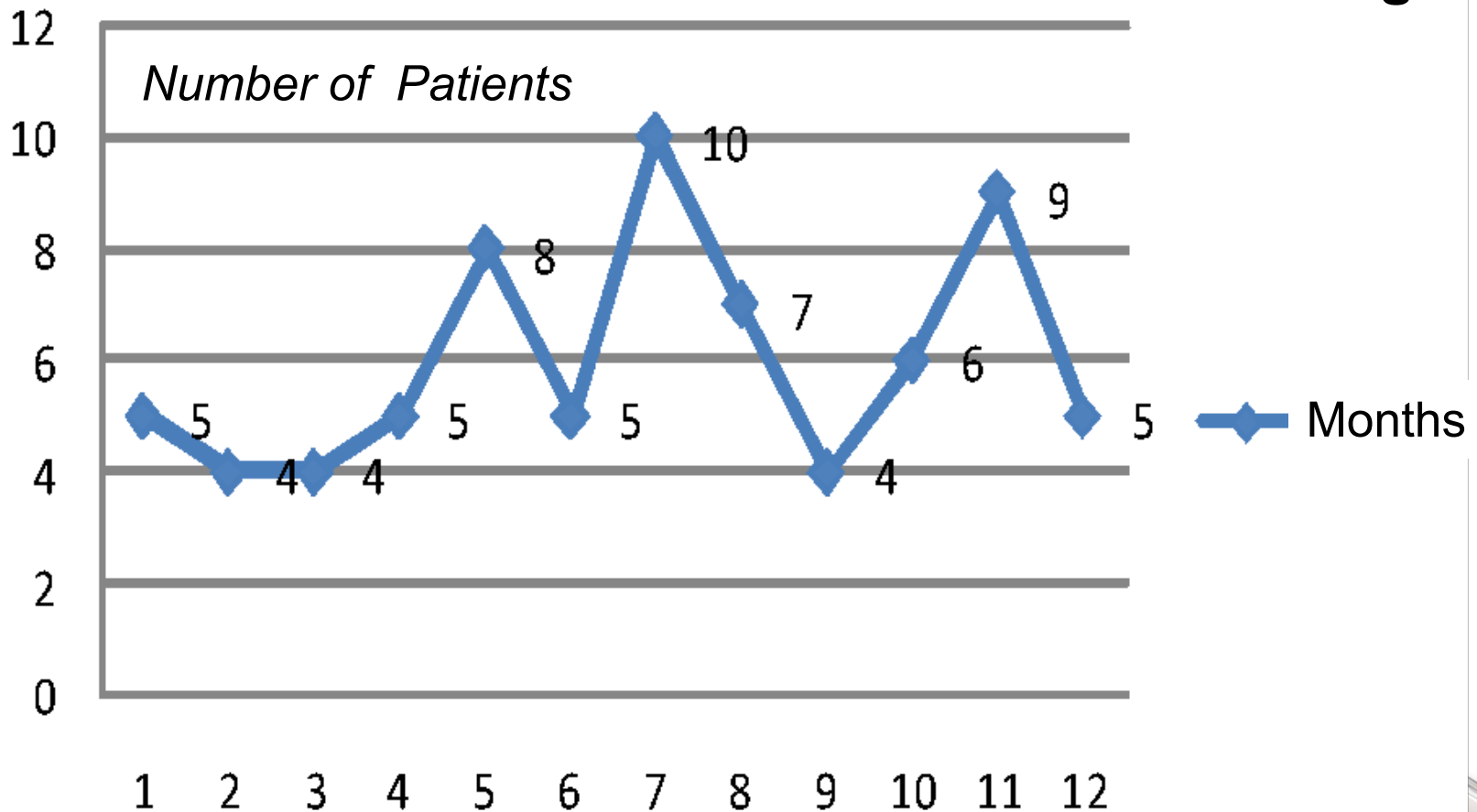
+ **Method:** Cases series study - Patients admitted to HTD at HCM city





3- Results (1)

72 cases of *S. suis* meningitis



Number of *S.suis* meningitis Patients admitted to HTD by months

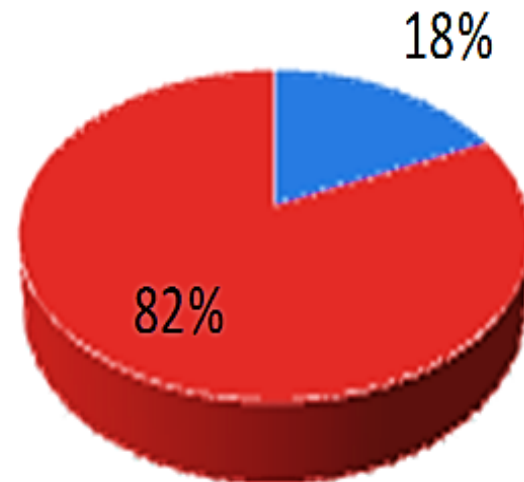


3- Results (2)

- 87.5% male ; 32% - from HCM city
- 18.1% - farmers
- 33.3% - regular contact with pigs and pork
- 18% had a skin injury

■ *skin injury*

■ *Don't have*



Occupation: Butcher

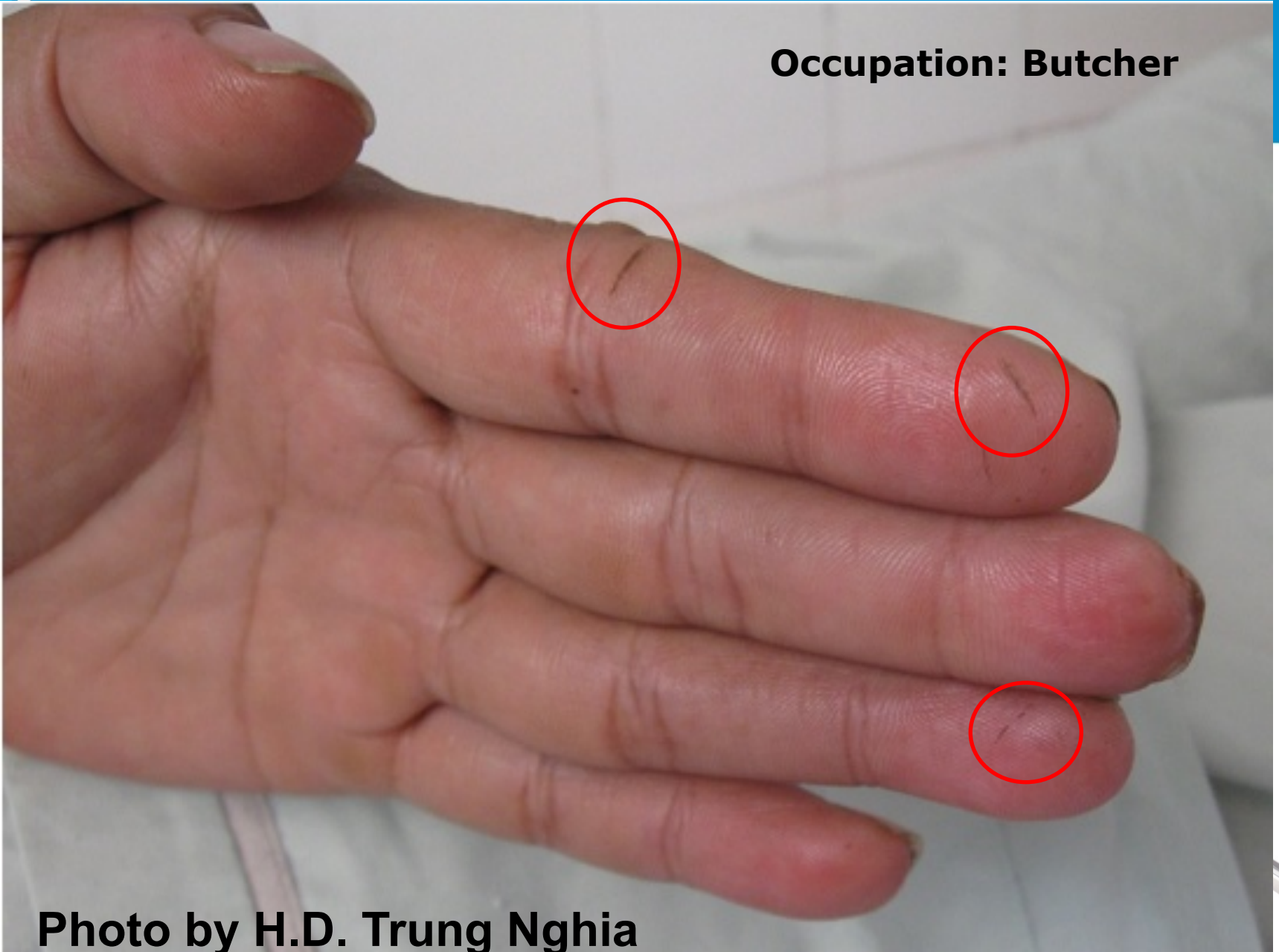
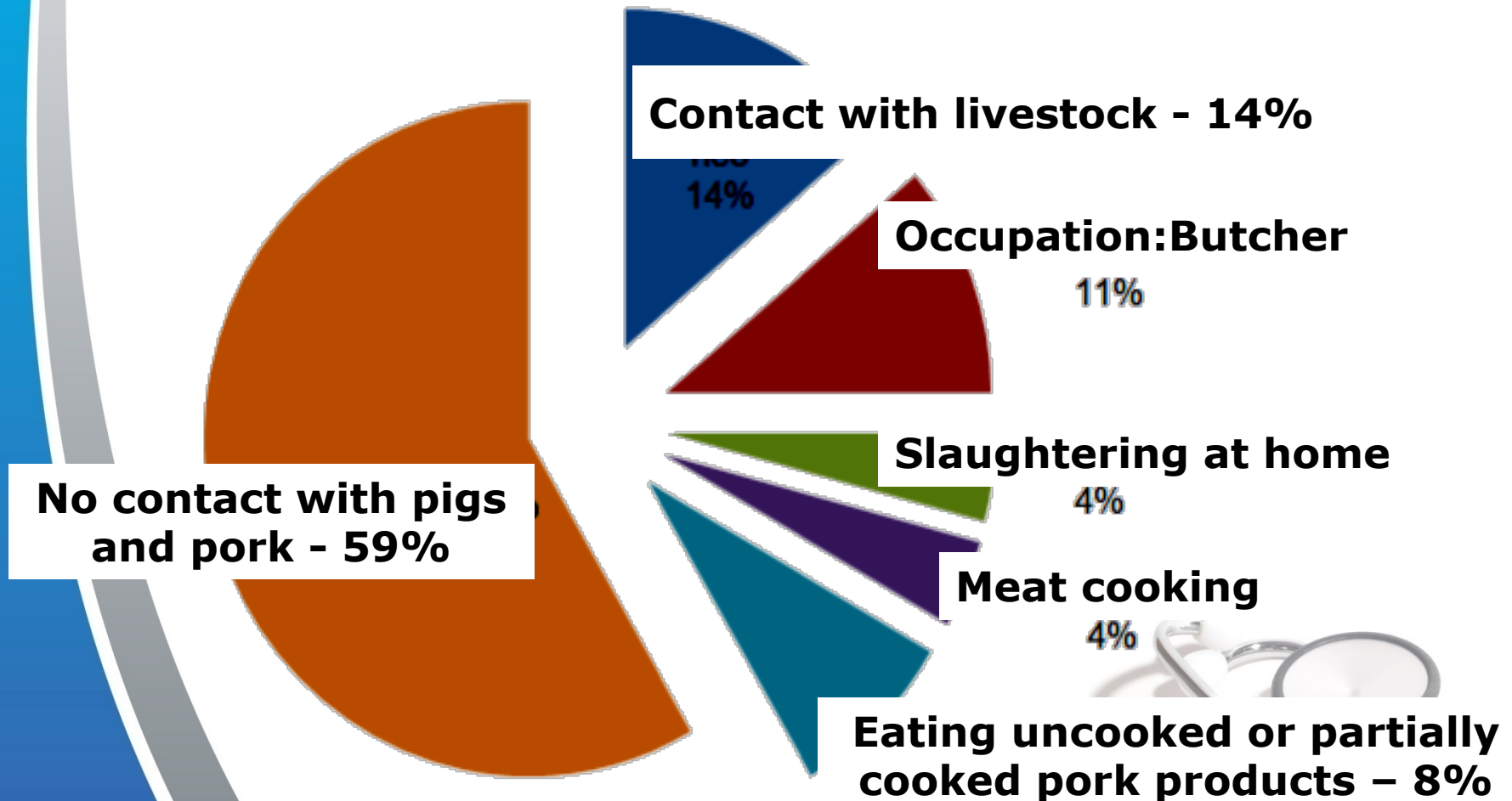


Photo by H.D. Trung Nghia

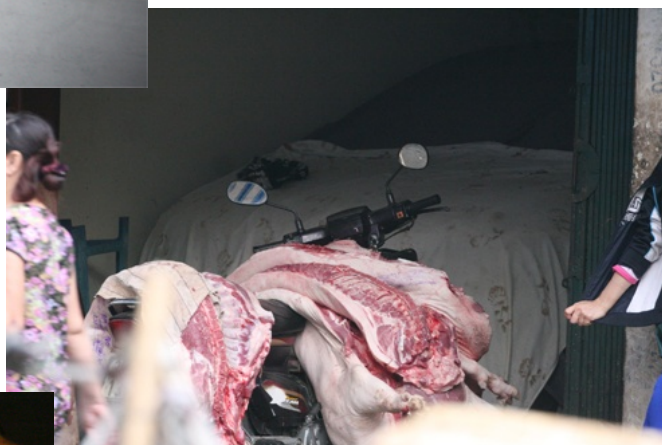


The proportion of *S.suis* meningitis patients having contact with pigs and pork





Contact with livestock



uncooked or partially
cooked pork products





3- Results (3)

Clinical symptoms:

- 98.6% fever- 93.1% headache
- 63.9% - perceptual disorders
- 58.3% - nausea and vomiting
- 27.8% - body aches
- 9.7% - diarrhea
- **38.9% - decrease or loss of hearing**





4- Discussion (1)

+ **Age and sex:** The majority of patients were working-age men: risk of exposure to pathogens including professional exposure, alcoholism (drink alcohol with uncooked blood) and consuming uncooked pork products





4- Discussion (2)

+ **Risk factors:** The proportion of patients exposed to live pigs or pork products before infection was 41.7%, including 17% that were both in contact with pigs and ate uncooked pork (uncooked blood)

⇒ *S. suis* infection can be transmitted by the gastrointestinal tract





4- Discussion (3)

+ **Skin lesion:** 13 cases (18%) had skin injuries.

The skin injuries were usually small and difficult for the doctor to observe upon admission

⇒ noted patient history and performed a physical examination to identify potential skin lesions where infection might have originated





4- Discussion (4)

+ **Seasonality:** *S. suis* meningitis does not have major seasonal variations in the southern provinces.

The number of patients increased slightly during the rainy months of the year

⇒ ***Next research: Related with Climate change?***





4- Discussion (5)

+ **Clinical manifestations:** similar to meningitis caused by other bacteria

Hearing loss (38.9%) occurred more often than with meningitis caused by other agents (7-10%)

→ diagnose a case of *S. suis* meningitis on admission before receiving laboratory results





5- Conclusion (1)

- 1- *S.suis* meningitis occurs **throughout the year**
- 2- **Risk of infection:** occupational exposure to pigs
- 3- **Hearing loss** is considered as a factor which suggests diagnosis of *S. suis* meningitis
- 4- **Health education:** individuals and communities at risk, focusing on skin protection in contact with pigs or pork and avoiding eating uncooked pork products





5- Conclusion (2)

5- Transdisciplinary collaboration between Medical Professionals and Veterinarians to control outbreaks of *S. suis* infection in pigs and humans

6- Case-control studies:
to define risk factors of
human *S. suis* infection

Taking pig swab samples



Thank you

**KHU VỰC CÓ DỊCH HEO (PRRS)
CẤM LƯU THÔNG CÁC LOẠI HEO
VÀ SẢN PHẨM HEO
HẠN CHẾ NGƯỜI QUA LẠI**

AN SINH CẢNH
HỒI CƯỜNG

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