Violence reduction data in ED

Collection, processing, use and value

NHS England

Presented by:

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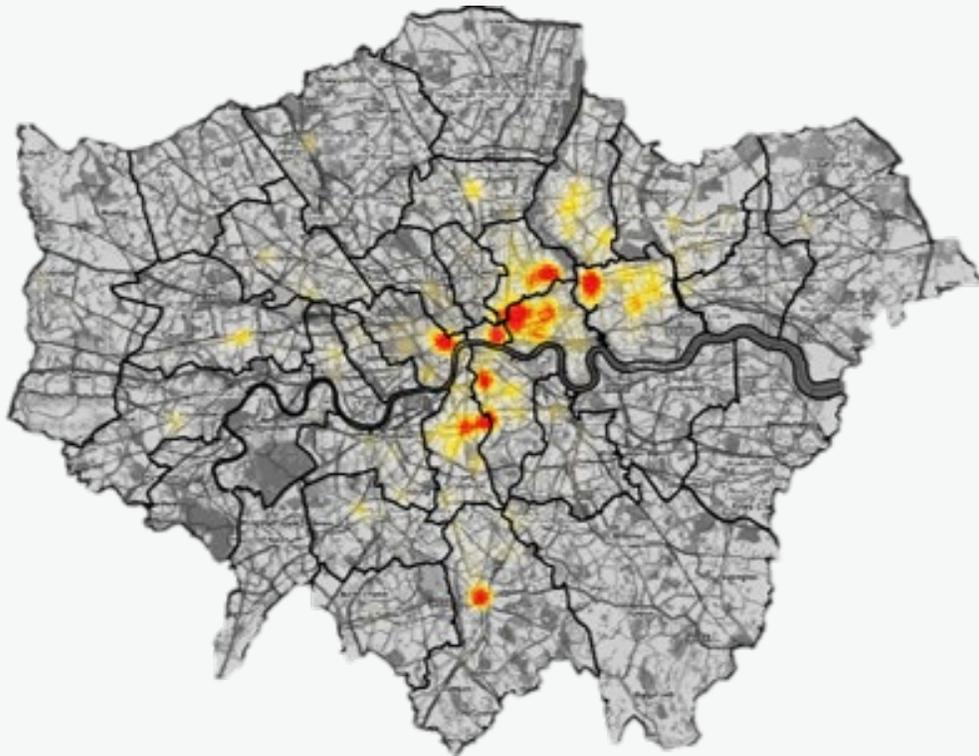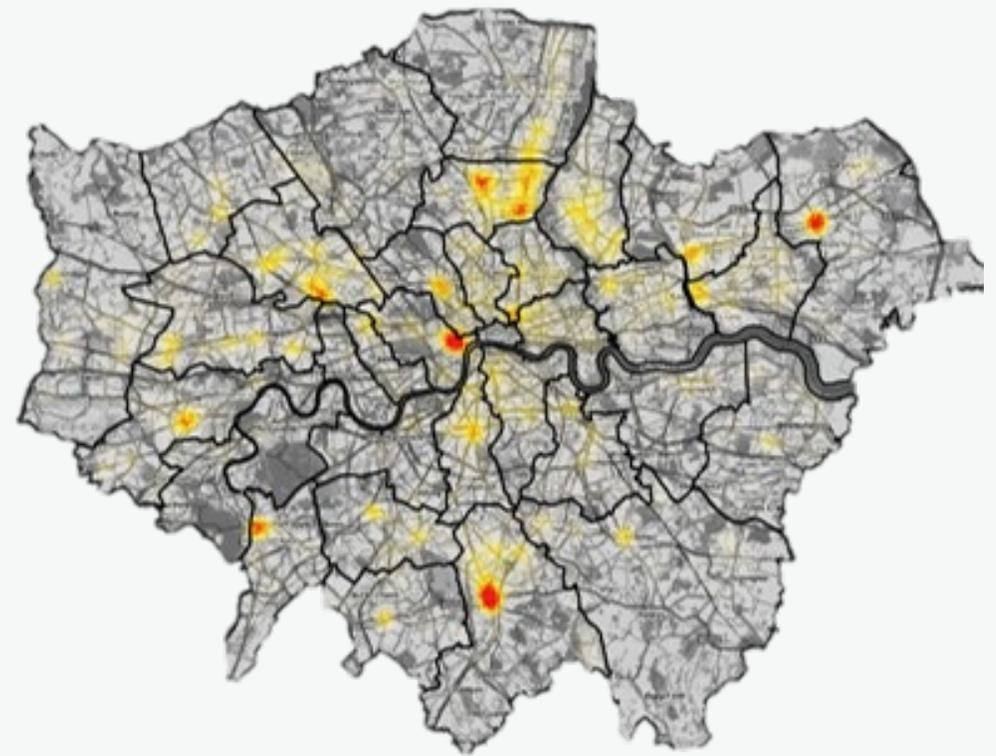# Violence is differently recorded by police and health

Swansea

All assaults
> everything recorded

Police recorded
357

Both
163

Recorded as
attending ED
993

… this results in different geographical understandings of violence

Emergency department data

Police data

ISTV is being integrated into ECDS

This provides a rich source of insight into violence seen in UEC
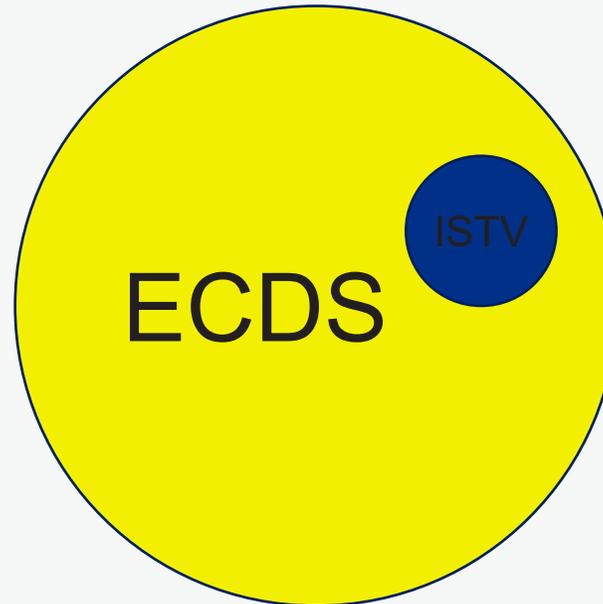
Emergency Care Data Set v4
ISTV data items
All other ECDS items including

- Place of injury
- Injury intent
- Injury mechanism
- Injury activity status
- Injury activity type
- Drug and alcohol involvement

Linkage to other health data
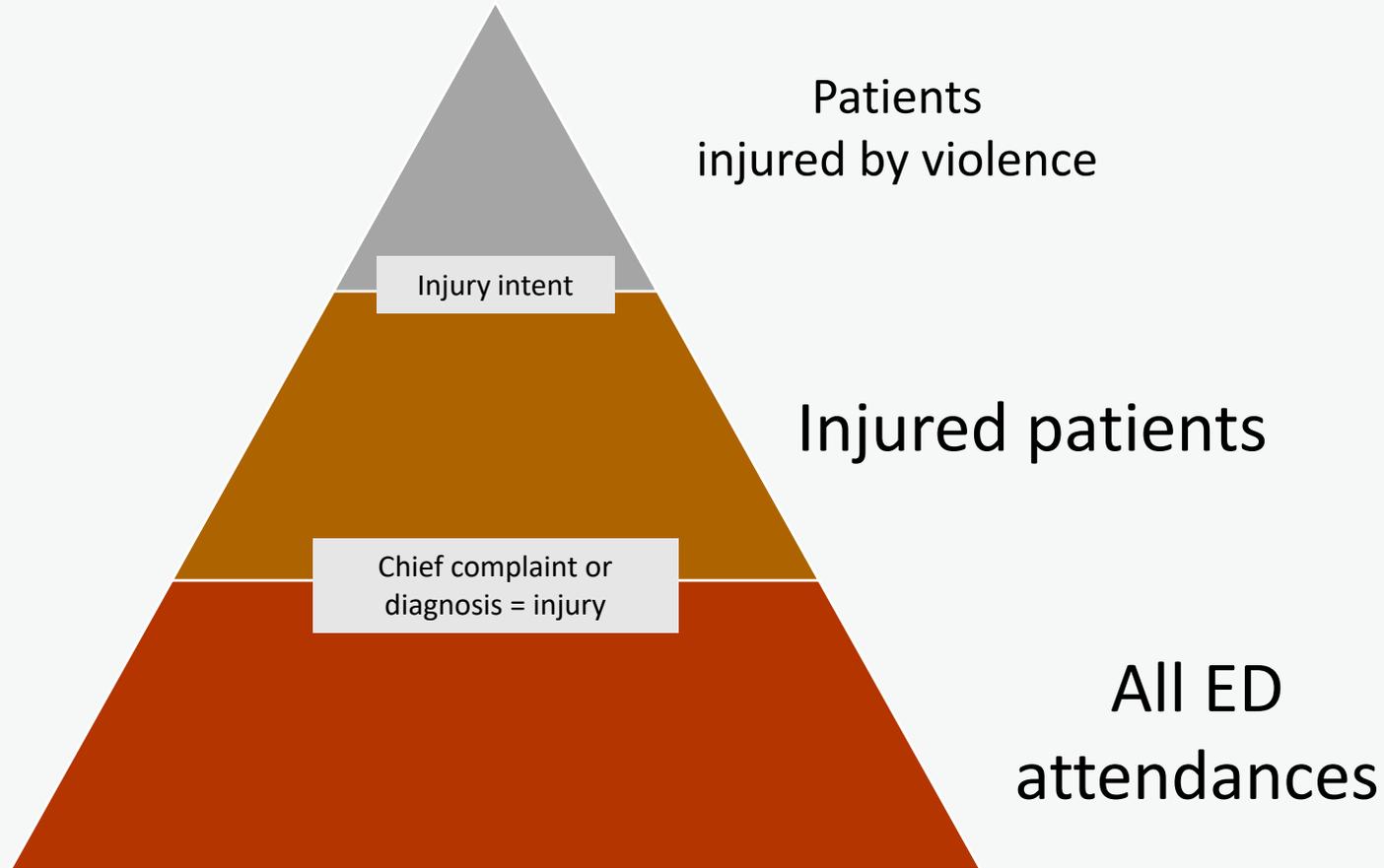Available to ICBs and NHSE (mostly)

ECDS

ISTV

Information Sharing to Tackle Violence

- Location
- Time & date of assault
- Time & date of arrival at ED
- Mechanism
- ED Site

Local data sharing

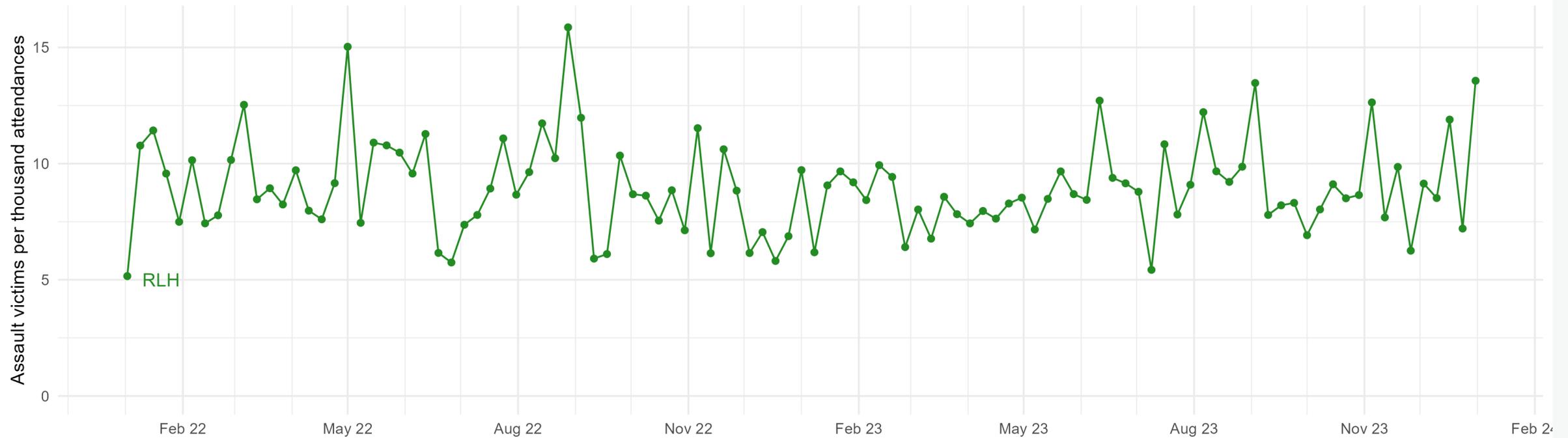# Patients who have been assaulted are a fraction of those attending ED

Patients
injured by violence

Injury intent

Injured patients

Chief complaint or
diagnosis = injury

All ED
attendances

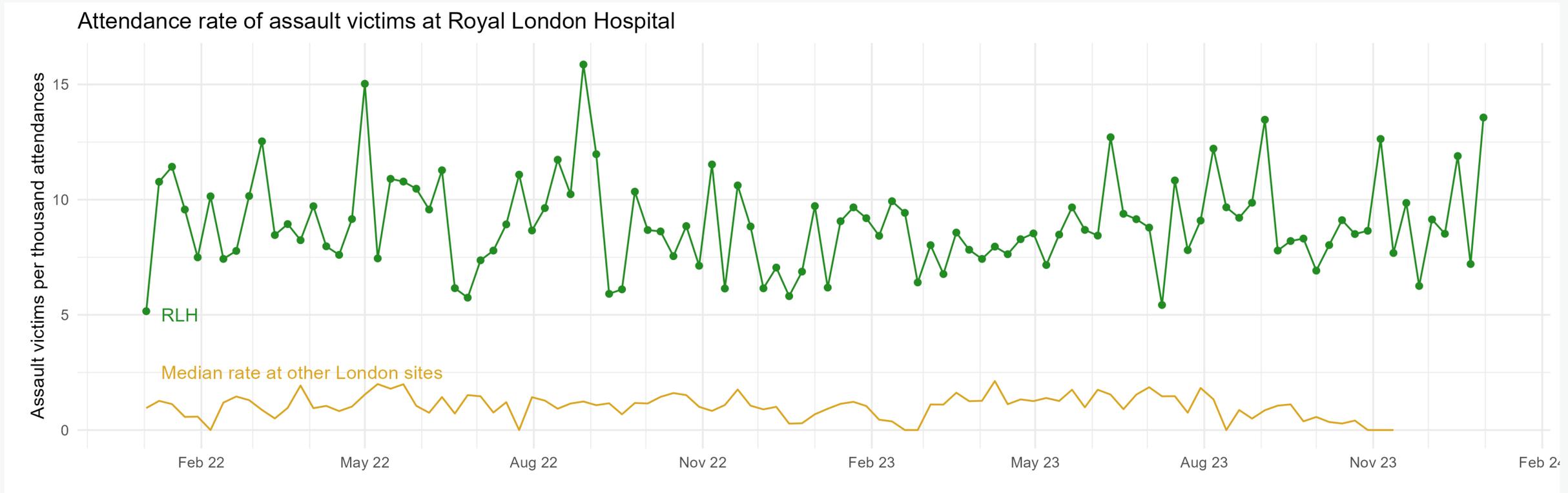# A deep dive at Royal London Hospital

RLH has consistently recorded assaults

Attendance rate of assault victims at Royal London Hospital

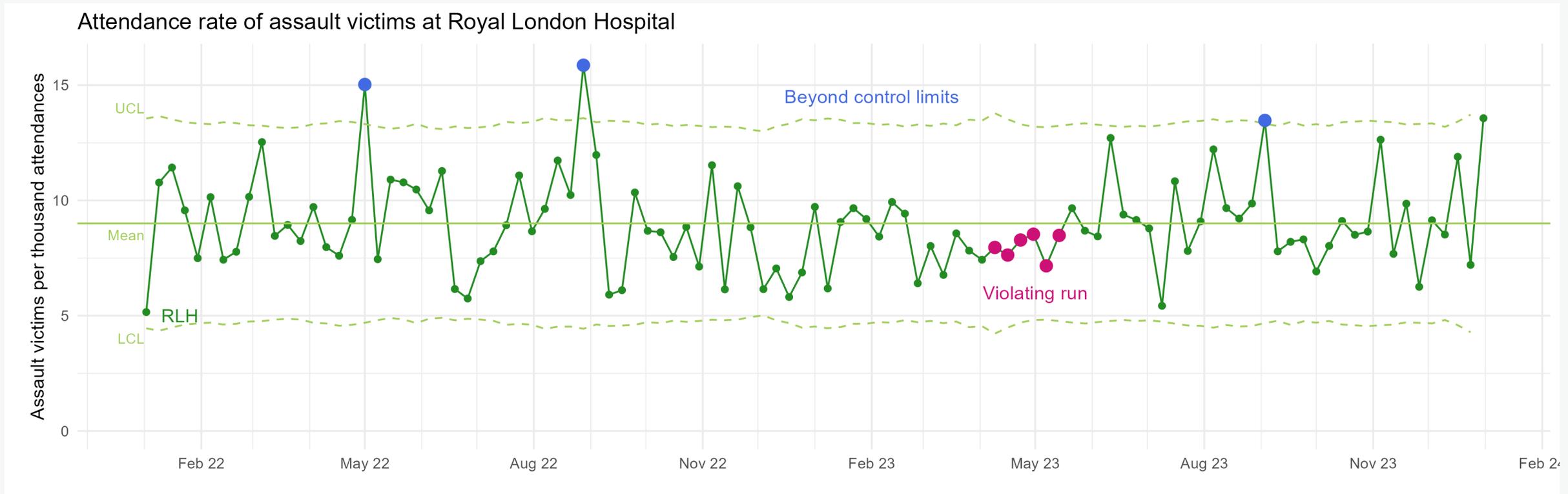# … at a higher rate than other London sites

Attendance rate of assault victims at Royal London Hospital

… anomalies can be identified for investigation

Attendance rate of assault victims at Royal London Hospital

… anomalies can be identified for investigation

Attendance rate of assault victims at Royal London Hospital
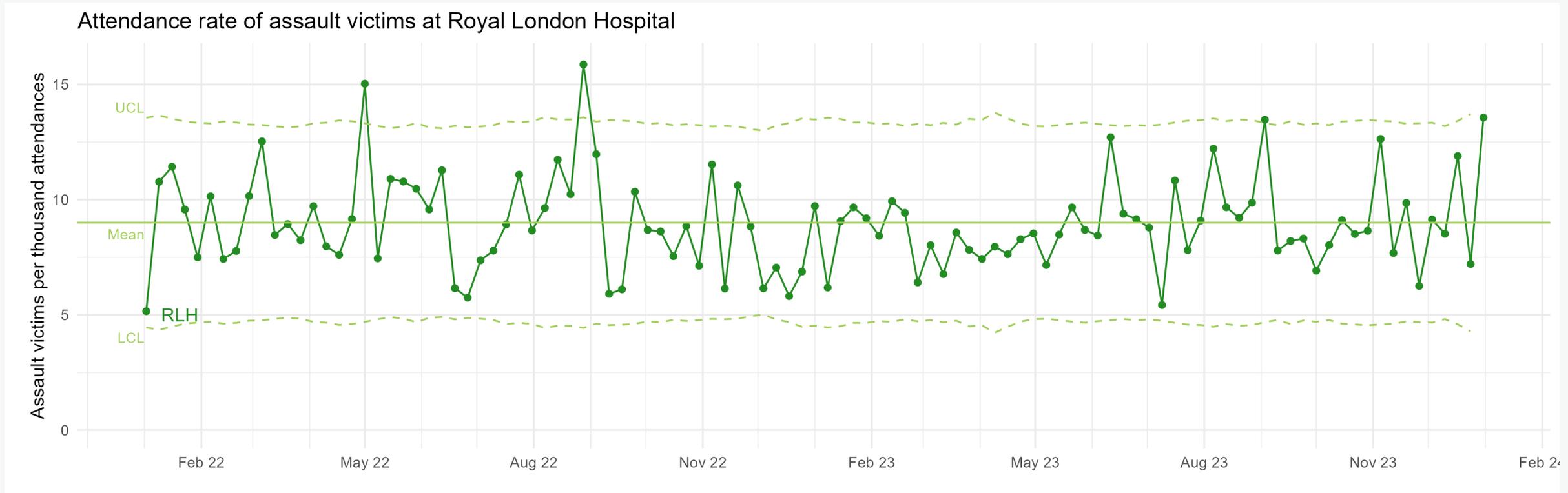
… and recording is decoupled from local reported crime

Attendance rate of assault victims at Royal London Hospital

Police recorded violent crime within 3km of RLH
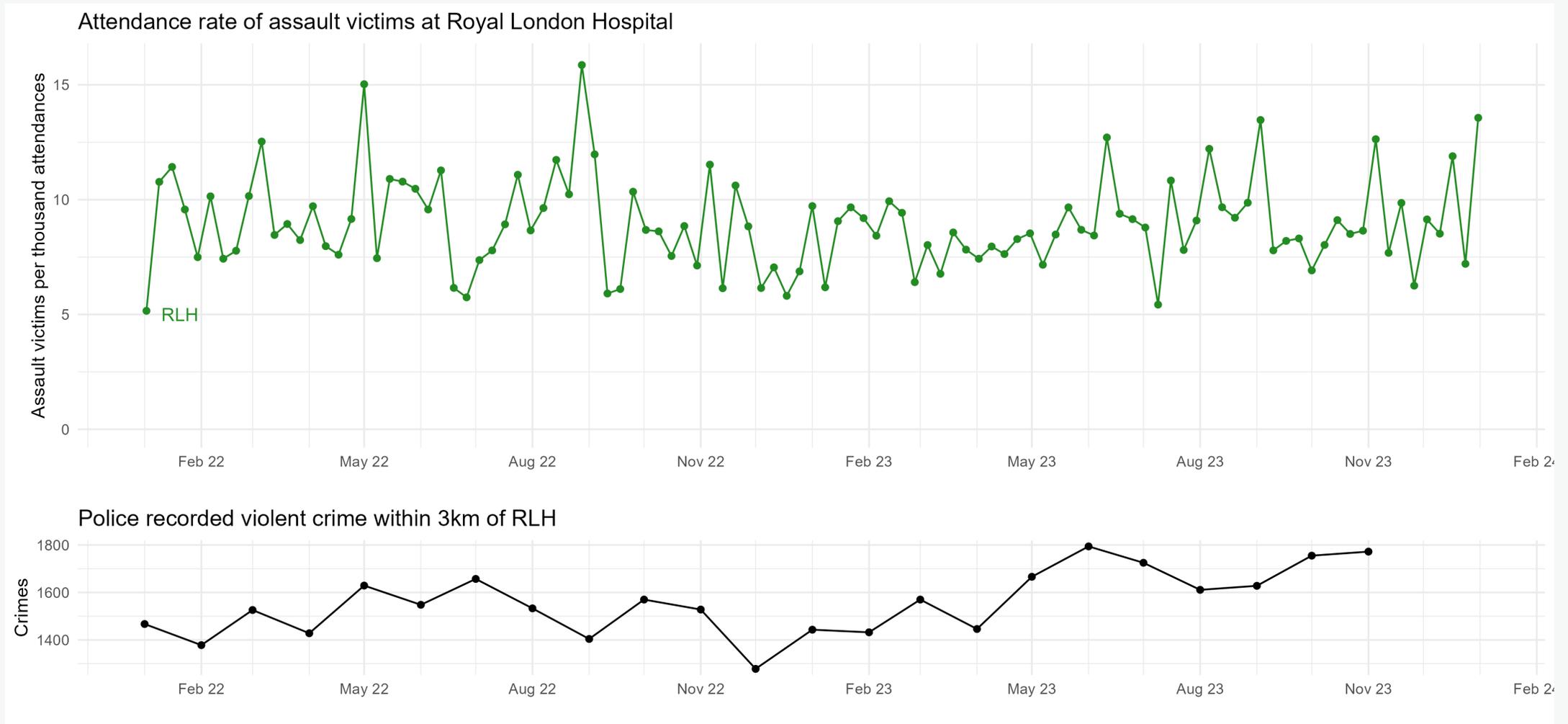
There are tens of thousands more assaults local to RLH than are seen in the ED

Actual
4020

2% activity

60% reported

30% reported

4k

8k

24k

48k

All violence with injury

- 30-60% of assaults are reported to the police
- 1-2% of UEC activity is as a result of violence

- Royal London Hospital ED accounts for 3.2% of London UEC activity
- There were 448 thousand attendances at Royal London ED in 2021-2023
- There were 453 thousand violent crimes reported in London in 2021-2023

It is likely that not all injuries from assault are being recorded at RLH
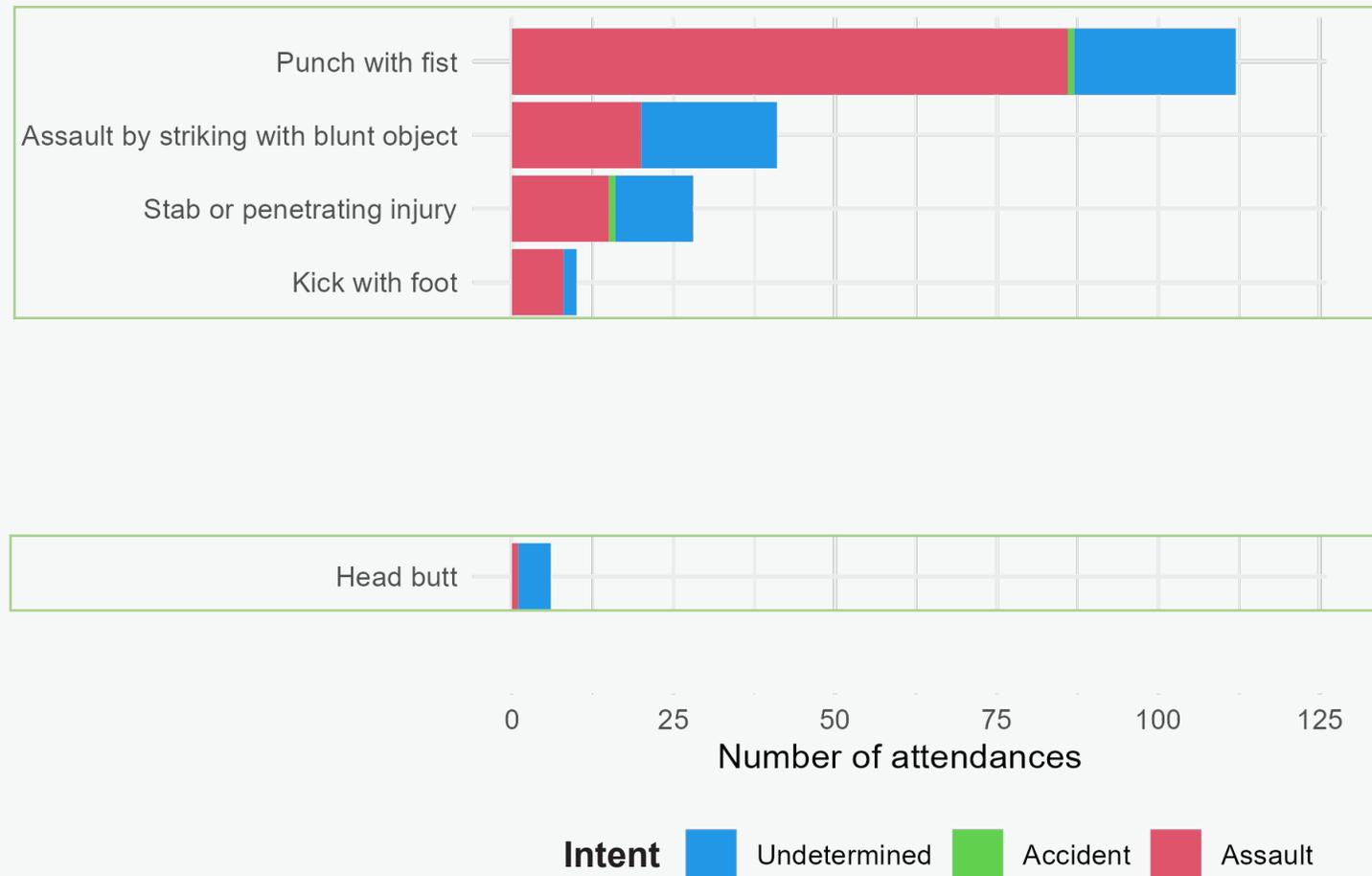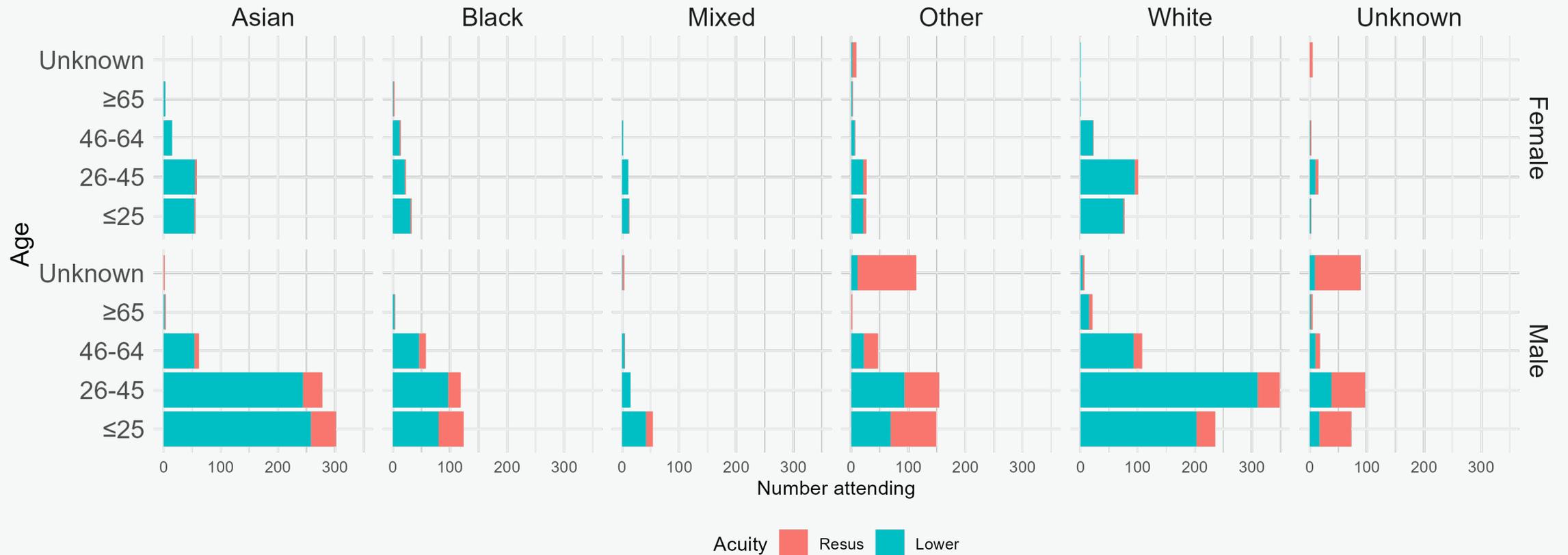
It's not perfect data, is it useful?

There are strong patterns around age, sex, ethnicity and acuity

Age, ethnicity and sex of those attending Royal London ED
Jan 2022 - Dec 2023

The local population need at RLH includes those who are homeless

16% of assault related attendances at RLH are from people recorded as homeless

NAME	N	ASSAULTS PER THOUSAND PATIENTS
Health E1	55	54
Special Allocation Scheme (NEL)	4	22
Harford Health Centre	44	4
The Mission Practice	41	3
XX Place Health Centre	58	3

ACCOMMODATION	N	PERCENT
Homeless	1	2%
Sleeping in night shelter	1	2%
Unknown	53	96%

Health E1 provides a specialised service dedicated to the needs of people who are street homeless and those in temporary or hostel accommodation in the borough of Tower Hamlets

Victims of assault at RLH over 16 years old attend most commonly in the early hours of the morning

Time of attendance of victims of assault
Jan 22-Dec 23 at RLH ED

On a school day
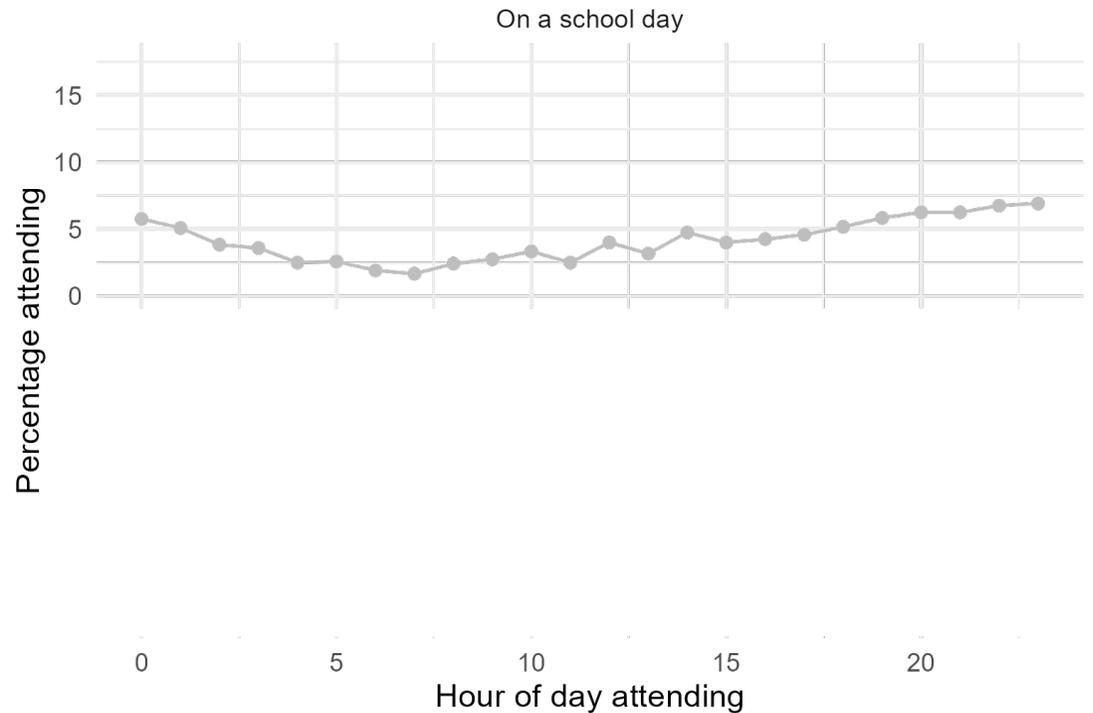
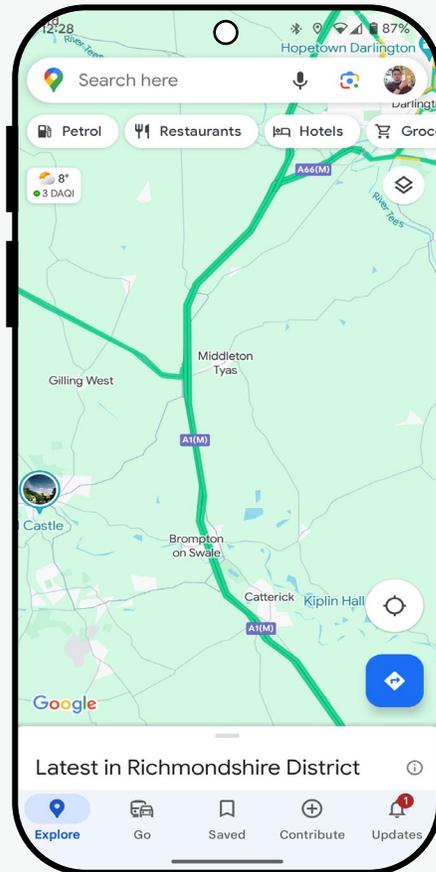# But school age victims of assault at RLH most commonly arrive late afternoon

Time of attendance of victims of assault
Jan 22-Dec 23 at RLH ED

On a school day

Percentage attending

>16
≤16

Hour of day attending
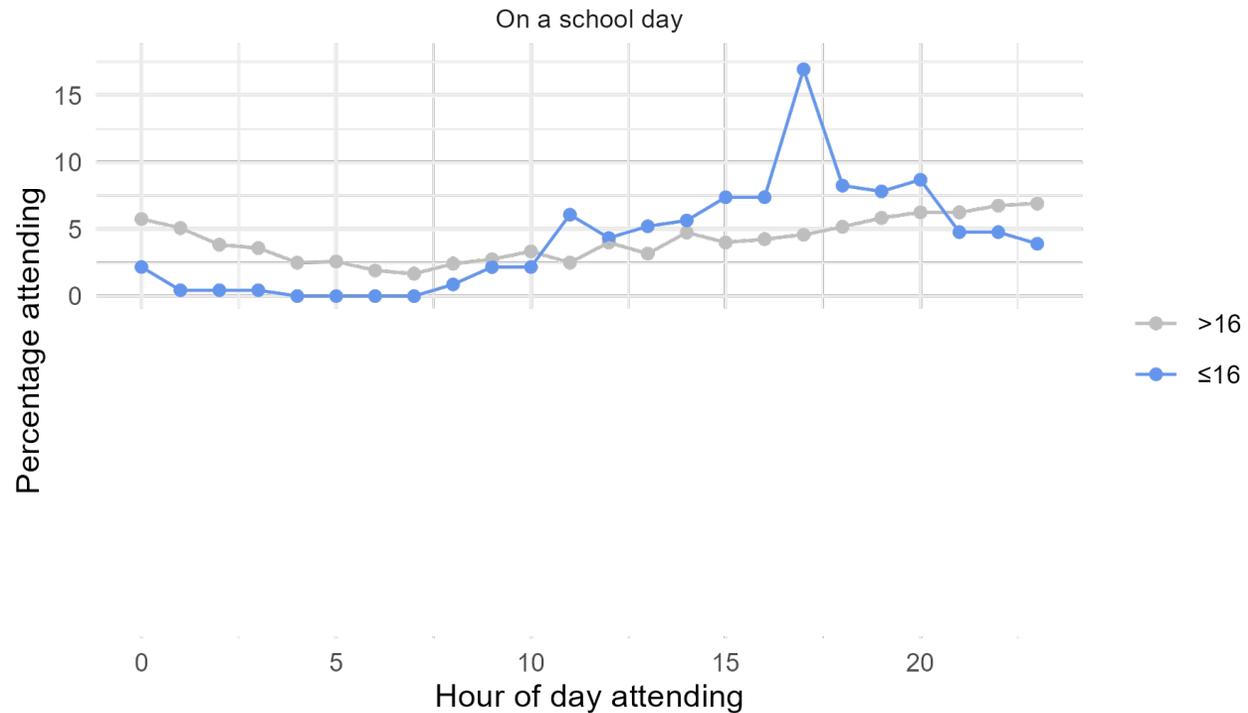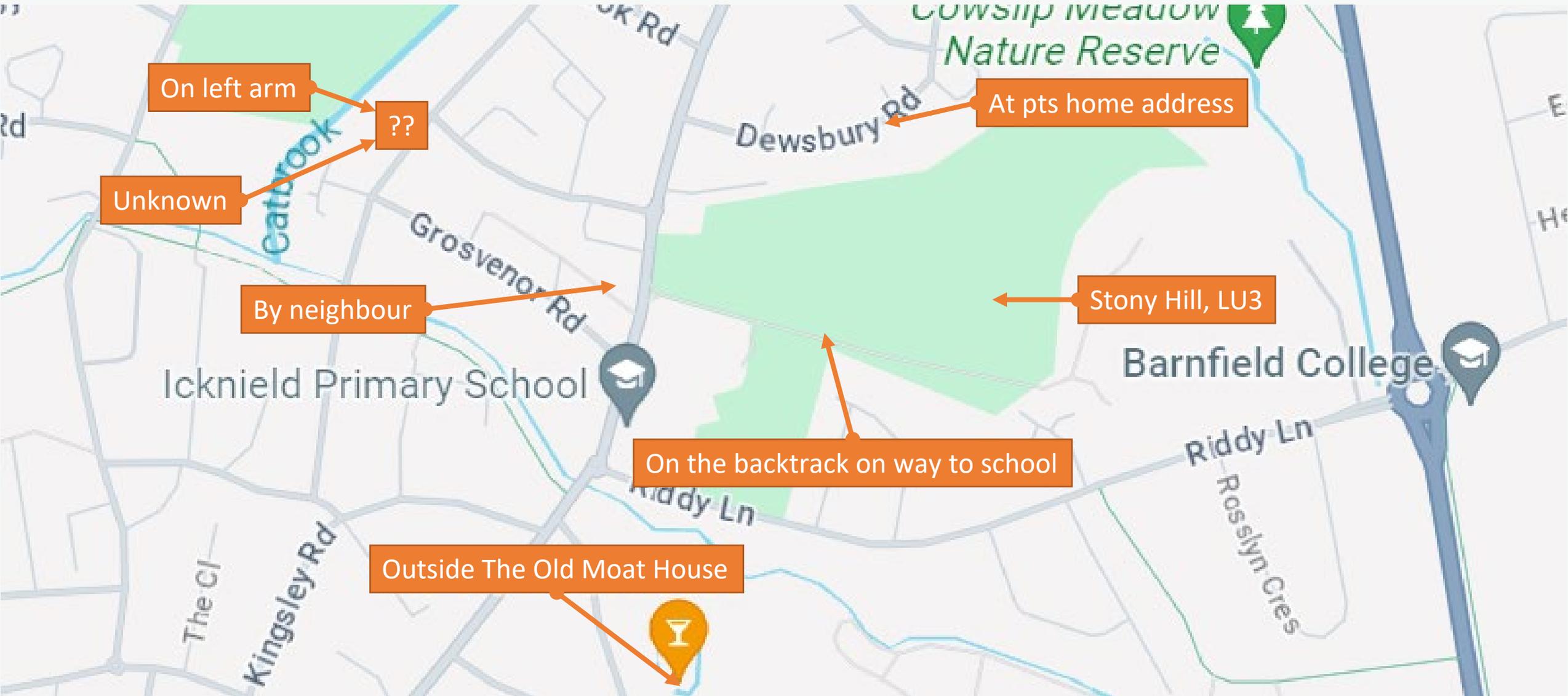
Assault location description

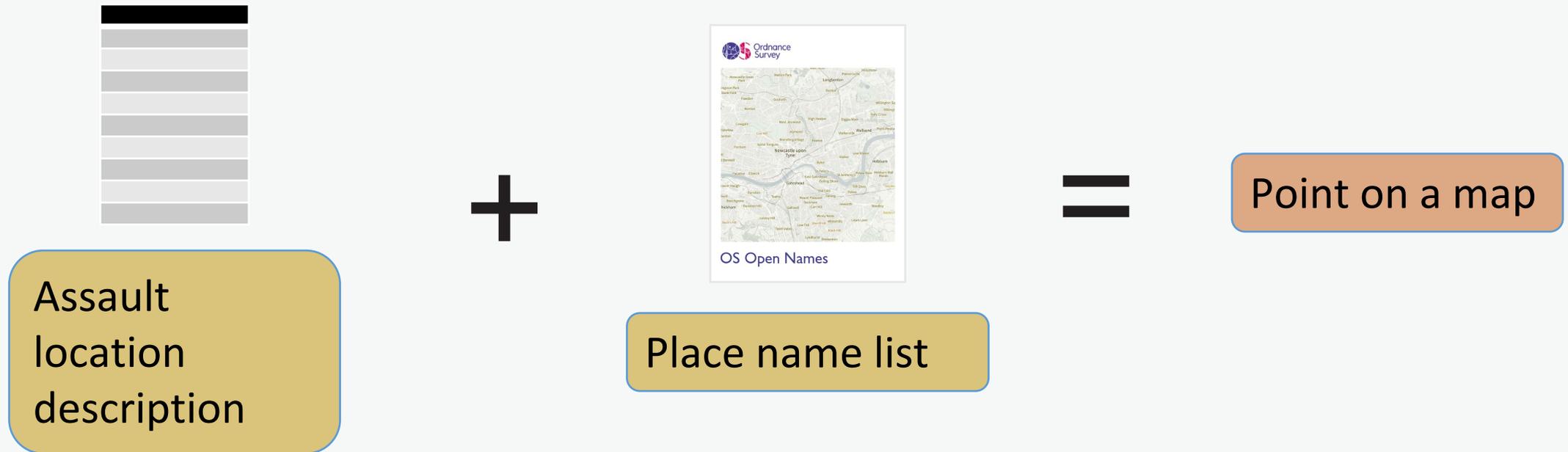# Location of assault can be tricky to capture

- Willingness of patient
  - Distrust of authority
  - Fear of reprisals
- Ability of patient
  - Intoxicated
  - Unconscious
  - Local knowledge
  - Language
- Ability of ED
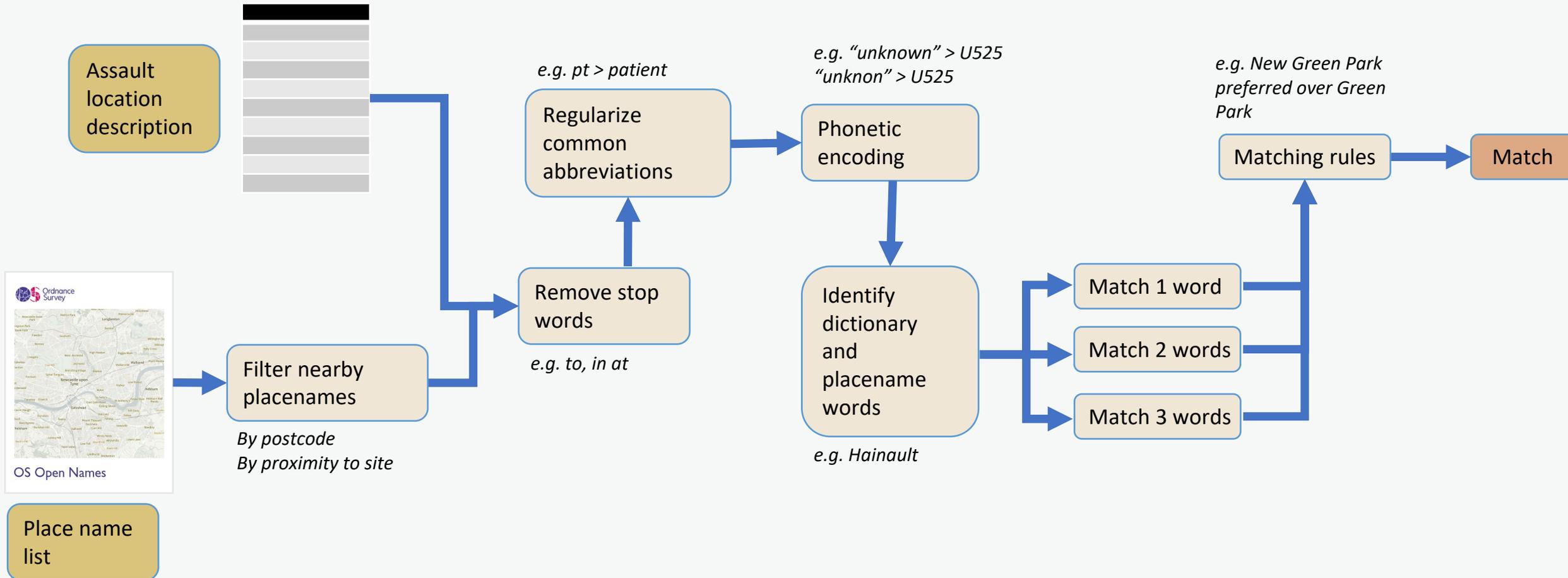 - Time & capacity
  - Clinical system

Free text capture

Free text can be translated into points on a map – by an automated process

Street and place names can generally be identified

Assault location description

$+$

OS Open Names

Place name list

$=$

Point on a map

Street and place names can generally be identified (in detail)

Assault location description

Regularize common abbreviations

e.g. pt > patient

Phonetic encoding

e.g. "unknown" > U525
"unknon" > U525

Matching rules

e.g. New Green Park preferred over Green Park

Match

Remove stop words

e.g. to, in at

Filter nearby placenames

By postcode
By proximity to site

OS Open Names

Identify dictionary and placename words

e.g. Hainault

Match 1 word

Match 2 words

Match 3 words

Place name list

THE STREET

Assaults at home can be identified

Assault location description	Label
At pts home address	Home
On the street, near Blue Park	Not home
At boyfriends flat	Not home
Outside own front door	Home
Outside the Ram's Arms	Not home
Dunstable town centre	Not home

# Assaults at home can be identified by machine learning

Manual lab...
of historic a...
location
descriptions
examples

lled

Model training

Accuracy: 96.82%

Prediction	Reference labelled data	
	Home	Other location
Home	206	23
Other location	34	1,529

ault
location

Combining approaches allows identification of most descriptions containing useable information

132 errors of which 100 were matches that were mapped to no-match.
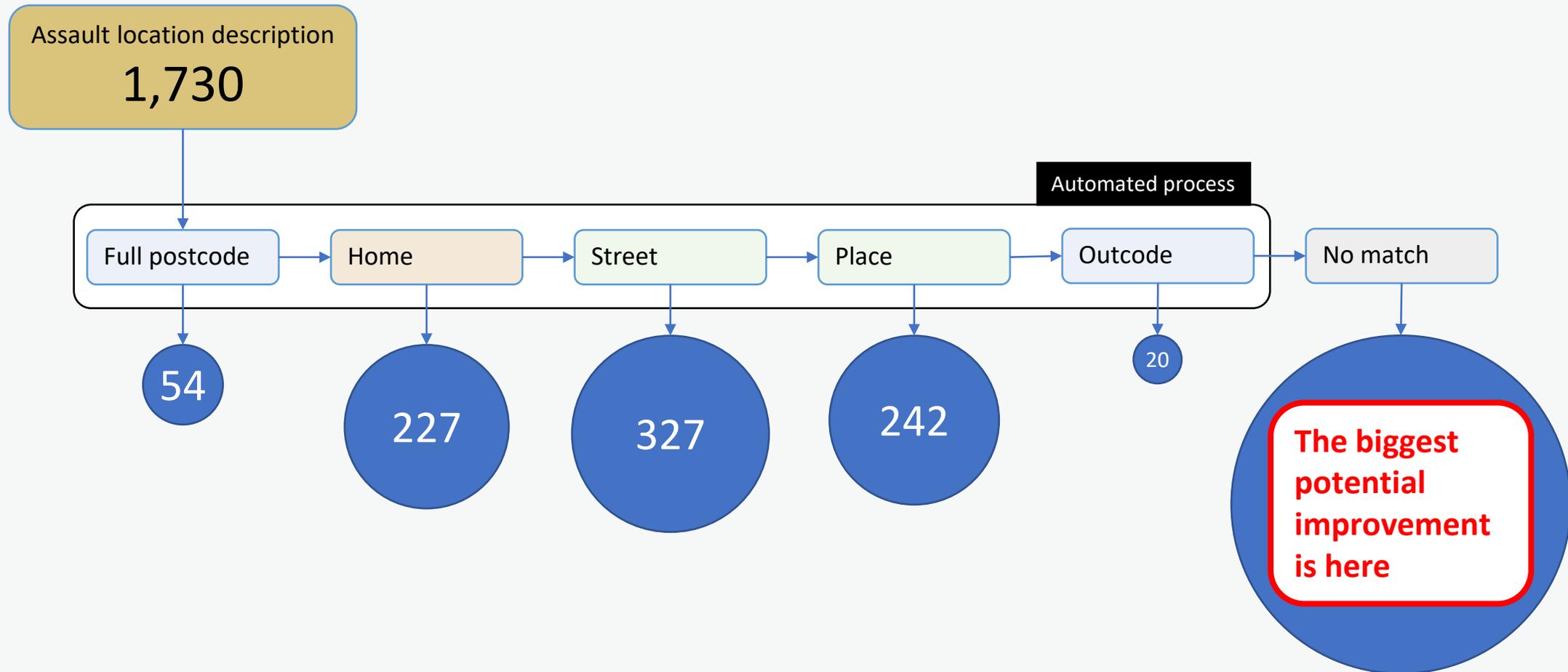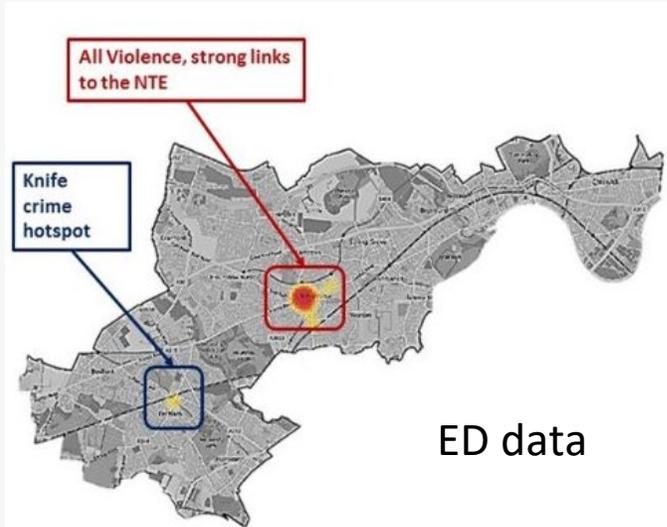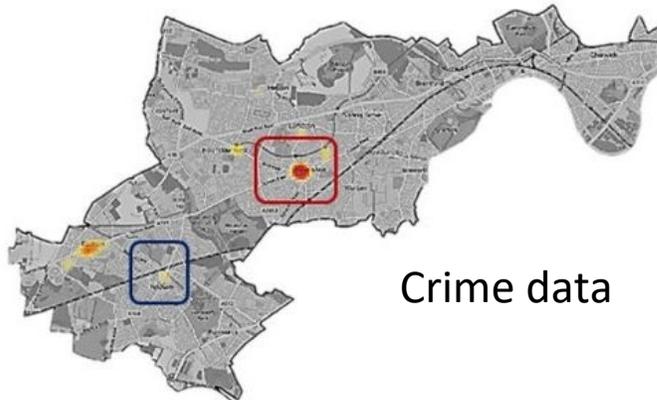
Use and the future
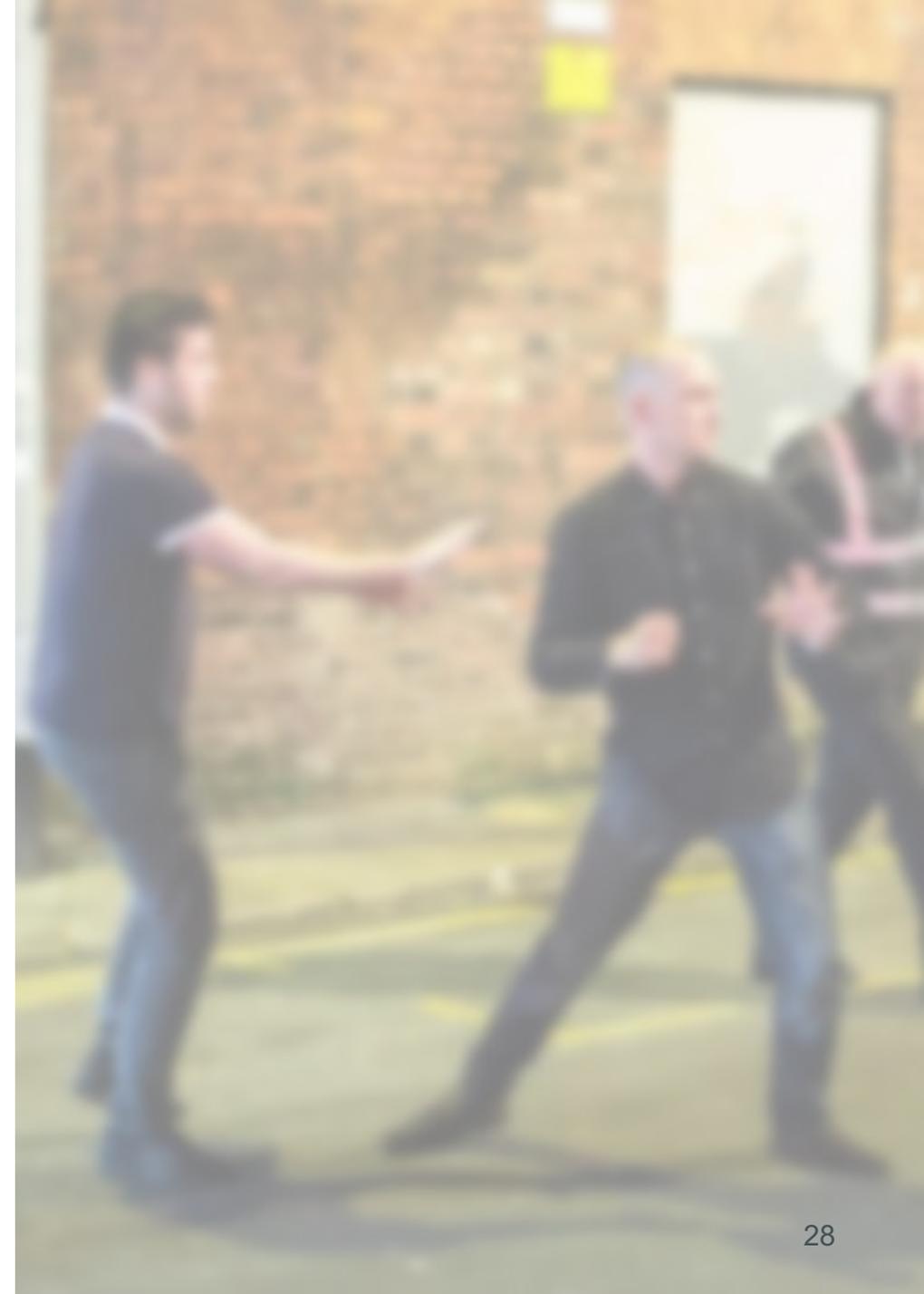
Effective violence reduction is informed by data

Hounslow, 2018: Operation Lambridge

ED data

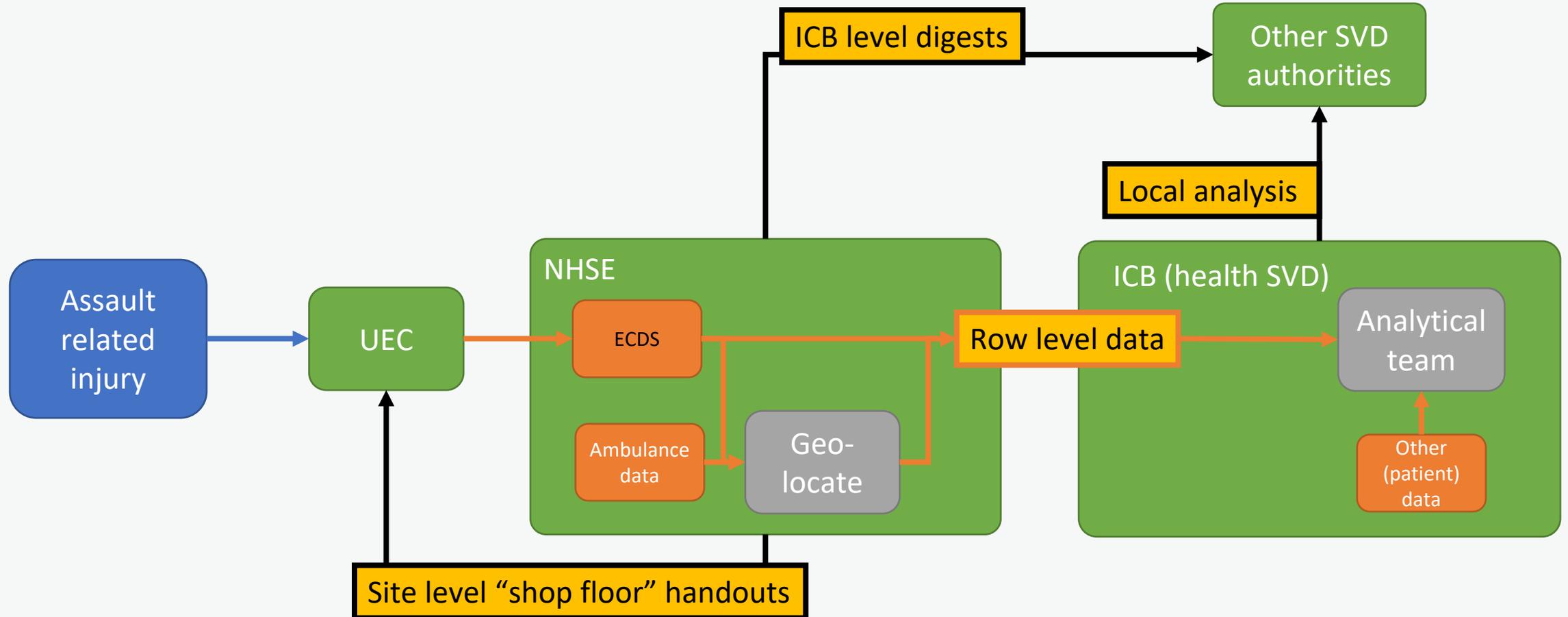Crime data

Hospital Based Youth Worker evaluation

Serious Violence Duty Strategy & Needs Assessments

Future plans: ISTV and the Serious Violence Duty

Conclusion

- ED has a unique and important view of violence
- Capturing ISTV in an ECDS compatible way makes all parts of the data much more available for a wide range of purposes.
    - ISTV
    - Surveillance
    - Population need
    - Evaluation
- Work driven by the Serious Violence Duty, will speed up the processing of ISTV and improve availability, useability and practical use of data.
- Effective collection cannot exist without champions in EDs

NHS England

Thank You

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