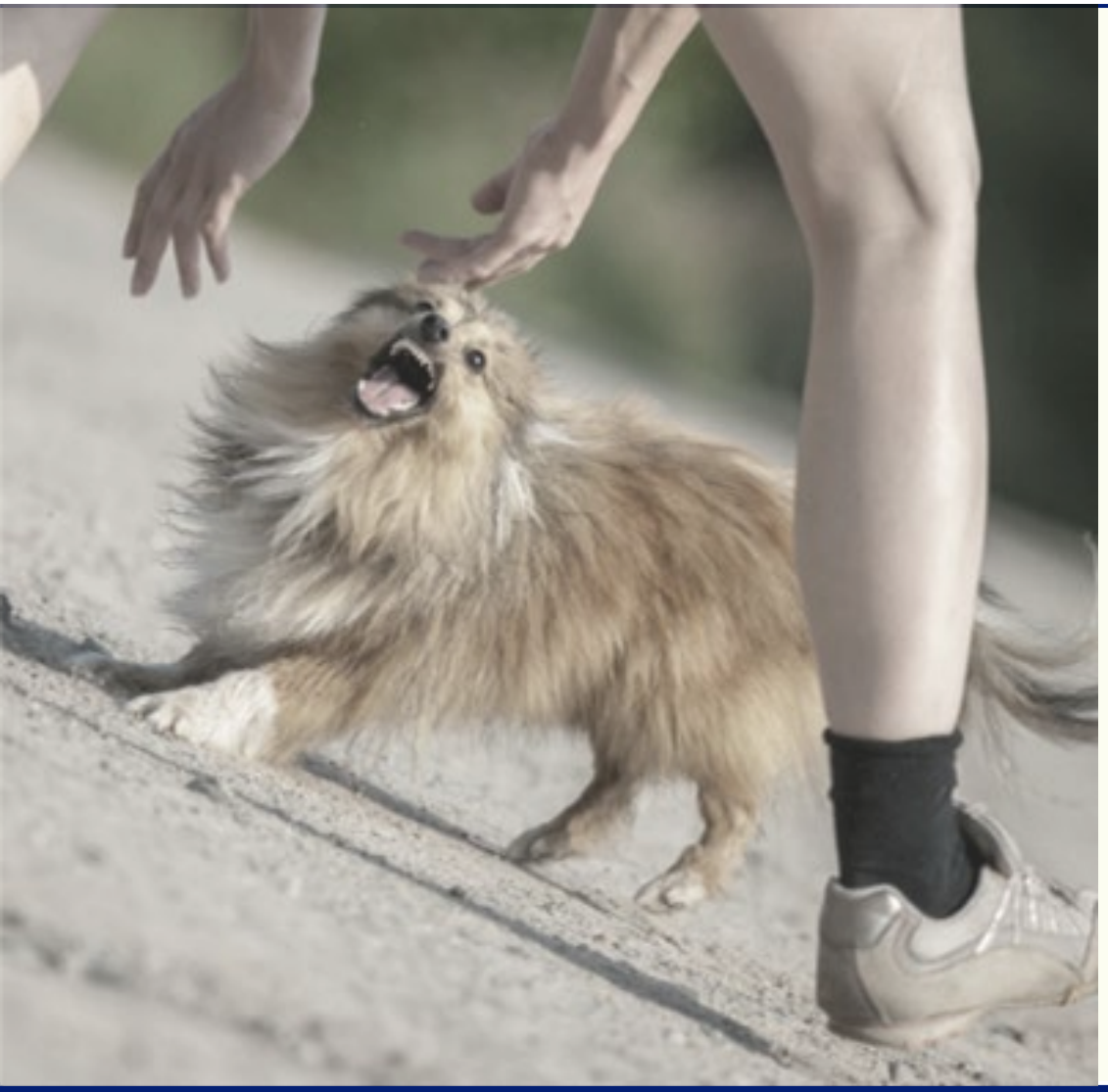

What can routinely collected data tell us?

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Overview

Defining animal-related trauma

What can current datasets tell us?

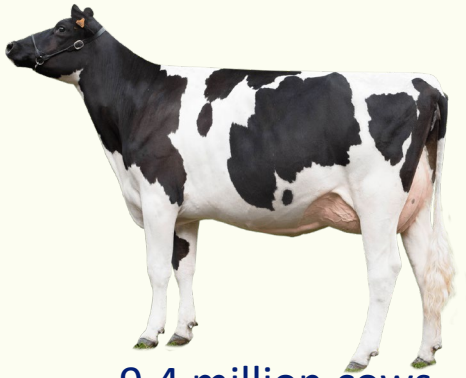
Where can we find contextual data?

How do we define animal-related trauma?

What animals are we interested in?

~ 13 million dogs

~ 1 million horses



9.4 million cows

Why are they important, type of trauma?

- Close human relationships
- High relative incidence
- Rabies

- Professions involving horses have highest workplace injury rate!

- Severity of injuries
- Animal that causes the most deaths in the UK

What ICD-10 codes?

- W54 dog bites and strikes

- Transport accidents
- V80 - animal-rider or occupant of animal-drawn vehicle injured in transport accident

- ????????

How do we define animal-related trauma?

What animals are we interested in?

Issues with identification

- Coding of external causes, many injury types unintentionally excluded

What routinely collected data can we use?

- Need to ‘think outside the box’ to find novel sources of data

How does this help with prevention?

- We are currently missing almost all baseline demographic, epidemiological, and contextual data

What is the case definition of a dog bite?

Does it need to break the skin?

Does it require medical attention?

Does it involve the police?

What is the difference between a bite and an attack?

When ‘counting’ bites, can we tell the difference in severity?

What are the consequences?

Adults

- 50.2% injuries to wrist and hand
- 76% injuries were open wounds

Children

- 70.0% injuries to head
- 92.8% injuries were open wounds
- 2 <one month olds are admitted each year
- 3 <1year olds are admitted each month
- Equivalent levels of PTSD as a child receiving or witnessing repetitive domestic violence

(Tulloch et al 2021, Rossman et al 1997)

Civic Records: Registered Deaths

Between 2001-2021 **NO INCREASING TREND** in registered deaths caused by dogs

Average 3 dog-related deaths per year

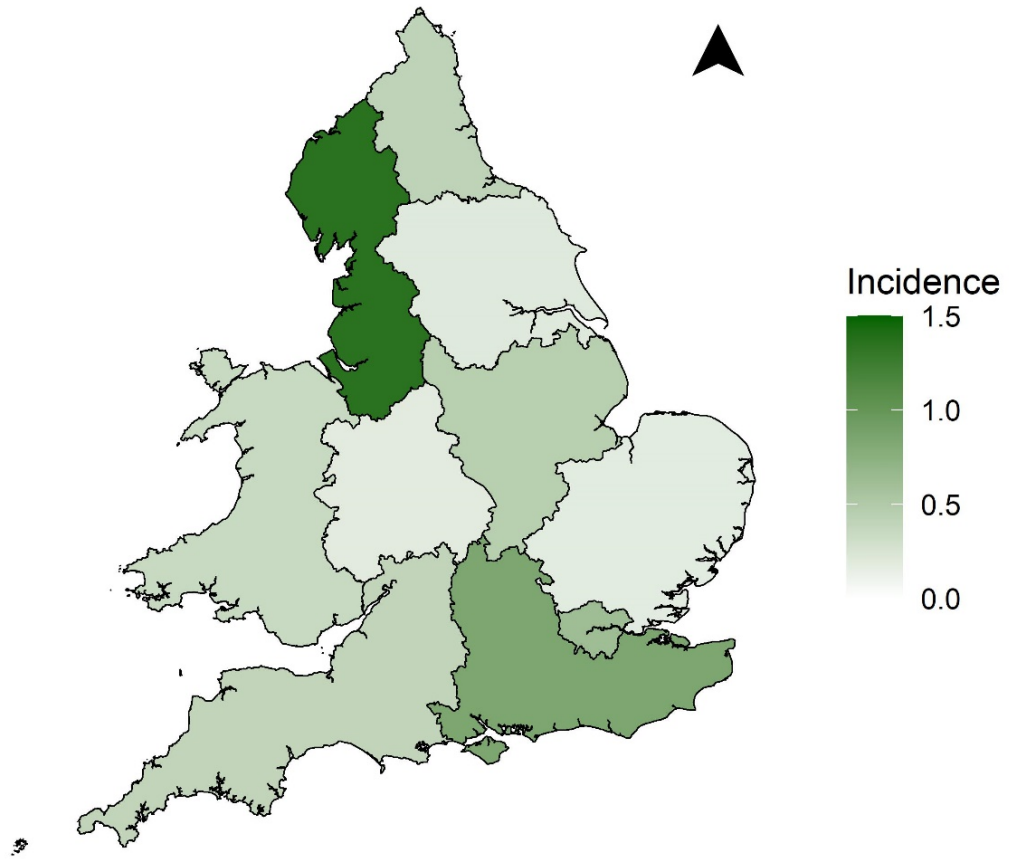
England and Wales: 0.6 deaths per 10 million population

Data for 2022 not finalised by ONS yet

Is 2022/23 a tragic one-off year or the start of a new trend?

22% are in the North-West

NO CONTEXTUAL INFO GIVEN



(Tulloch et al 2023)

Medical records: Hospital admissions

Between 2014-2022:

England: 14.7% growth in hospital admissions

Wales: 54.9%

2021-2022: 8819 admissions in England

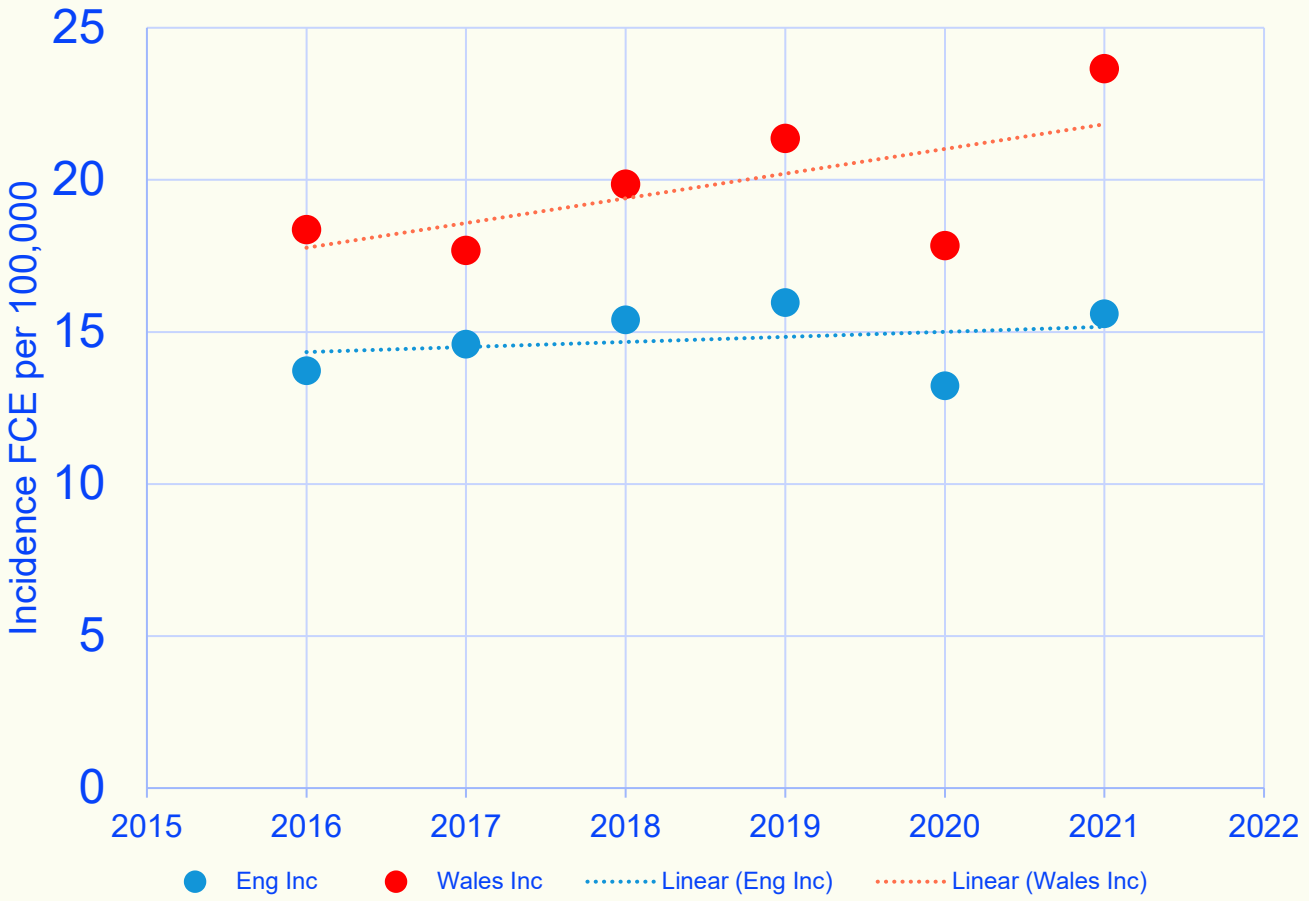
741 admissions in Wales

2017-2022: Dog population grown by 9.7%

Est 12.6 million

Bites are growing at a faster rate than the dog population

(NHS Digital 2023, Digital Health and Care Wales 2023, McMillen 2024)



Medical records: Hospital admissions

Data available: 1998-2018

The rate in children remained high, but no growth

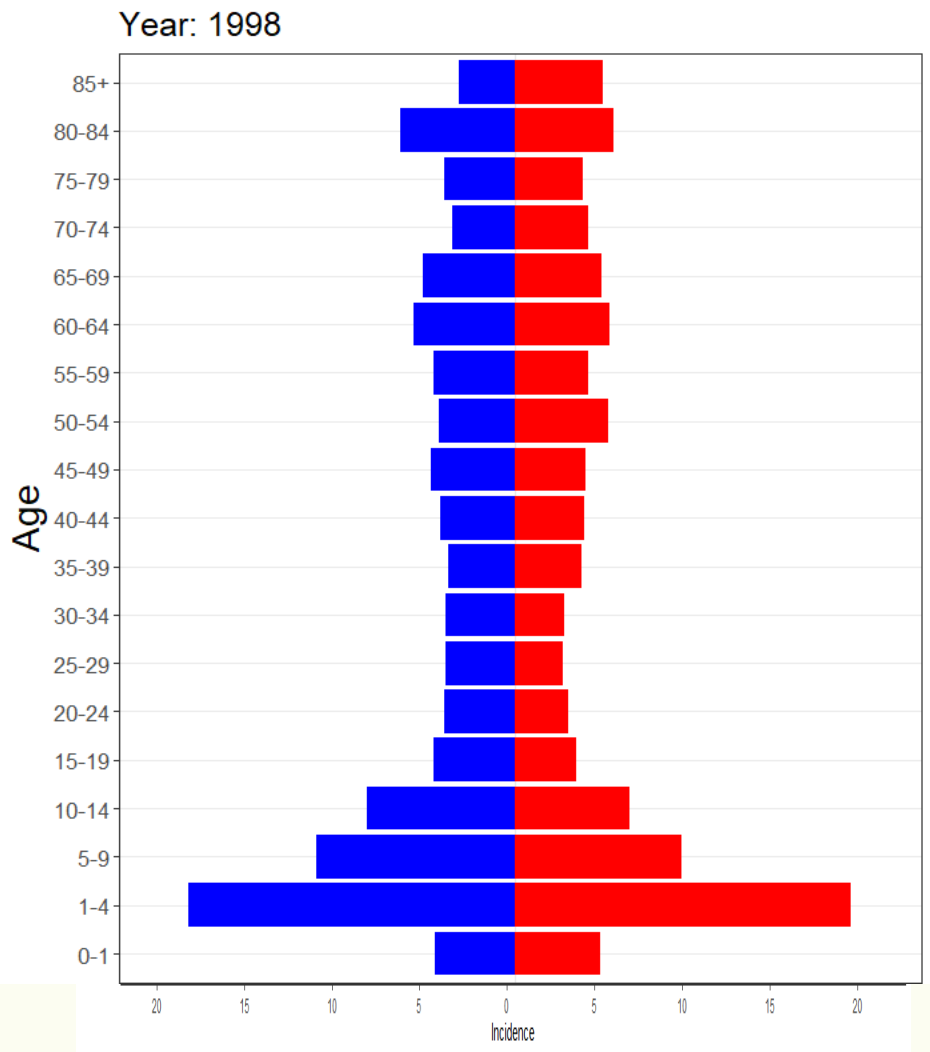
The rate in adults has tripled!

Men>women

Middle-aged women fastest growing group

More likely in white individuals than any other ethnic group

(Tulloch et al 2021, Owczarczak-Garstecka et al 2024)



Medical records: Hospital admissions

Through linkage with LSOAs we can get some contextual information:

- 1.3x more likely to be bitten in rural areas
- More likely to be bitten in areas of higher deprivation

BUT

Hotspots are almost all exclusively urban areas

AND

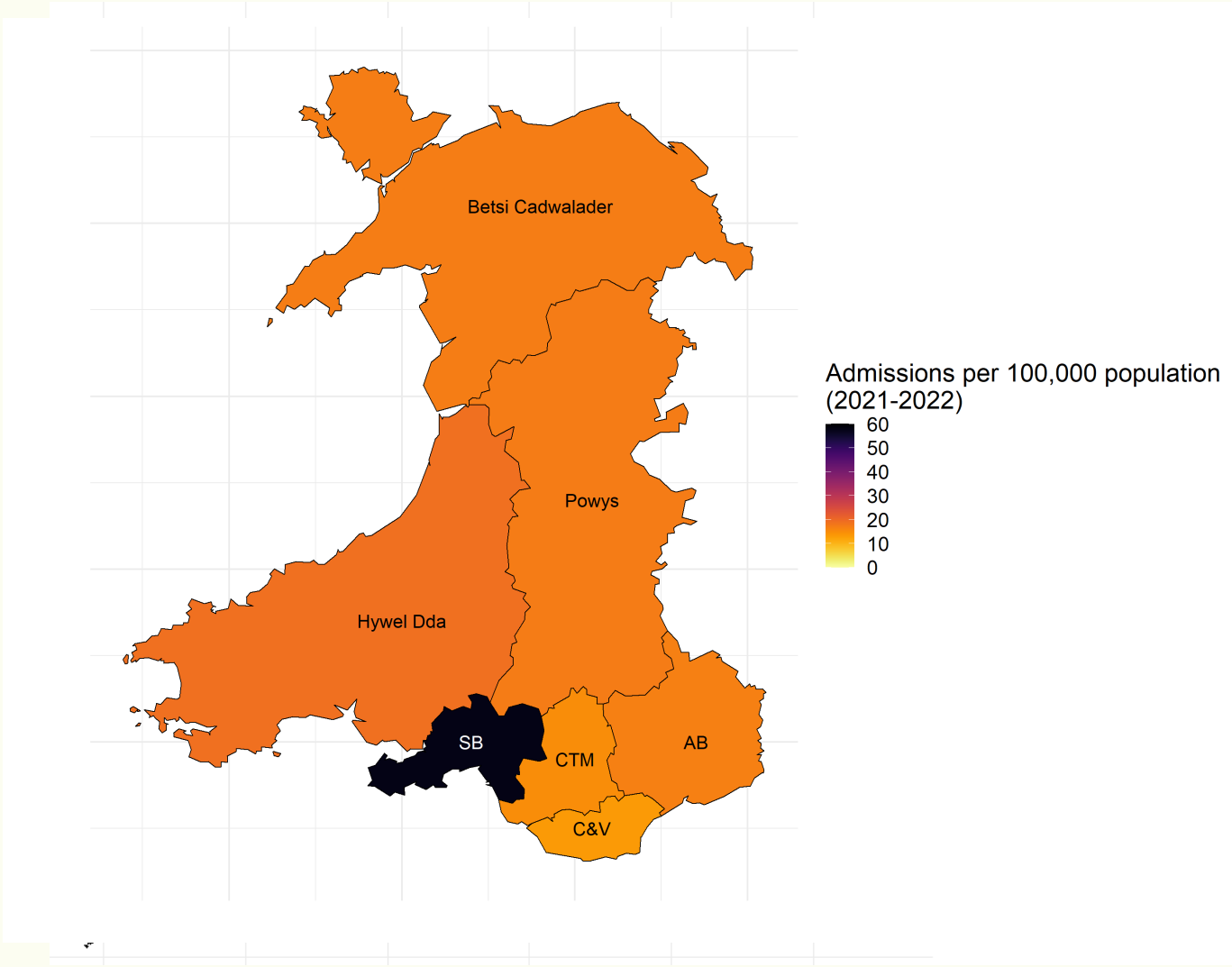
Almost all in areas with low levels of ethnic diversity

Not a national issue, or a regional issue, a community issue!

ICD Codes provide extra context

91% kids bitten at home, 80% of adults (15% on street)

(Tulloch et al 2021, Owczarczak-Garstecka et al 2024)



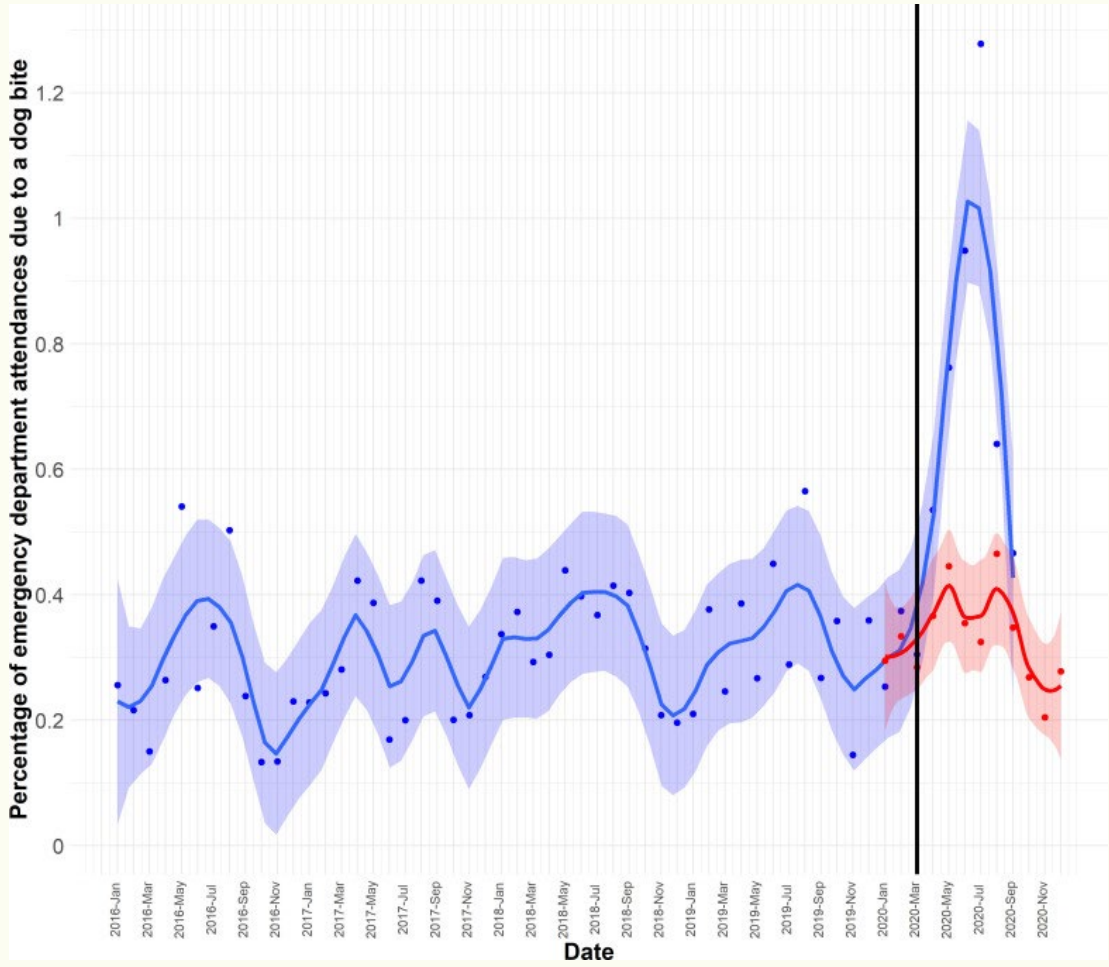
Medical records: A&E Attendance

Where the biggest burden of bites likely lie

Currently missing a national or regional picture.

Limited context of the events pre-bite without extensive paper records gathering

Alder Hey Emergency Department Data (2016-2020)
15 kids attend A&E every month
0.3% of all attendances are dog bites



(Tulloch et al 2021)

What does this data not tell us?

CONTEXT

About the dog

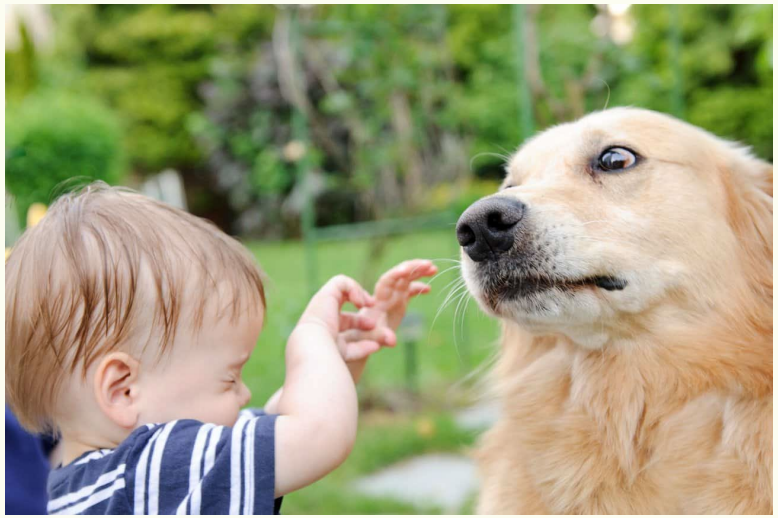
- Origin of the dog
- Primary purpose of dog
- Health, behavioural or welfare problems
- What warning did the dogs give?

About the situation

- What was occurring?
- Number of dogs in the house?
- Who was present?
- What happened immediately after the bite?

About the victim

- Dog experience of victim
- Ability to understand dog communication



So where are we now?

The scale of the problem	✓	?	?
The population involved in incidents	✓	?	?
Where is it occurring?	✓	?	?
Why are they occurring?	?	✓	✓

Can we prevent these injuries/design interventions without more contextual data?

Where can we find that critical contextual data?

Surveys/interviews

- How do you find the correct target population, esp in seldom heard communities?

Police records

Legal records – very promising!

Local authority records

Social media?

- How reliable? How ethically sound is this?

Combine data and methodologies…

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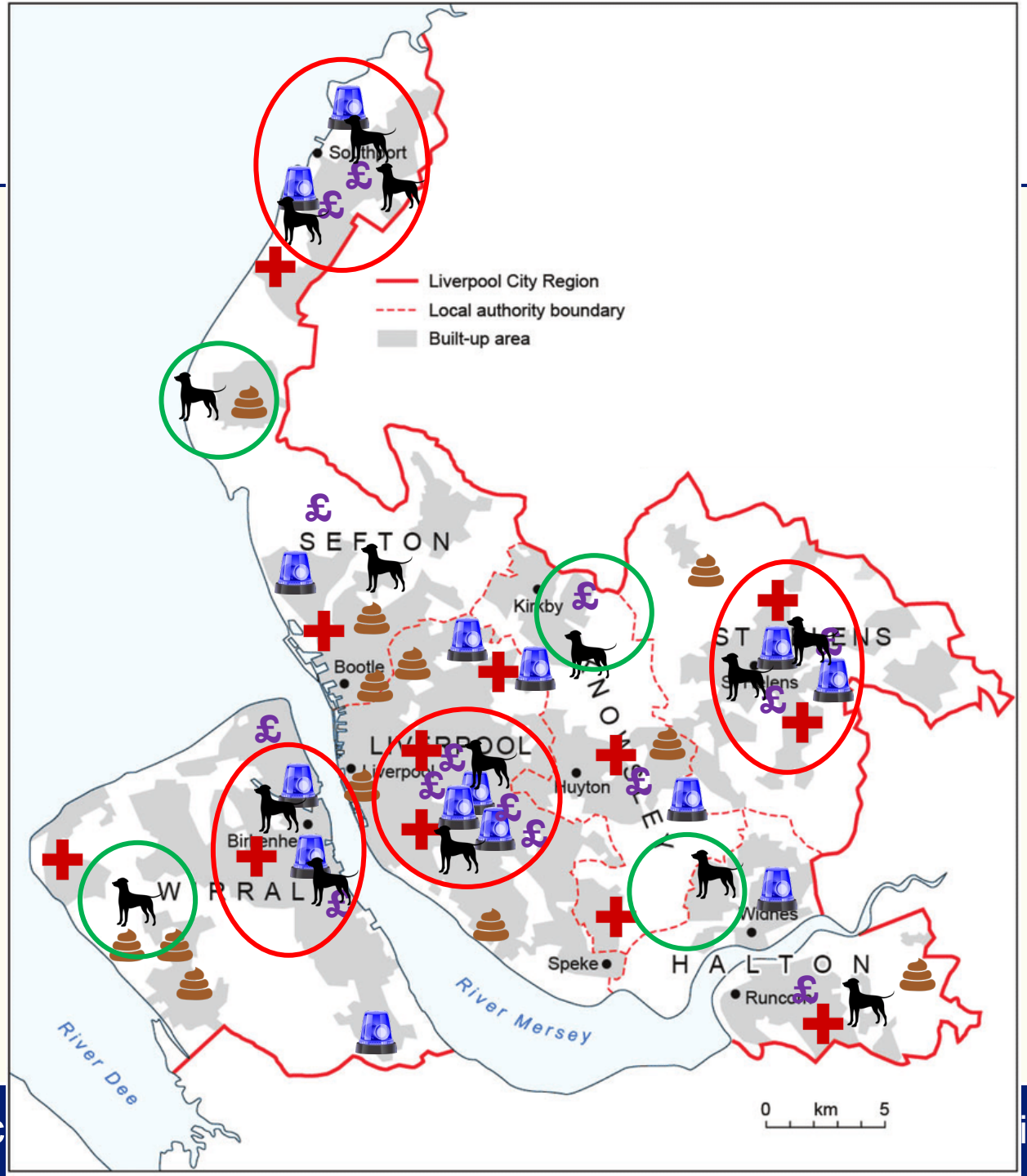
DOGS OF THE NORTH



Final thoughts

Current routinely collected data are not set up for animal-related trauma

Collecting baseline epidemiological data is challenging

Gaining contextual insight is even harder!

Novel data collection is needed to answer these questions

Combination of datasets and research methods may provide the answer

Without this insight it will be difficult to design and measure the success of injury prevention measures