

**Are you being served? The  
estimated burden of alcohol on  
York Emergency Department  
25<sup>th</sup> April 2013**

Safer York Partnership Annual Crime Summit

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Health



Triage Waiting Area



Toilet



# Background

- Assaults – pilot audit initially
- Information sharing with SYP
- Link with street drinking and frequent flyers to the ED – 74 patients attended 10 or more times in a year – followed up for 18 months

# Frequent Attenders Audit

	<b>Alcohol Percentage</b>
Alcohol and/or drug percentage of total patients	51
Percentage (from hospital letters) known to the police	92
Percentage known to be violent	82
Percentage with housing difficulties	94
Percentage needing removed from the ED	93

**alcoholic**

**personality**

**problems**

**mother**

**disorder**

**depression**

**abused**

**children**

**mother**

**personality**

**problems**

**depression**

**died**

**lost**

**drugs**

**raped**

**OCD**

**abuse**

**children**

**abused**

**disorder**

**alcohol**

**child**

**children**

**abused**

**disorder**

**DSH**

**suicide**

**heroin**

**husband**

**harm**

**sexually**

**panic**

**anxiety**

**suicidal**

**death**

**neglect**

**violence**

**brother**

**turned**

**poor**

**sexual**

**self**

**sister**

**domestic**

**babysitting**

**psychosis**

**bleach**

**convicted**

**cannabis**

**school**

**attacks**

**unwanted**

**childhood**

**prison**

**cruelty**

**PTSD**

**committed**

**depression**

**died**

**since**

**cancer**

**secure**

**assaulted**

**physically**

**lost**

**self-neglect**

**bipolar**

**accidental**

**raped**

**psychosis**

**bleach**

**convicted**

**cannabis**

**school**

**attacks**

**unwanted**

**childhood**

**prison**

**home**

**mobility**

**schizophrenia**

**social**

**influences**

**abuse**

**children**

**abused**

**disorder**

**alcohol**

**child**

**children**

**abused**

**disorder**

**DSH**

**suicide**

**heroin**

**husband**

**harm**

**sexually**

**panic**

**anxiety**

**suicidal**

**death**

**neglect**

**violence**

**brother**

**turned**

**poor**

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**convicted**

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**school**

**attacks**

**unwanted**

**childhood**

**prison**

**home**

**mobility**

**schizophrenia**

**social**

**influences**

**abuse**

**children**

**abused**

**disorder**

**alcohol**

**child**

**children**

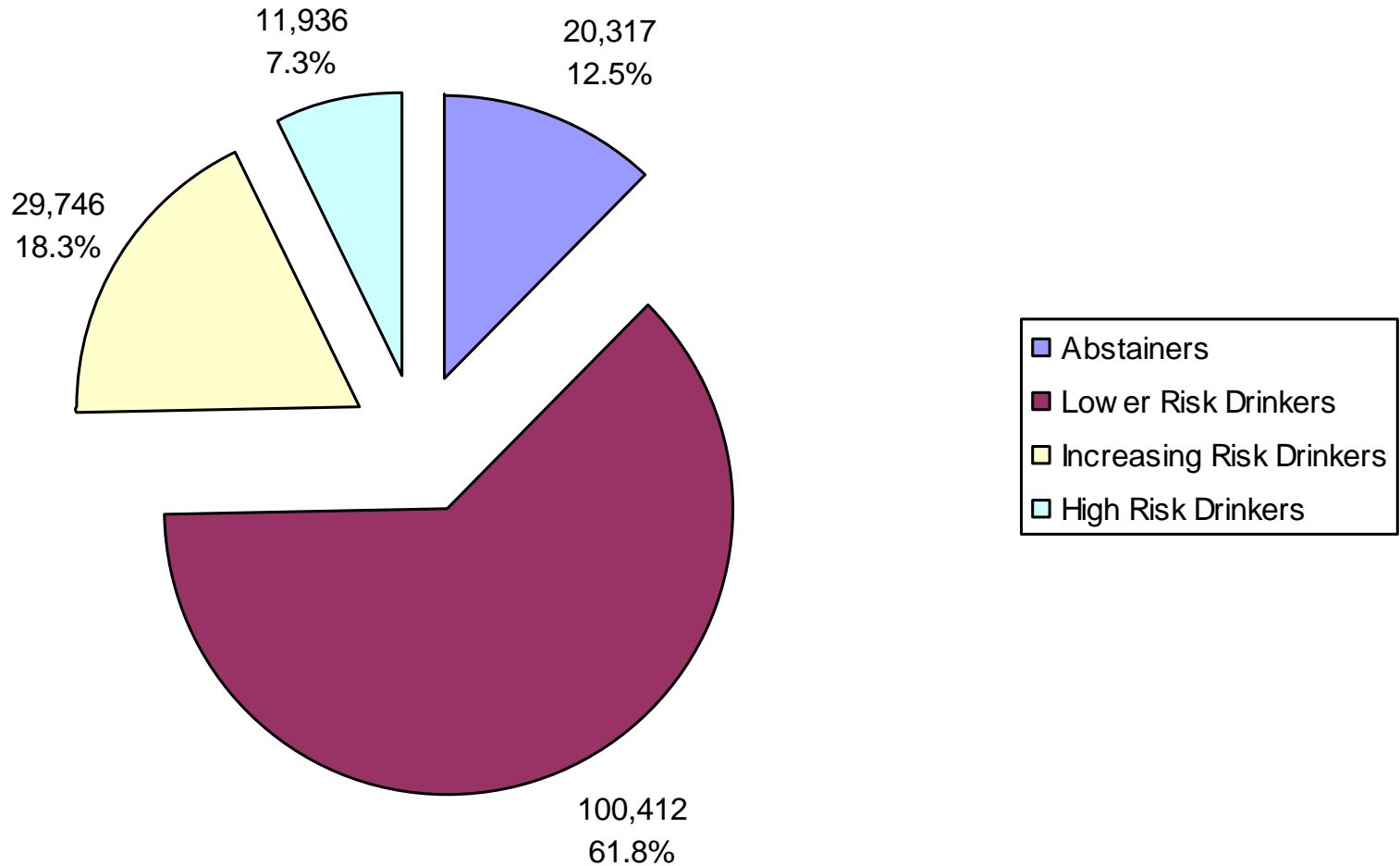
**abused**

**disorder**

# The Bigger Picture?

- Hazardous drinking – patterns to put the drinker at increased risk of harm
- Harmful drinking – experiencing health problems related to their drinking
- Dependent drinking – physically and psychologically

# York Number and Proportion of the Population by Drinking Risk Category (2007 Mid Year Population Aged 16 and Over)



# Introduction

- Health Needs Assessment was being written for York by the Public Health Department in 2011,
- Impact of alcohol on EDs is not clearly understood; routine data doesn't reflect the true picture,
- York Teaching Hospitals NHS Foundation Trust (YTHNFT) have a “flag system” for attendances relating a number of issues including mental health, domestic violence, and alcohol



# Questions We Asked

- Does the flag system work?
- What is the alcohol burden?
- What does the burden look like?
  - Who, what, when, where?...
- How much does it cost?
  - Time, money, stress!

# Methods

- Originally planned as an audit/ needs assessment,
- Registered with YTHNFT as an “Effectiveness Project” and given governance and Caldicott approval – Honorary contracts for TH and JC.
- The following weeks were selected:
  - Week 5 – Mon 00:00 31<sup>st</sup> January to 23:59 Sun 6<sup>th</sup> February
  - Week 15 – Mon 11<sup>th</sup> to Sun 17<sup>th</sup> April
  - Week 35 – Mon 29<sup>th</sup> August to Sun 4<sup>th</sup> September
  - Week 49 – Mon 5<sup>th</sup> to Sun 11<sup>th</sup> December.
- Data collected on date, arrival time, sex, age, abridged postcode, arrival method, disposal type, alcohol involvement, diagnosis, primary diagnosis

# Sample

- Total attendances for 2011 ~ 79,000
- 4 random weeks out of 52 (stratified for each quarter): **7.7%** sample
- 5,704 out of 79,000 attendances: **7.2%** sample

# Definition of Alcohol Involvement

- **Y** = alcohol was explicitly recorded in the clinical notes,
- **?** = description of the reason for attendance could have been associated with alcohol, but alcohol was not explicitly mentioned and the reason for attendance was not associated with an establishment where alcohol is consumed,
- **HA** = no mention of alcohol in the case notes for the attendance, but on reviewing the full medical record, the individual was noted to have had alcohol-related attendances in the past, or subsequent follow-up letters indicate that the ED attendance was related to alcohol

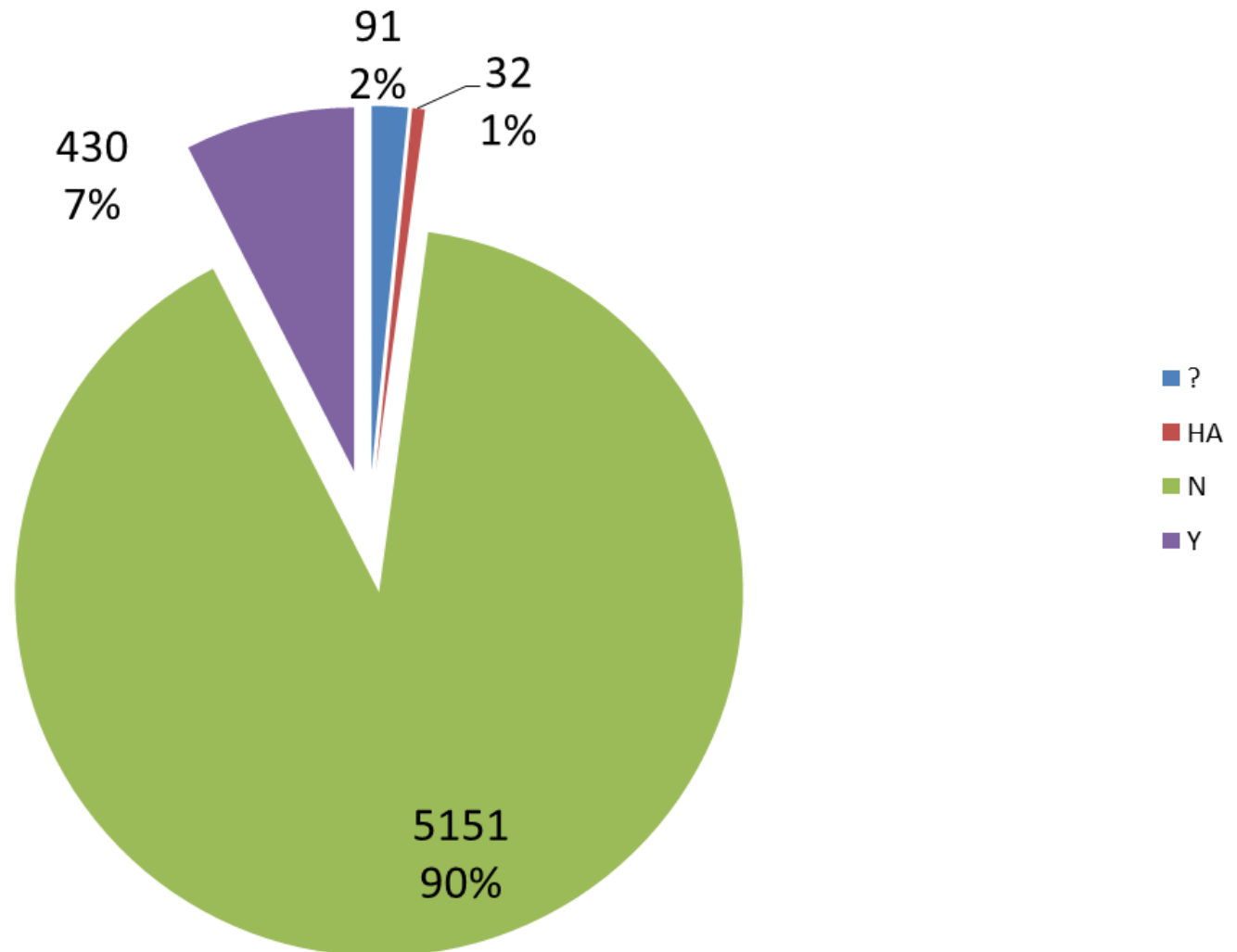
# Reliability

- Full dataset reviewed by GK to identify the involvement of alcohol and categorise the diagnosis,
- Double data extraction for 10% by TH and JC,
- Alcohol coding concordance 94%
- Diagnosis concordance 79%, but on review coding differences were resolved.



# THE BIG PICTURE

## Emergency Department Attendances (n=5,704)



# Estimated Burden

- 9.8% attendances due to alcohol (95% CI; 8.9% to 10.5%),
- Assuming an annual attendances ~79,000,
- Annual alcohol related attendances =
- **7,742** (7,031 to 8,295)



A photograph of a hospital waiting area. The room features rows of blue and green plastic chairs on a light-colored floor. In the background, there are yellow double doors, a wheelchair, and a reception desk. The ceiling has recessed lights and a ventilation grille. The text "DO THE FLAGS WORK?" is overlaid in the lower-left quadrant.

**DO THE FLAGS WORK?**

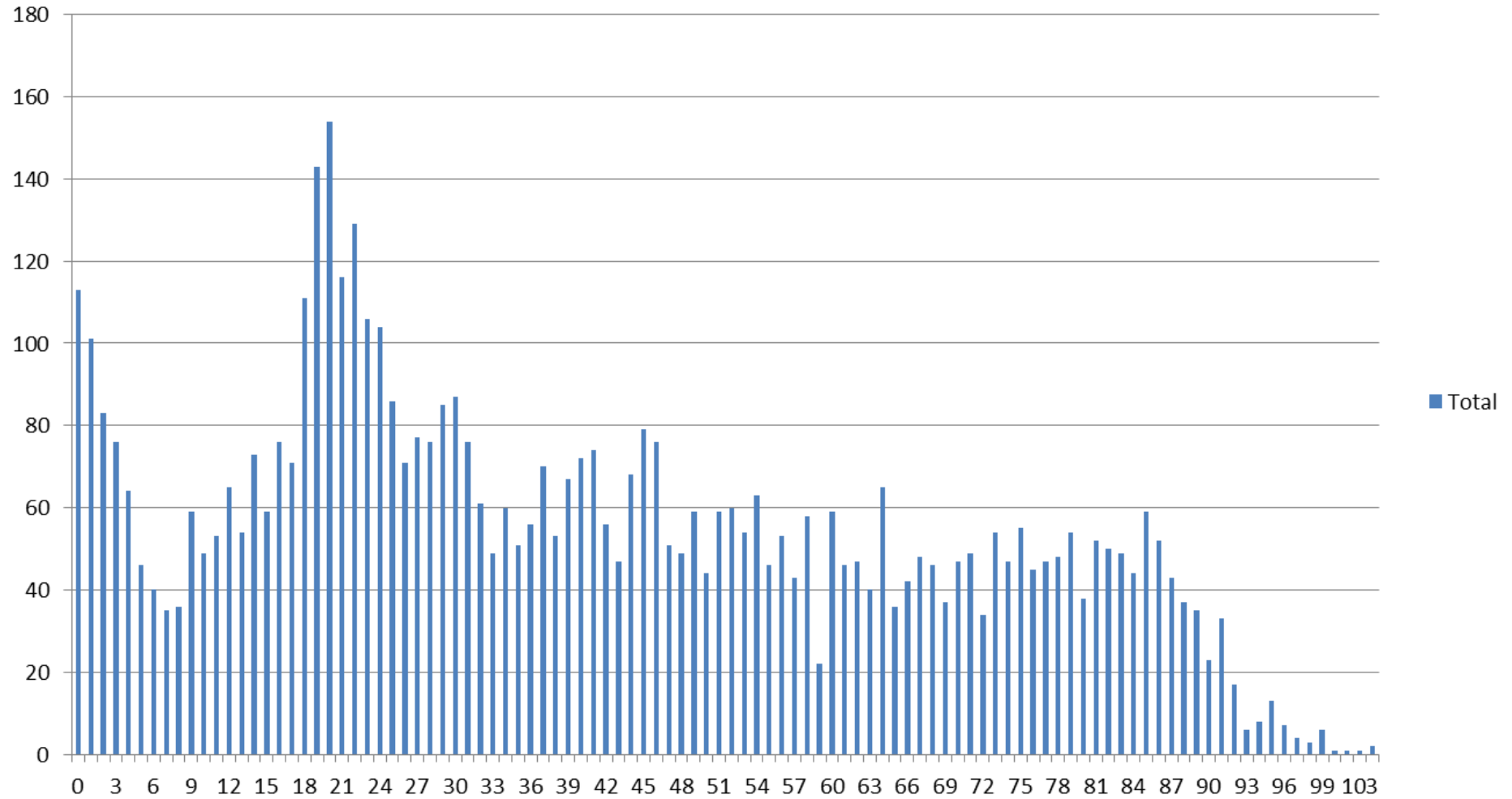
# Alcohol Flags on ED System

- For the sample period there were 46 alcohol flags on the ED system,
- We found 553 – only 8.3% “flagged” ...
- 5 of the 46 were not in our dataset!

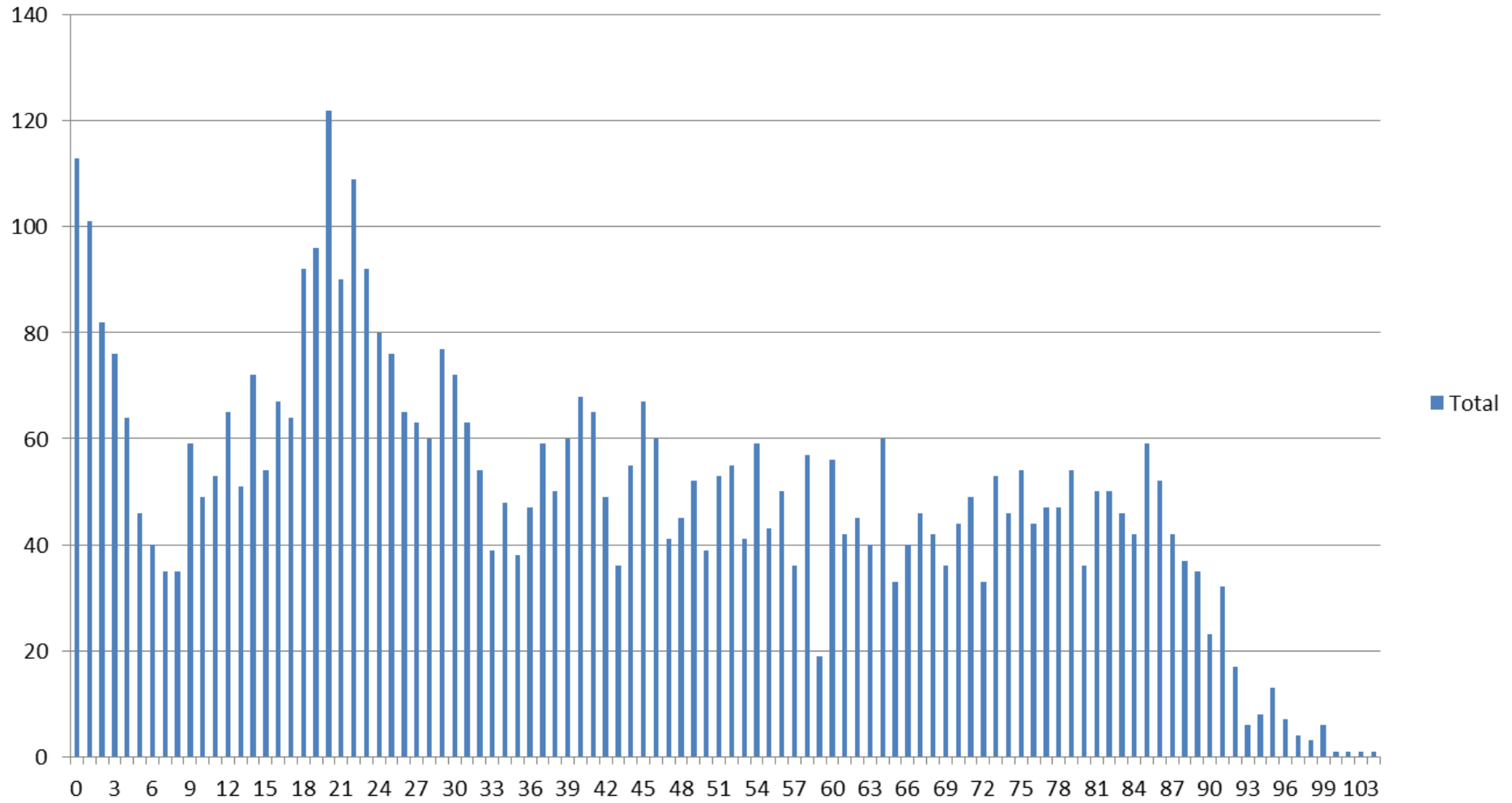
**WHO?**



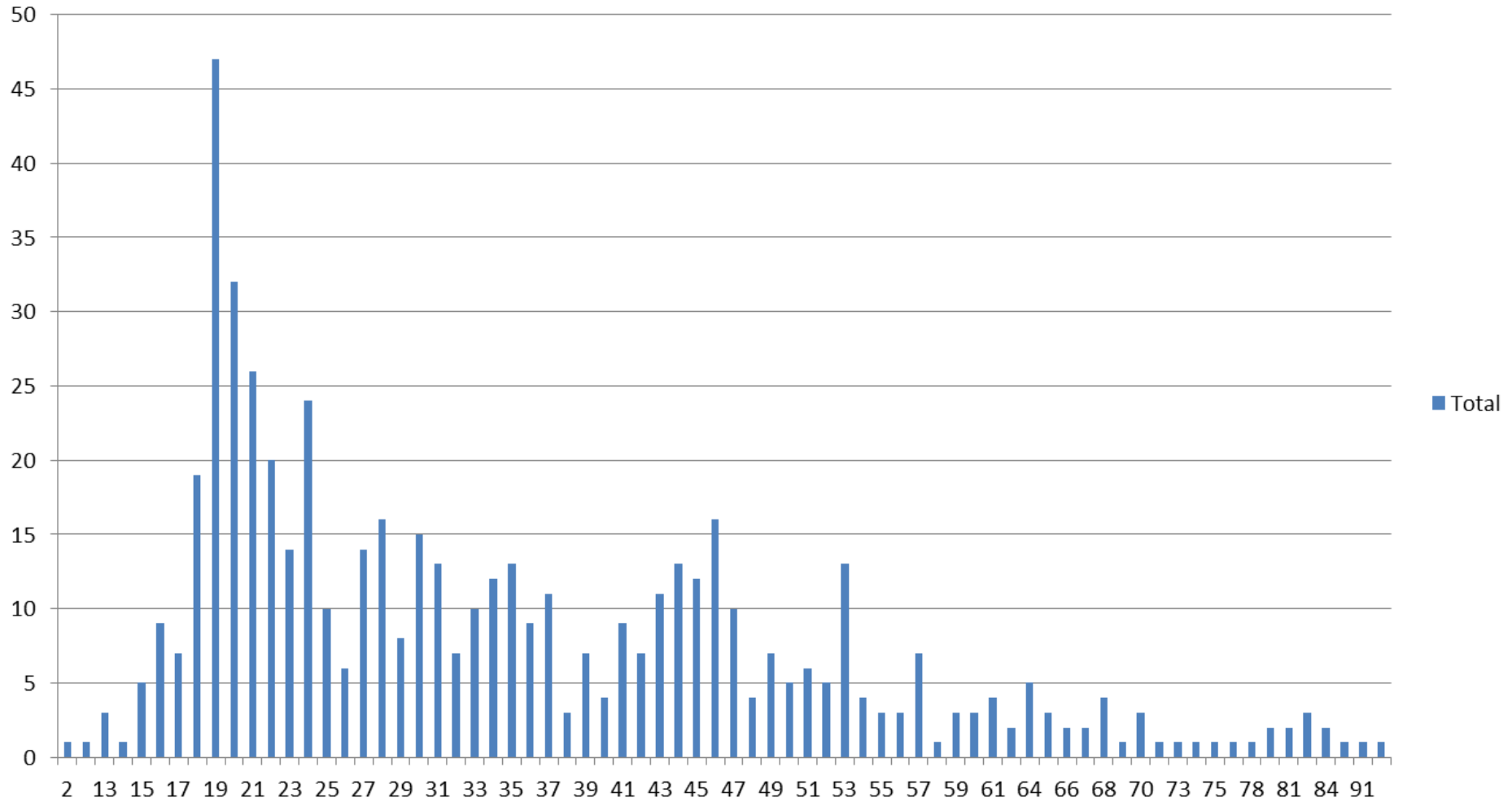
## Age Distribution: All Attendances (n=5,704)



## Age Distribution: Non-Alcohol Related (n=5,151)



## Age Distribution: Alcohol Related (n=553)



# Distribution of Age

Statistic	All Attendances (5,704)	Non-Alcohol Related (5,151)	Alcohol Related (553)
Mean	40.4 years	41.1 years	34.6 years
Standard Deviation	26.04	26.8	16.06
Range	0 to 103	0 to 103	2 to 91 years

# It's Younger People...or is it?!

## Under 30

- Total attendances = 2,411
- Due to alcohol = 263

• **10.91%**

- 95% CIs = 9.66% to 12.15%

## 30 or Over

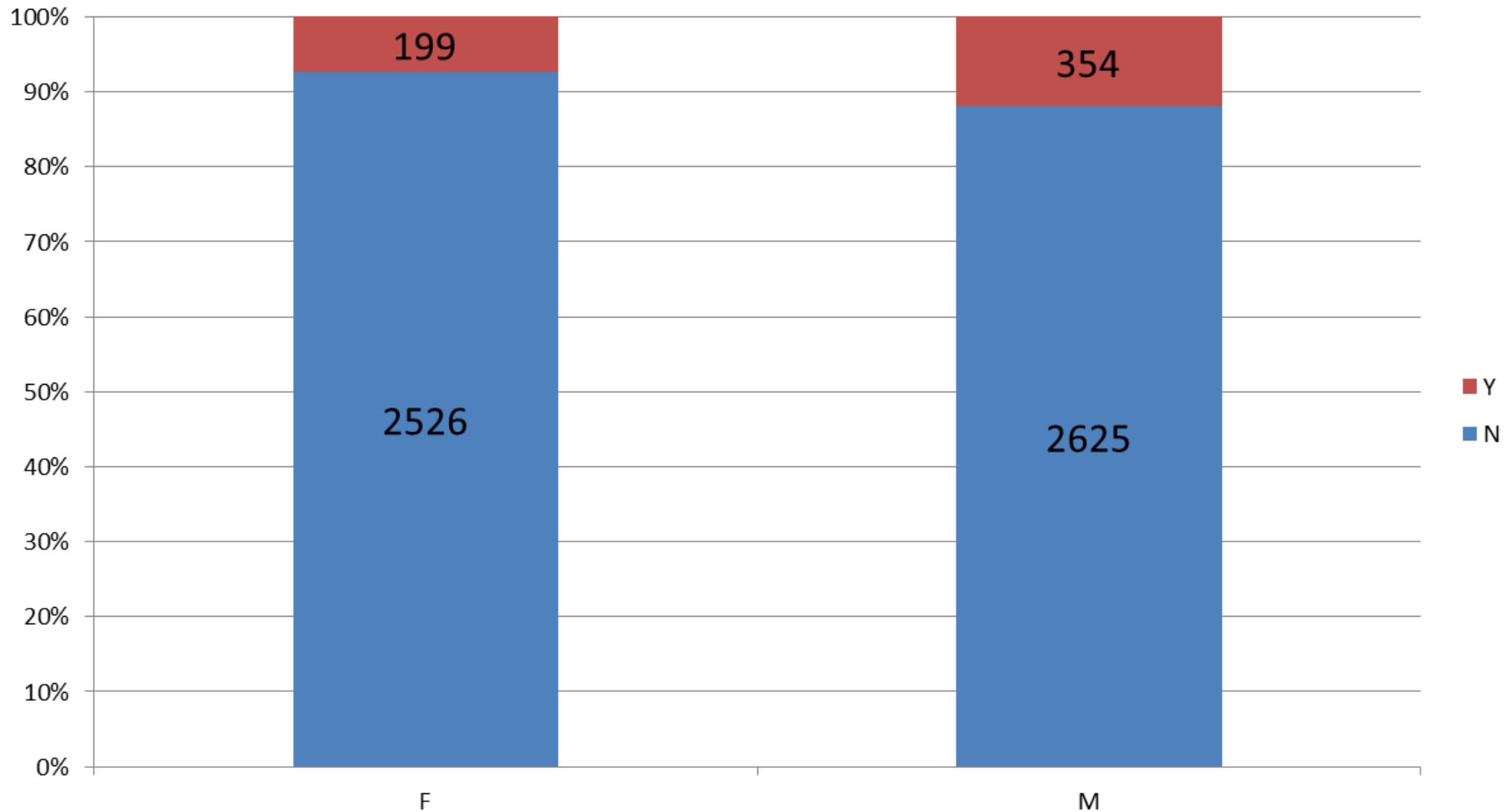
- Total attendances = 3,293
- Due to alcohol = 290

• **8.81%**

- 7.84% to 9.77%



## Gender: Proportion of All Attendances Split by Alcohol Involvement (n=5,704)



# It's All Men...

- Female attendances = 2,725
- Male attendances = 2,979
- Due to alcohol = 199
- Due to alcohol = 354

• **7.3%**

- 6.33% to 8.28%

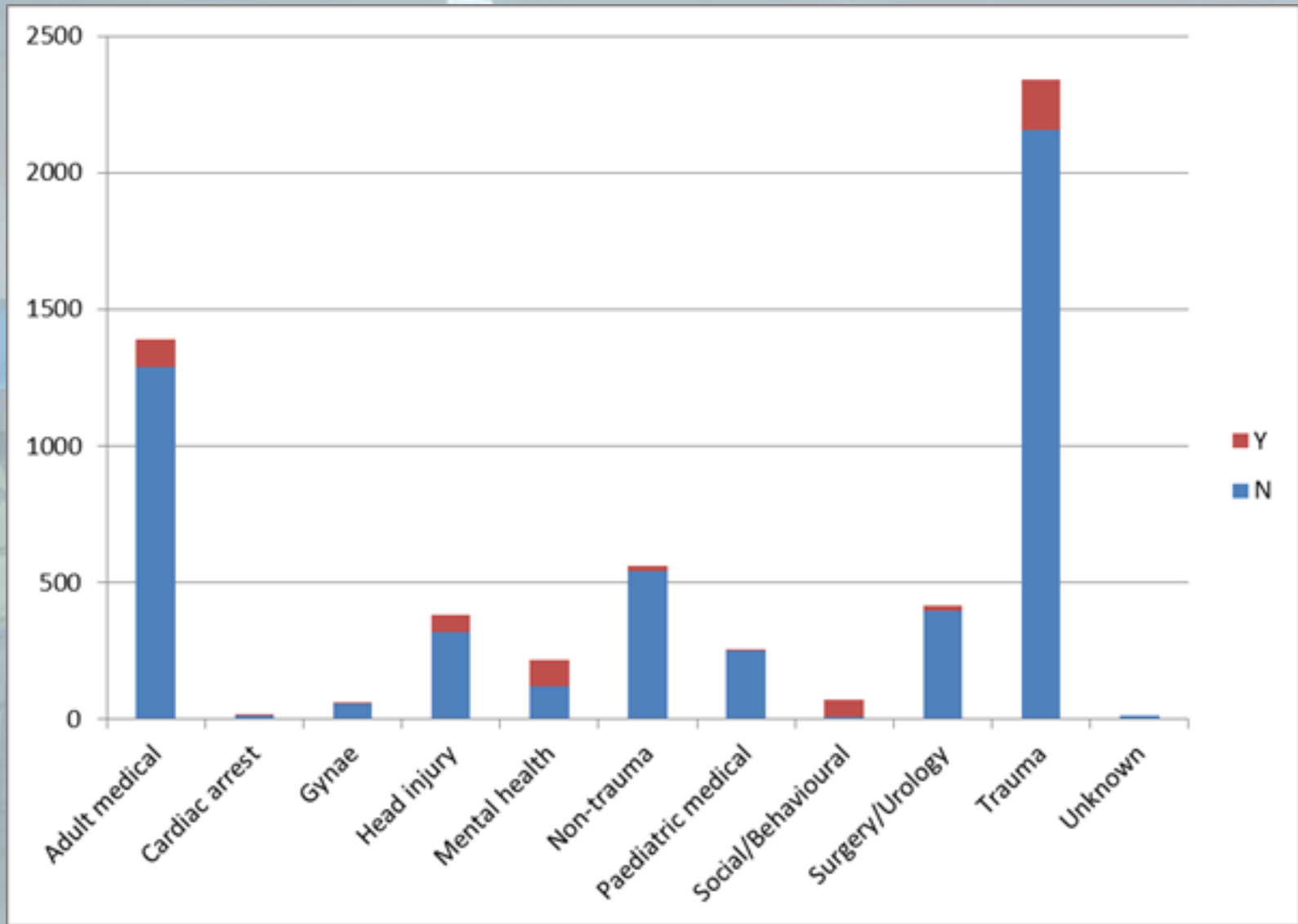
• **11.88%**

- 10.72% to 13.05%

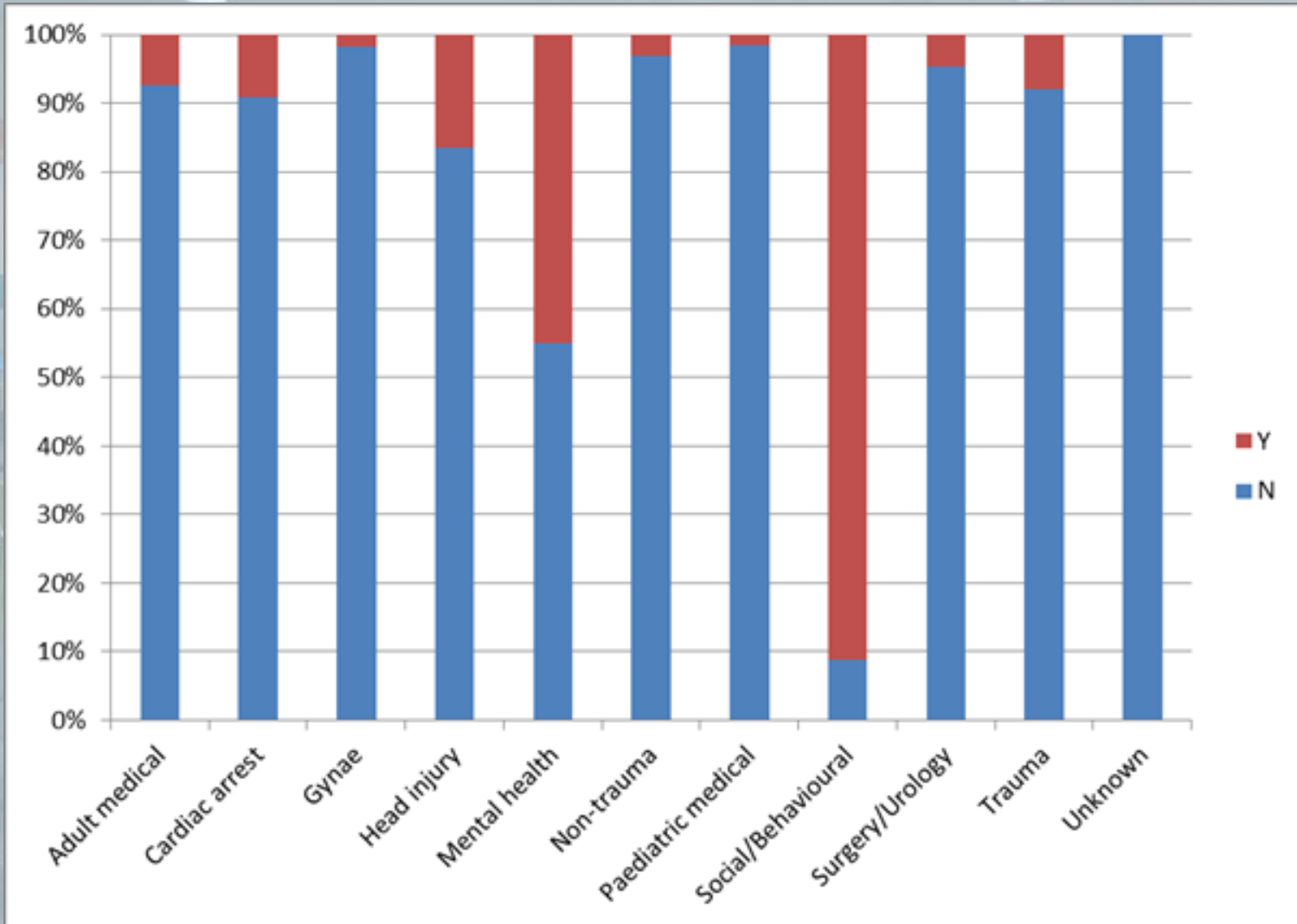


**WHAT?**

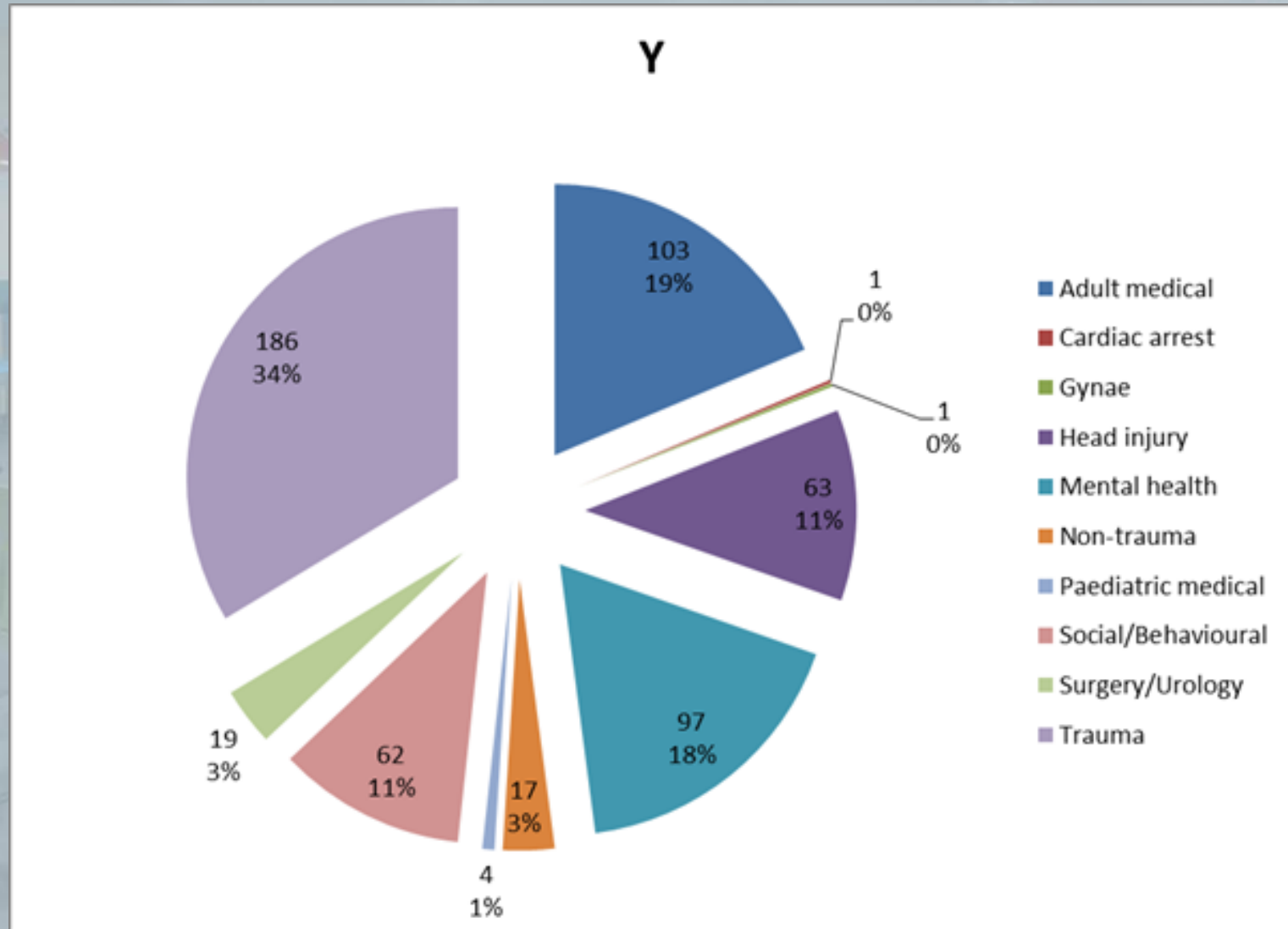
# Number of Diagnoses (n=5,704)



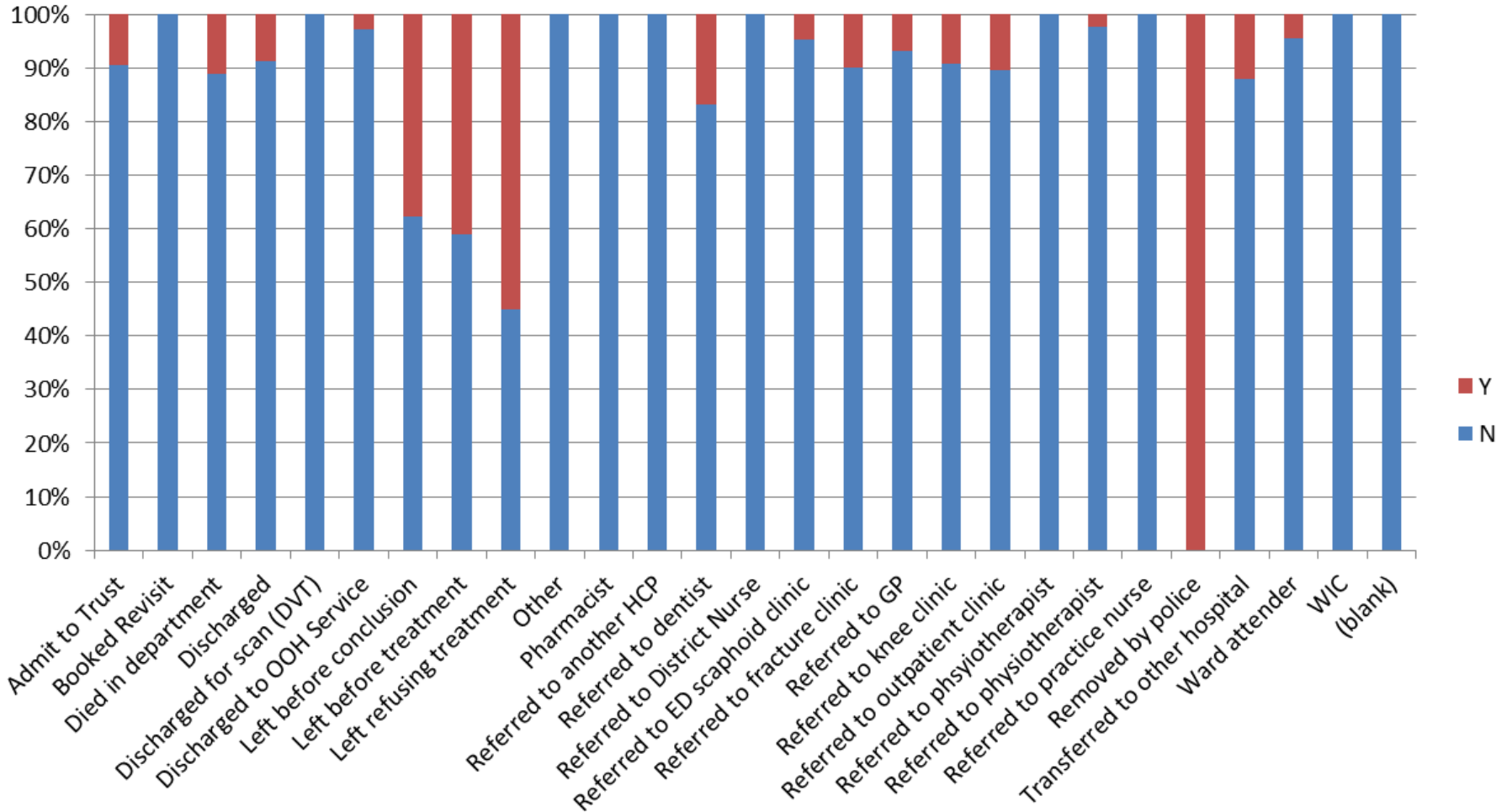
# Proportion of Diagnoses (n=5,704)



# Alcohol Related Diagnoses (n=553)

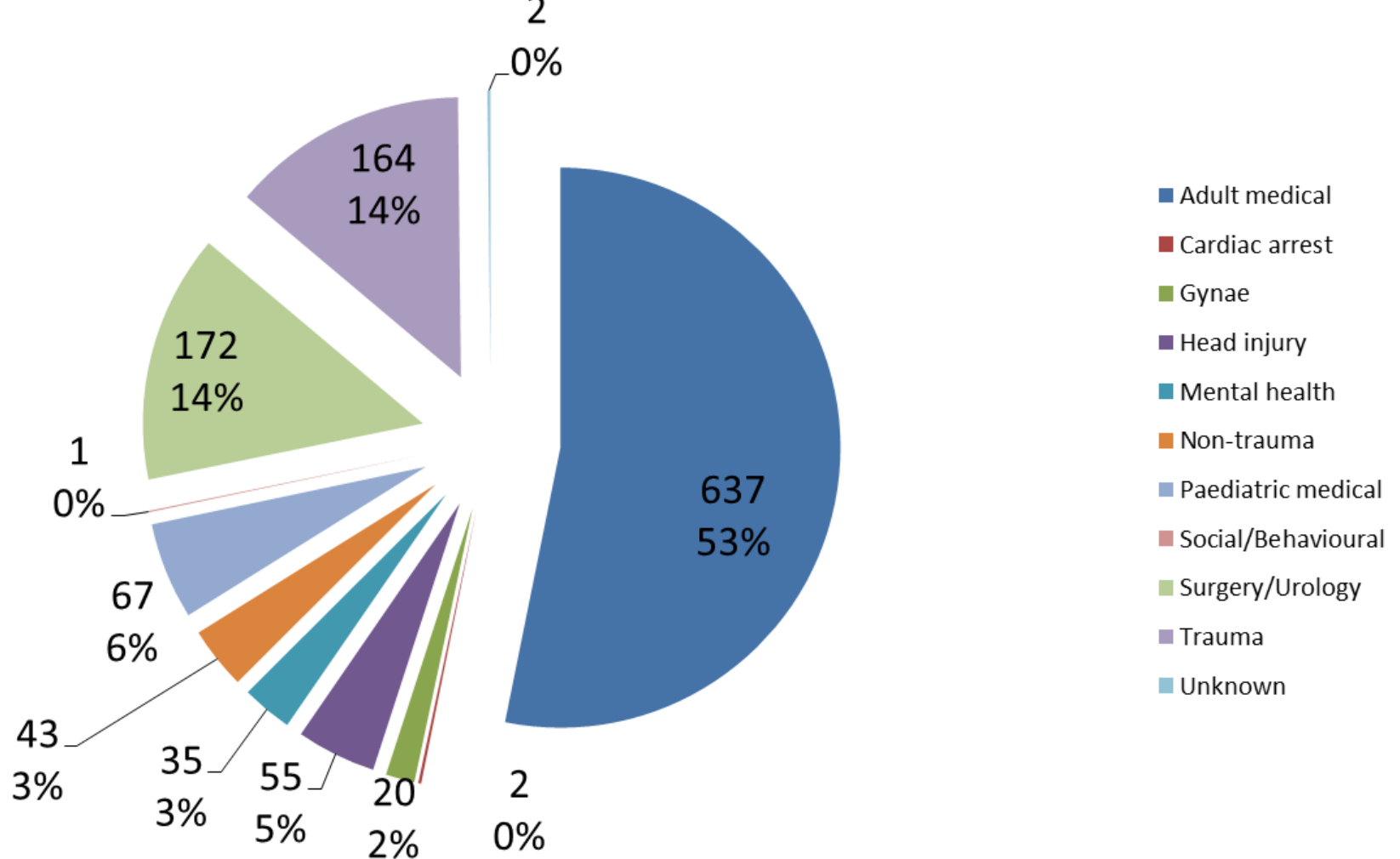


## Proportion of Discharges Split by Alcohol Involvement (n=5,704)



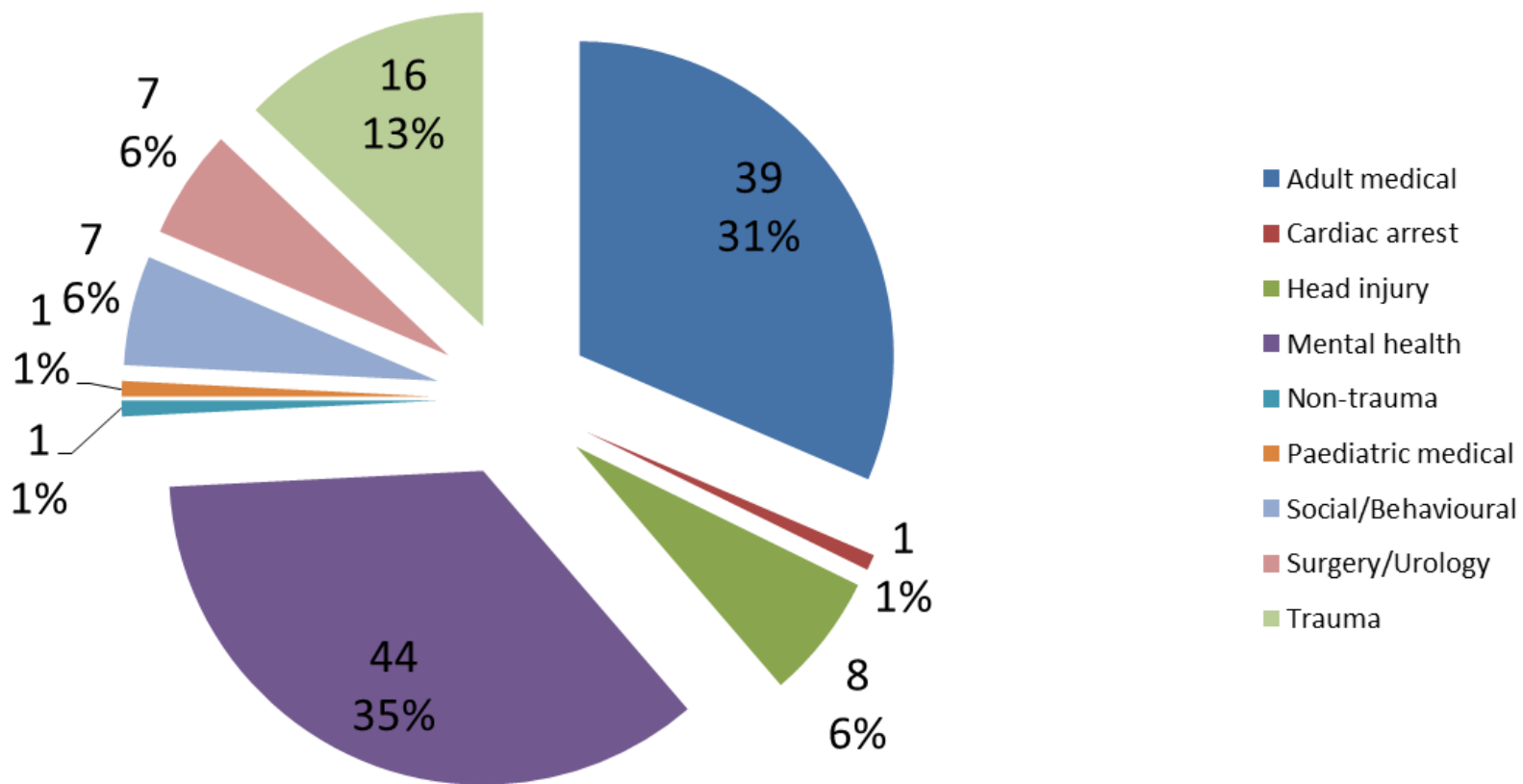
# Diagnosis Code for Trust Admissions Not Involving Alcohol

(n=1,198)





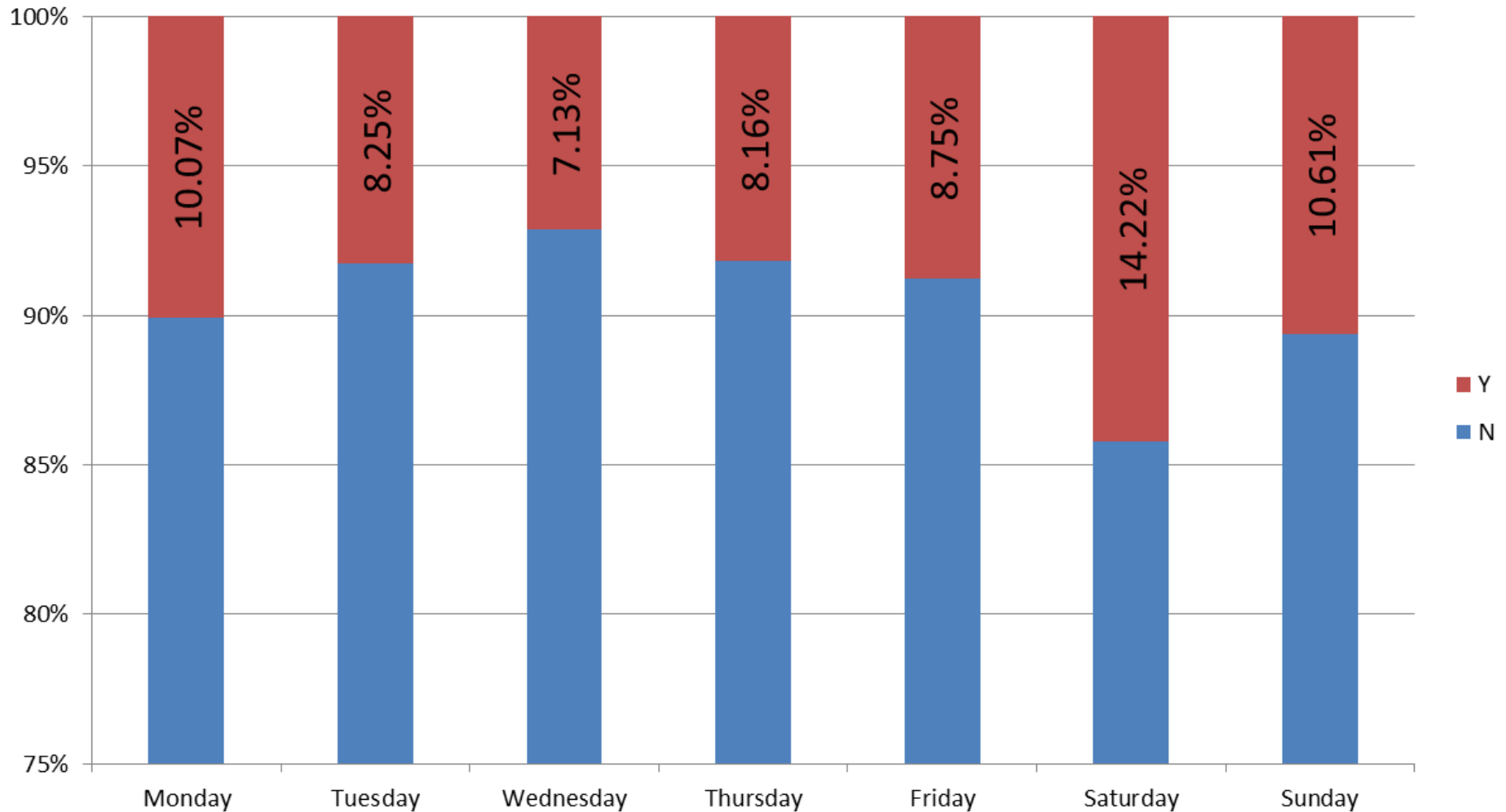
## Diagnosis Code for Trust Admissions Involving Alcohol (n=124)



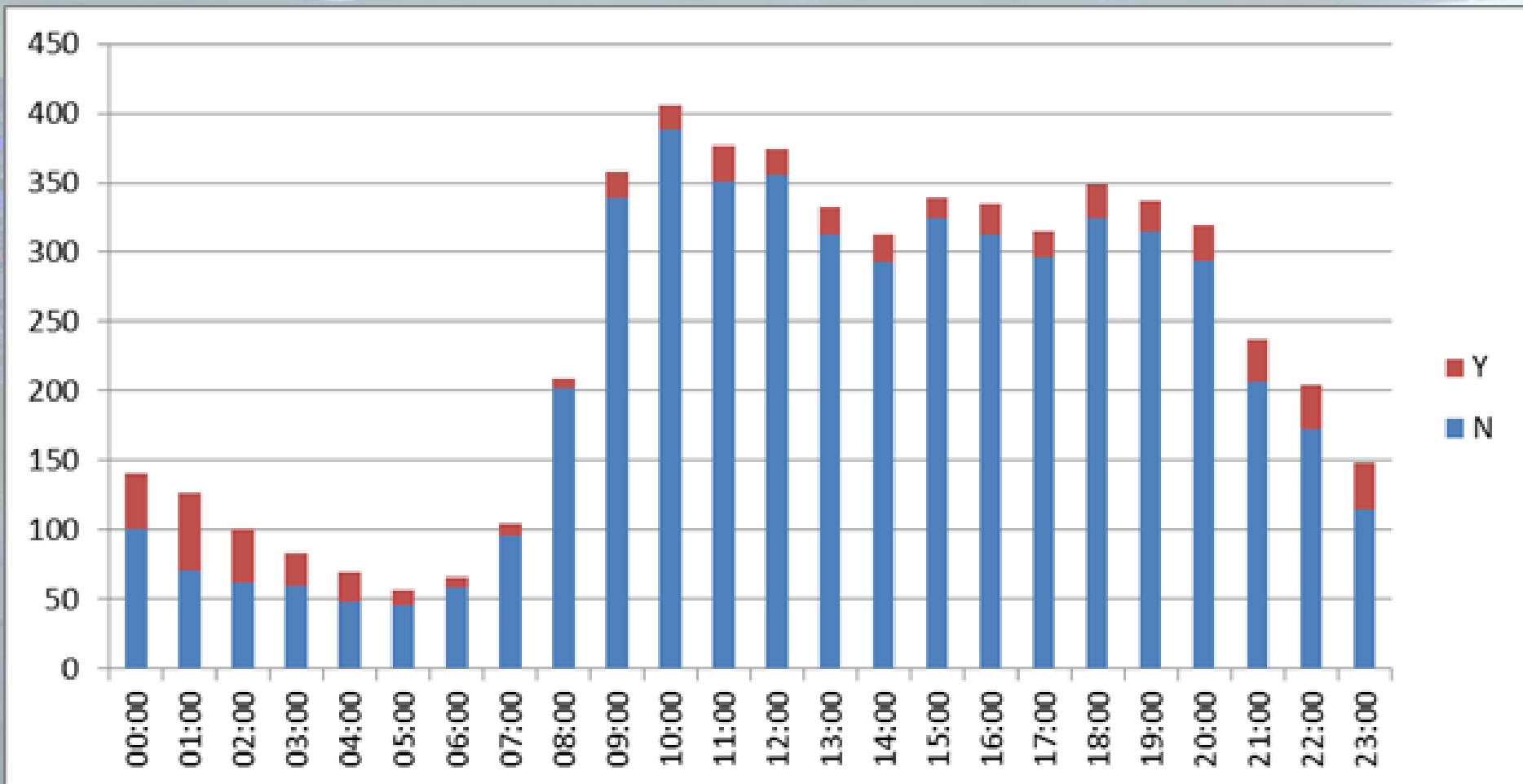
**WHEN?**



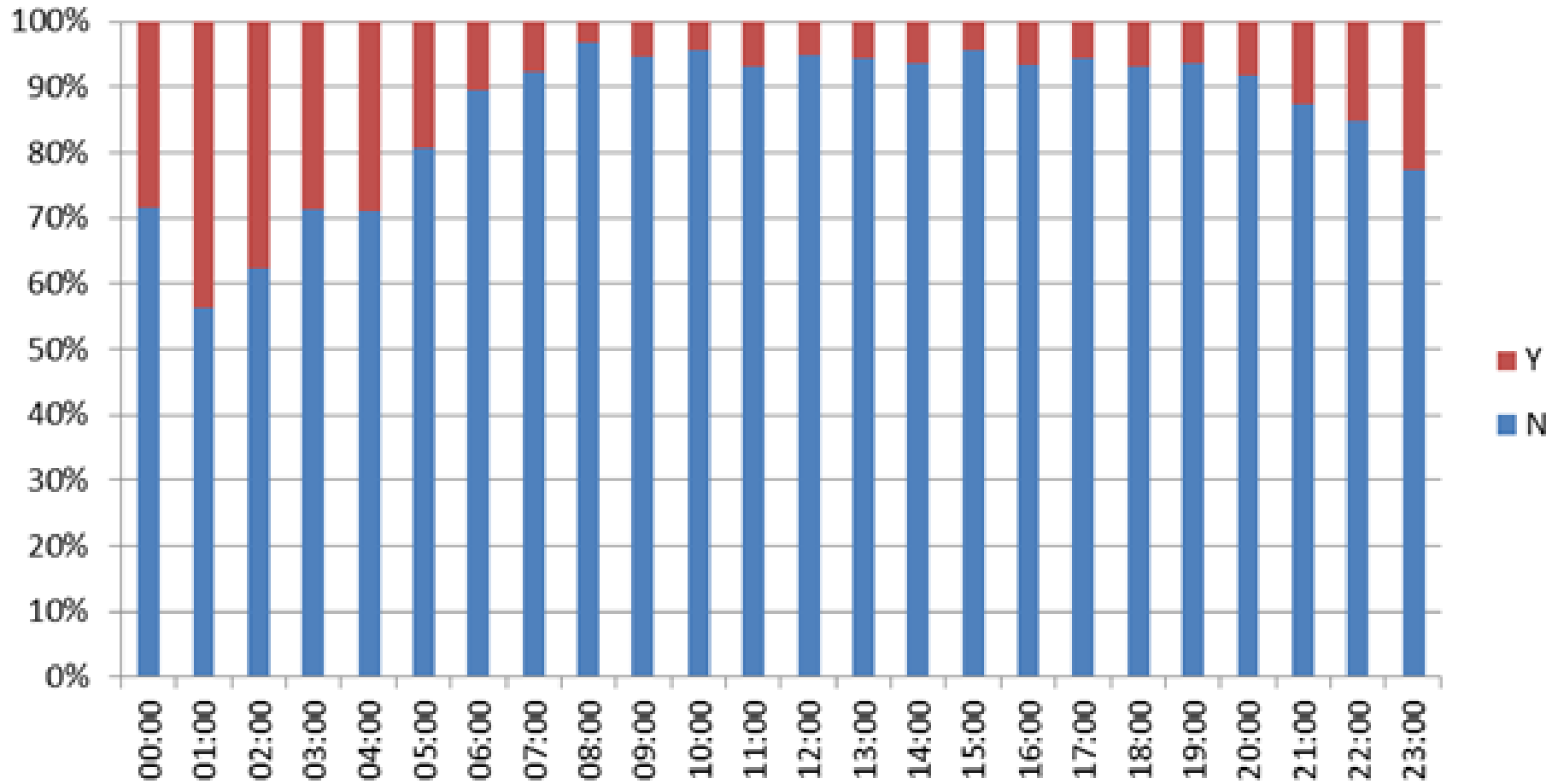
## Day of the Week: Proportion of All Attendances Split by Alcohol Involvement (n=5,704)



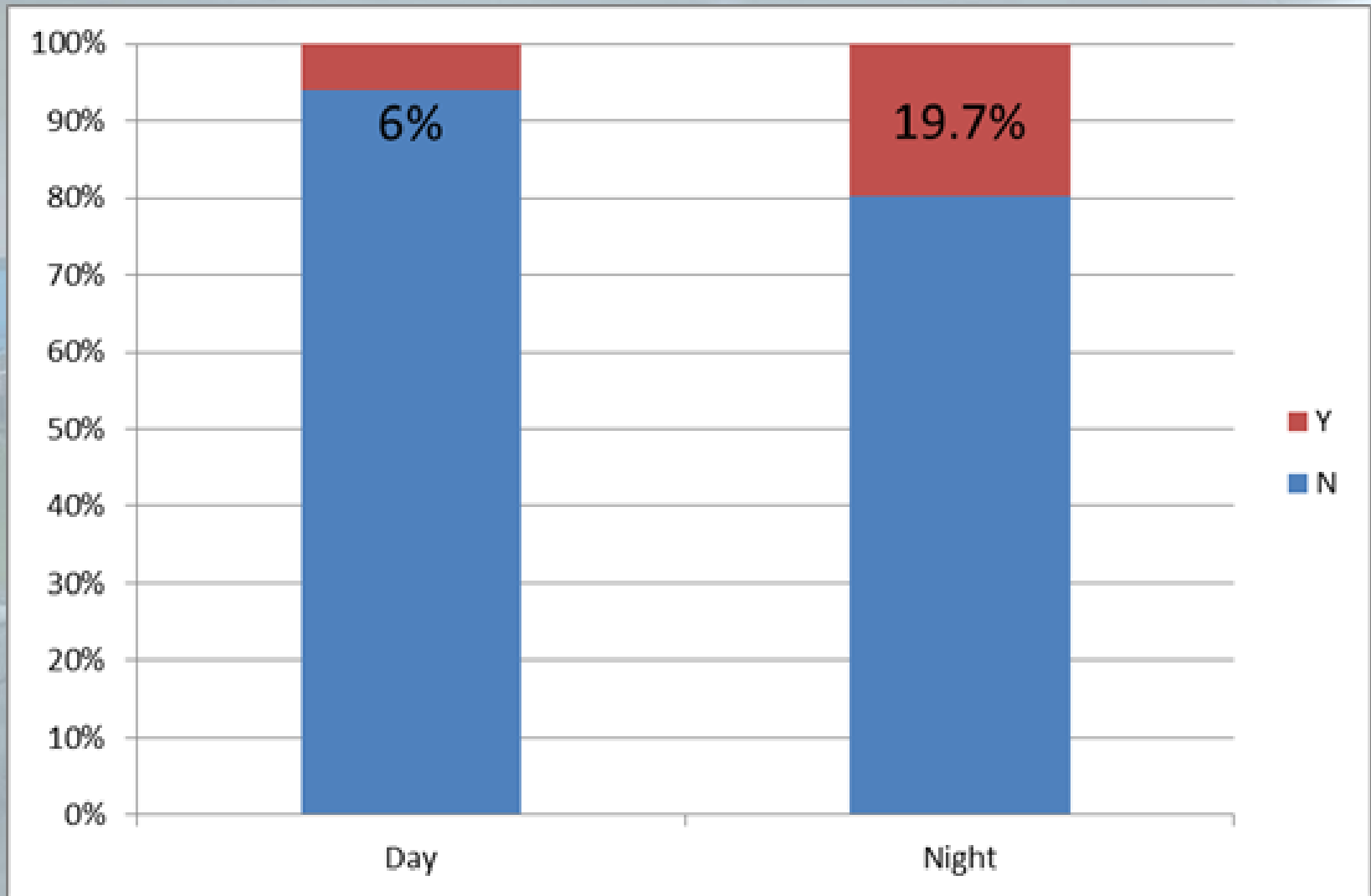
# Hour of Attendance (n=5,704)



# Proportion of Alcohol Related Attendances per Hour (n=5,704)



# Attendances: Day (9am-9pm) vs. Night (9pm-9am) n=5,704

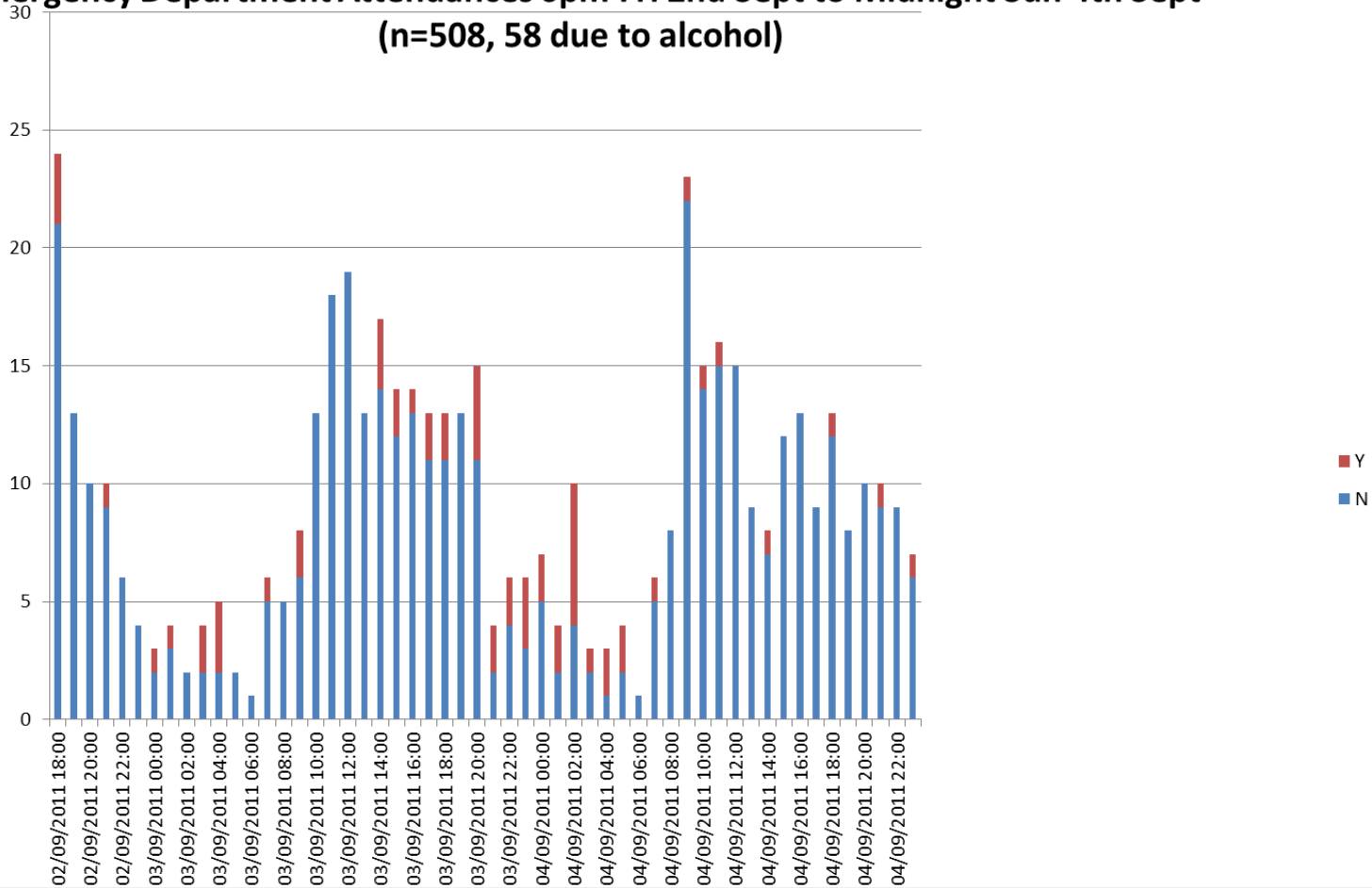


# Attendances: Day (9am-9pm) vs. Night (9pm-9am) n=5,704

	N	Y	Grand Total	Proportion
Day	3914	249	4163	5.98
Night	1237	304	1541	19.73
Grand Total	5151	553	5704	9.69

# Example of a Weekend

Emergency Department Attendances 6pm Fri 2nd Sept to Midnight Sun 4th Sept  
(n=508, 58 due to alcohol)

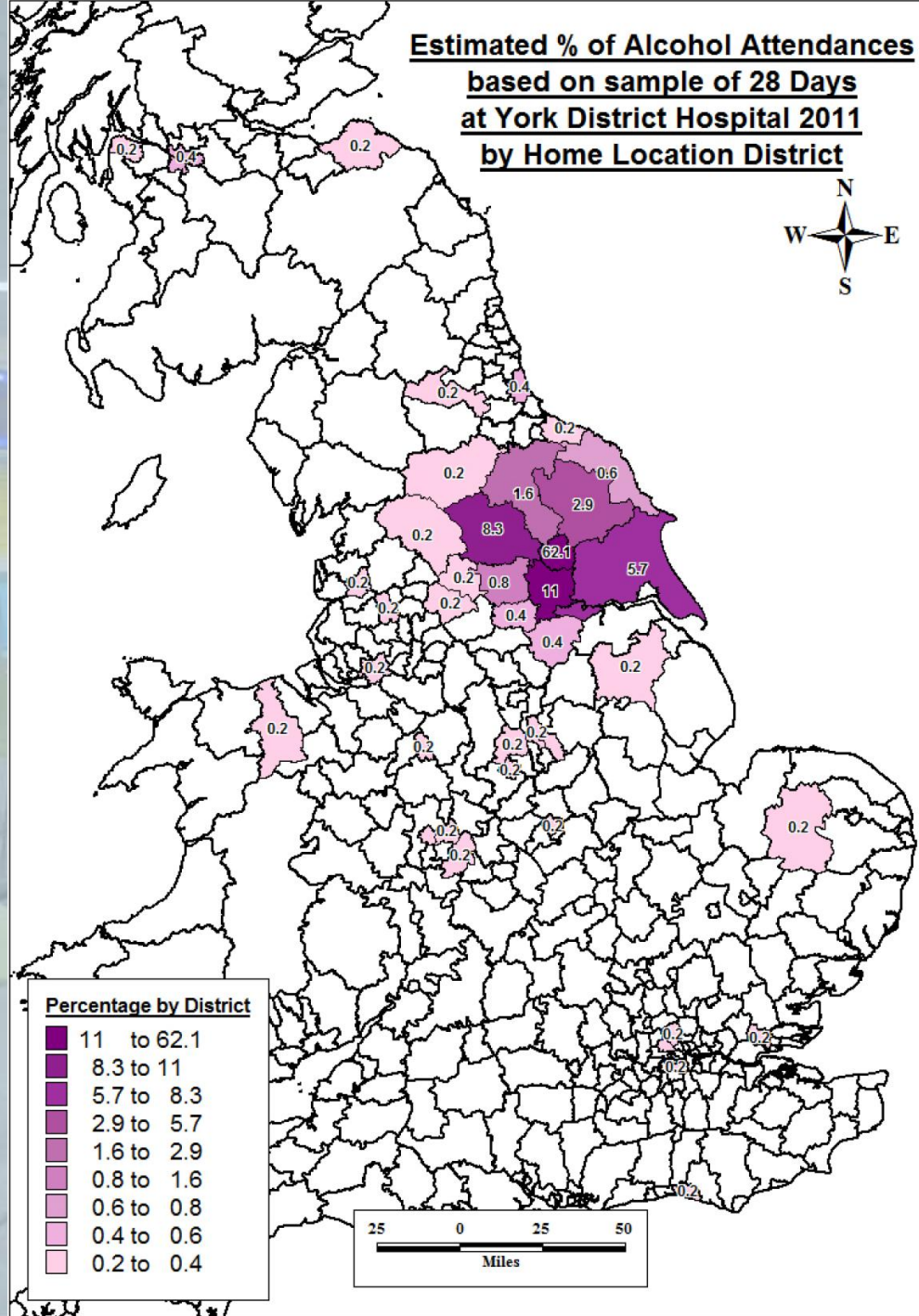




**WHERE?**

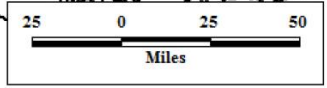


**Estimated % of Alcohol Attendances  
based on sample of 28 Days  
at York District Hospital 2011  
by Home Location District**

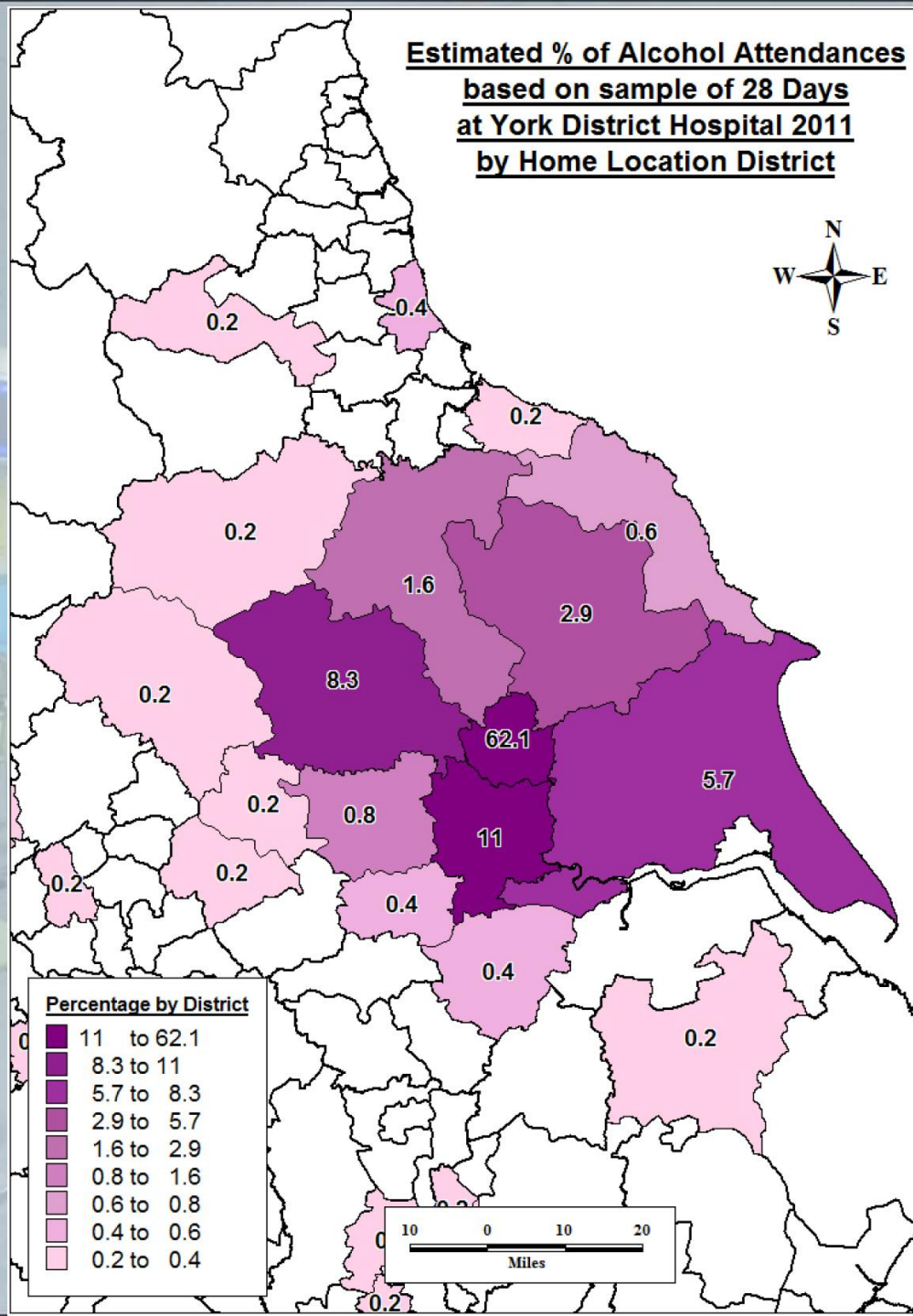


**Percentage by District**

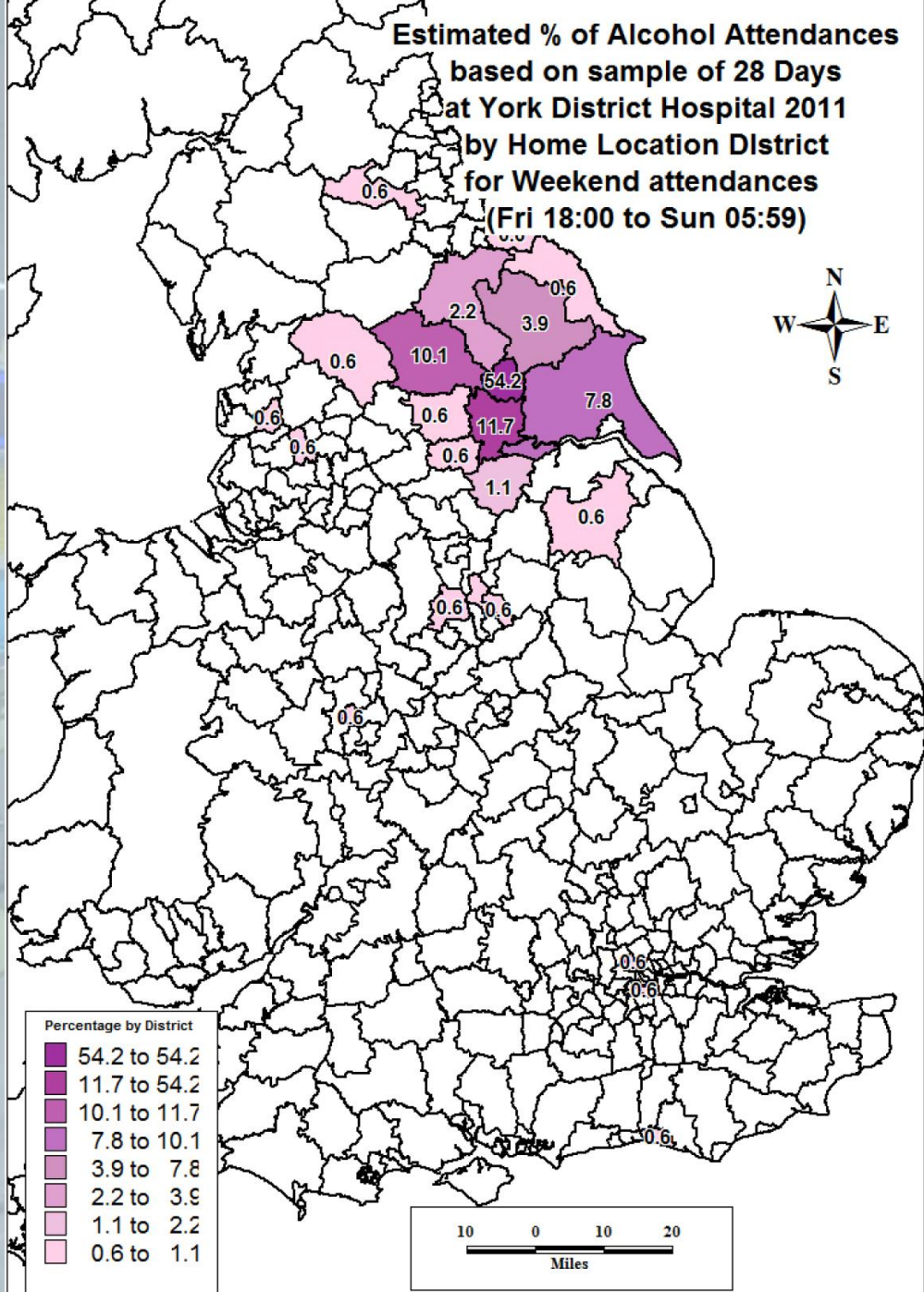
11 to 62.1
8.3 to 11
5.7 to 8.3
2.9 to 5.7
1.6 to 2.9
0.8 to 1.6
0.6 to 0.8
0.4 to 0.6
0.2 to 0.4



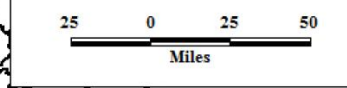
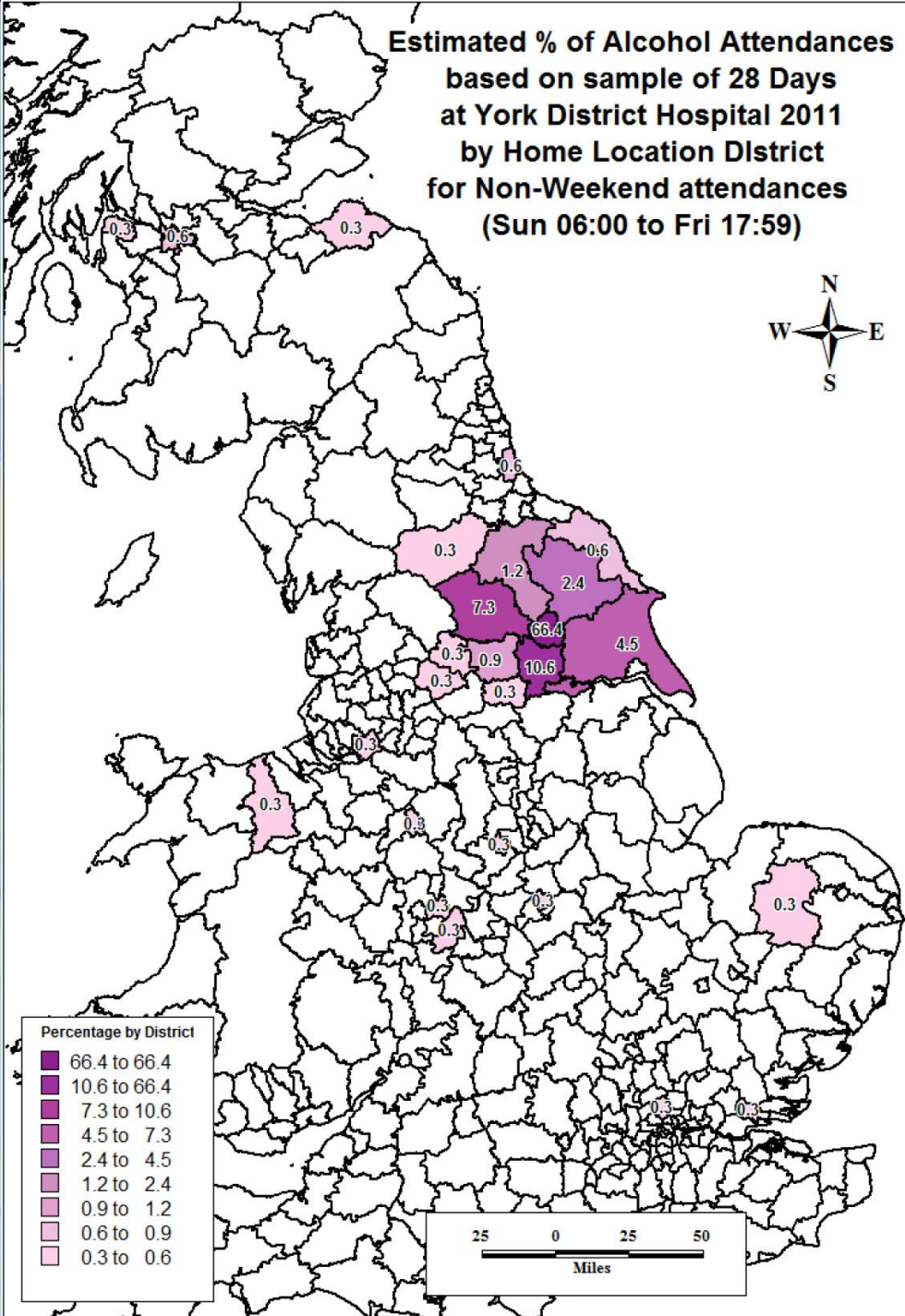
**Estimated % of Alcohol Attendances  
based on sample of 28 Days  
at York District Hospital 2011  
by Home Location District**



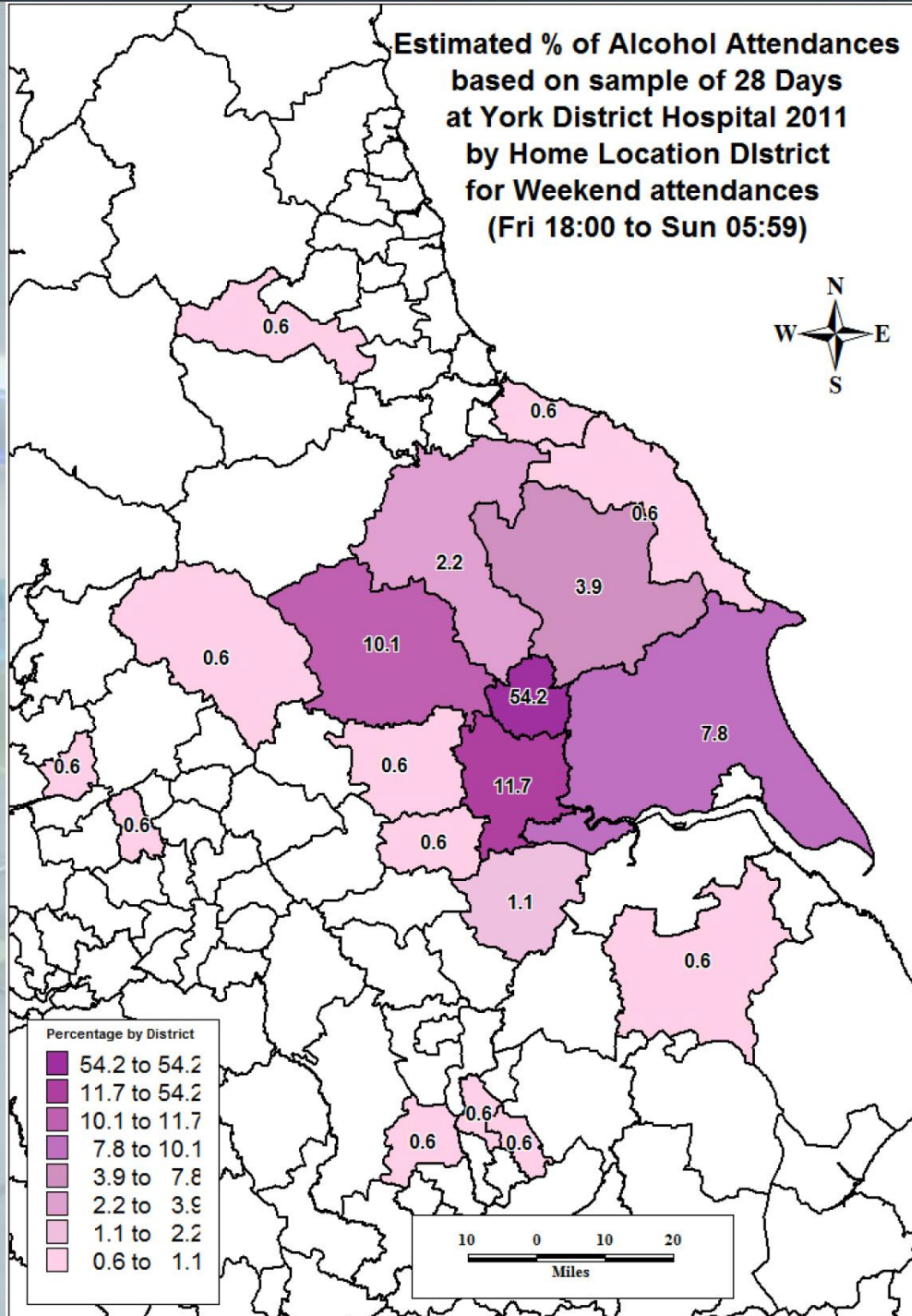
**Estimated % of Alcohol Attendances  
based on sample of 28 Days  
at York District Hospital 2011  
by Home Location District  
for Weekend attendances  
(Fri 18:00 to Sun 05:59)**



**Estimated % of Alcohol Attendances  
based on sample of 28 Days  
at York District Hospital 2011  
by Home Location District  
for Non-Weekend attendances  
(Sun 06:00 to Fri 17:59)**

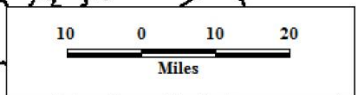


**Estimated % of Alcohol Attendances based on sample of 28 Days at York District Hospital 2011 by Home Location District for Weekend attendances (Fri 18:00 to Sun 05:59)**

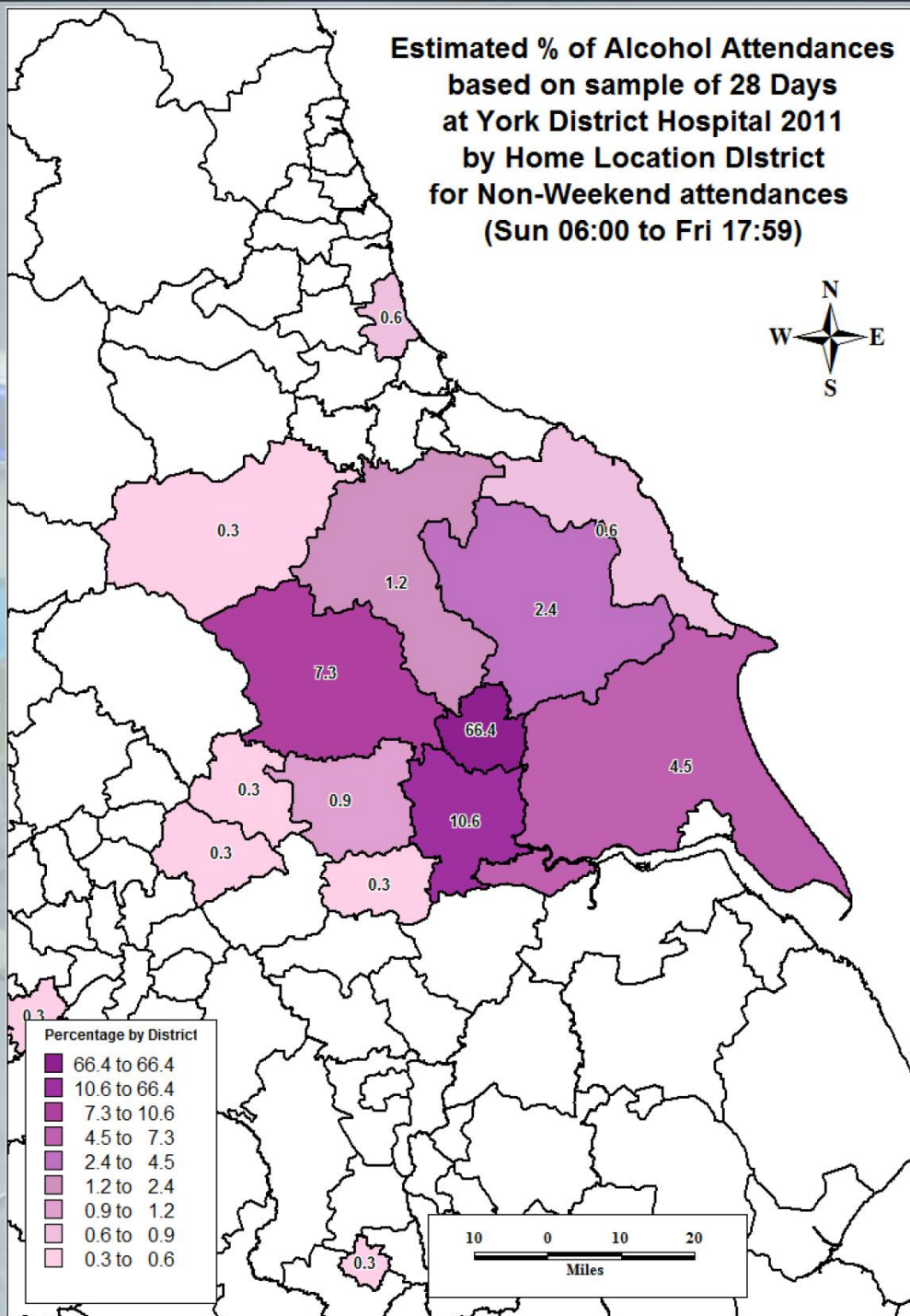


Percentage by District

54.2 to 54.2
11.7 to 54.2
10.1 to 11.7
7.8 to 10.1
3.9 to 7.8
2.2 to 3.9
1.1 to 2.2
0.6 to 1.1



**Estimated % of Alcohol Attendances  
based on sample of 28 Days  
at York District Hospital 2011  
by Home Location District  
for Non-Weekend attendances  
(Sun 06:00 to Fri 17:59)**



# Alcohol Attendances from York

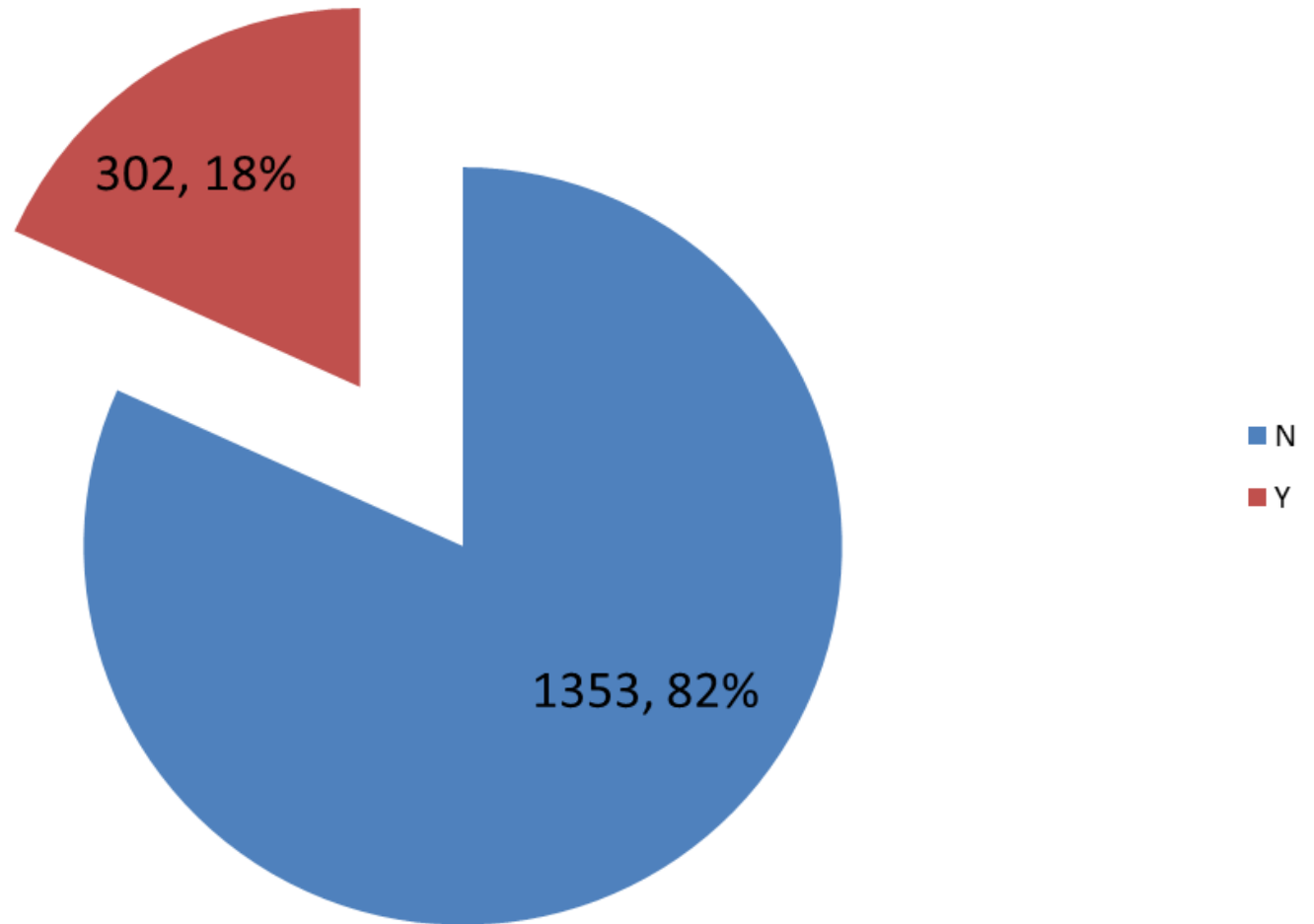
- All days:
  - **62.1%** (95% CI; 57.9% to 66.3%)
- Week days:
  - **66.4%** (61.3% to 71.5%)
- Weekends:
  - **54.2%** (46.9% to 61.5%)



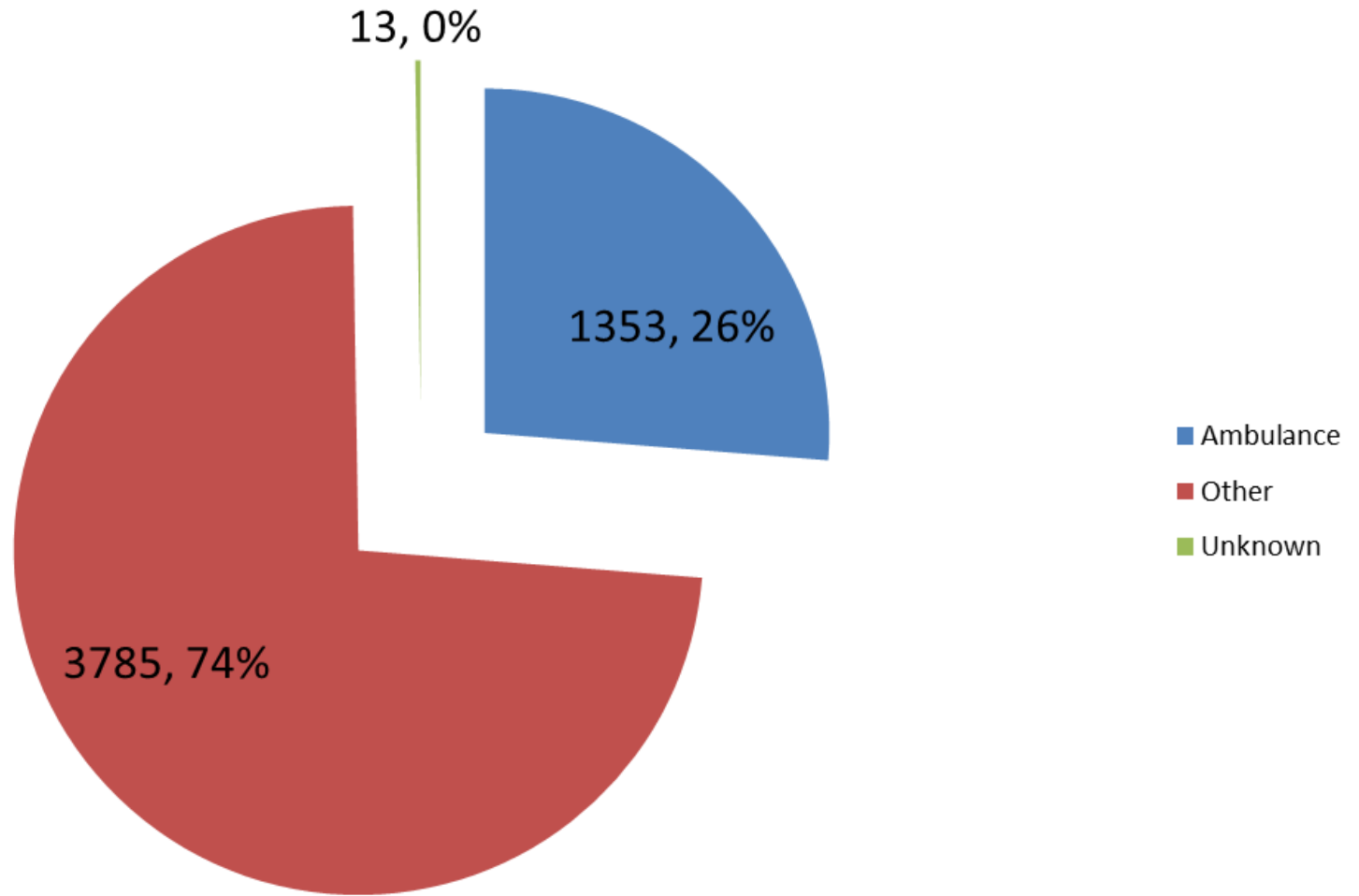


**HOW?**

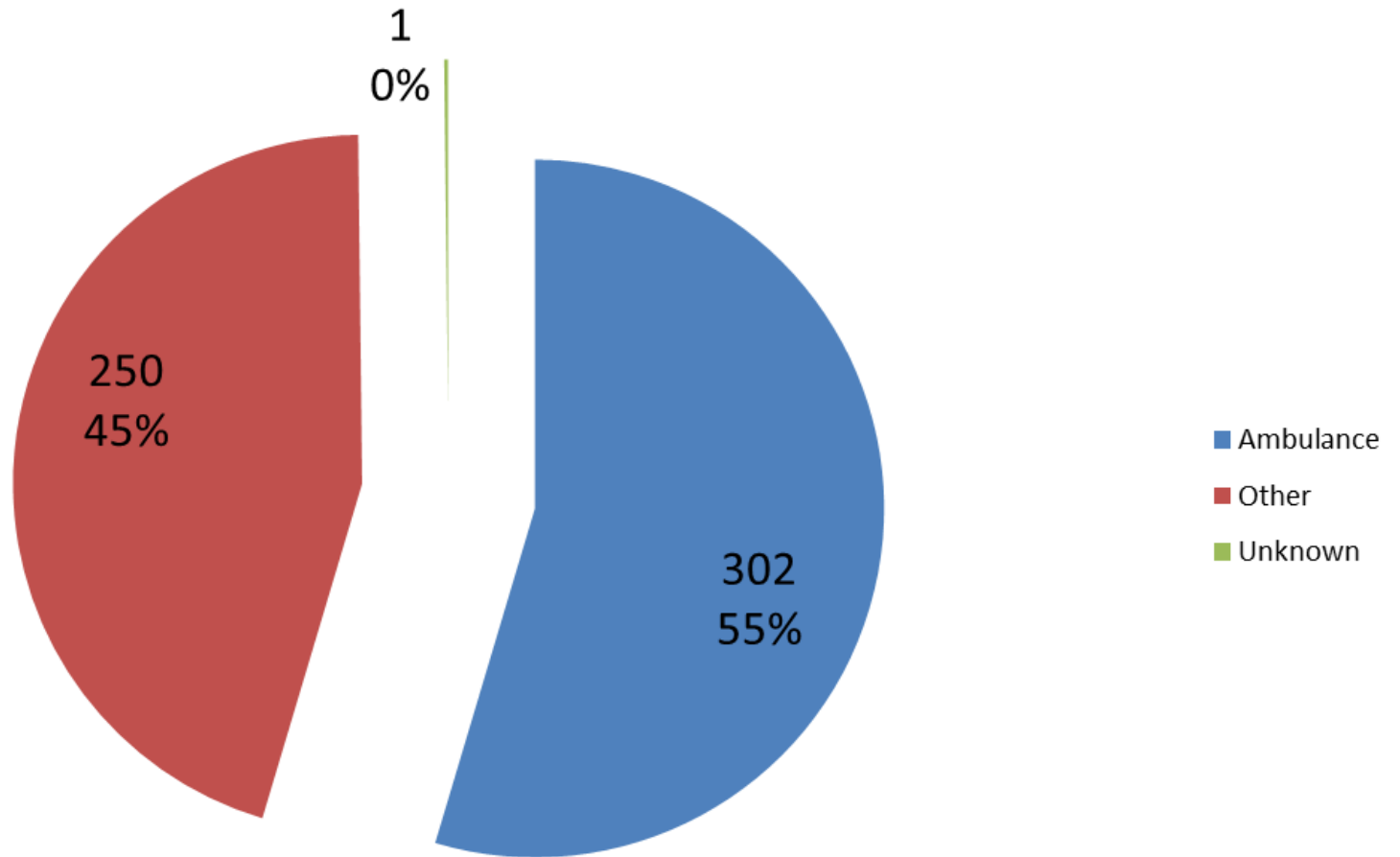
## Arrivals to ED by Ambulance (n=1,655)



## Non-Alcohol Related Arrival to ED (n=5,151)



## Alcohol Related Arrival to ED (n=553)



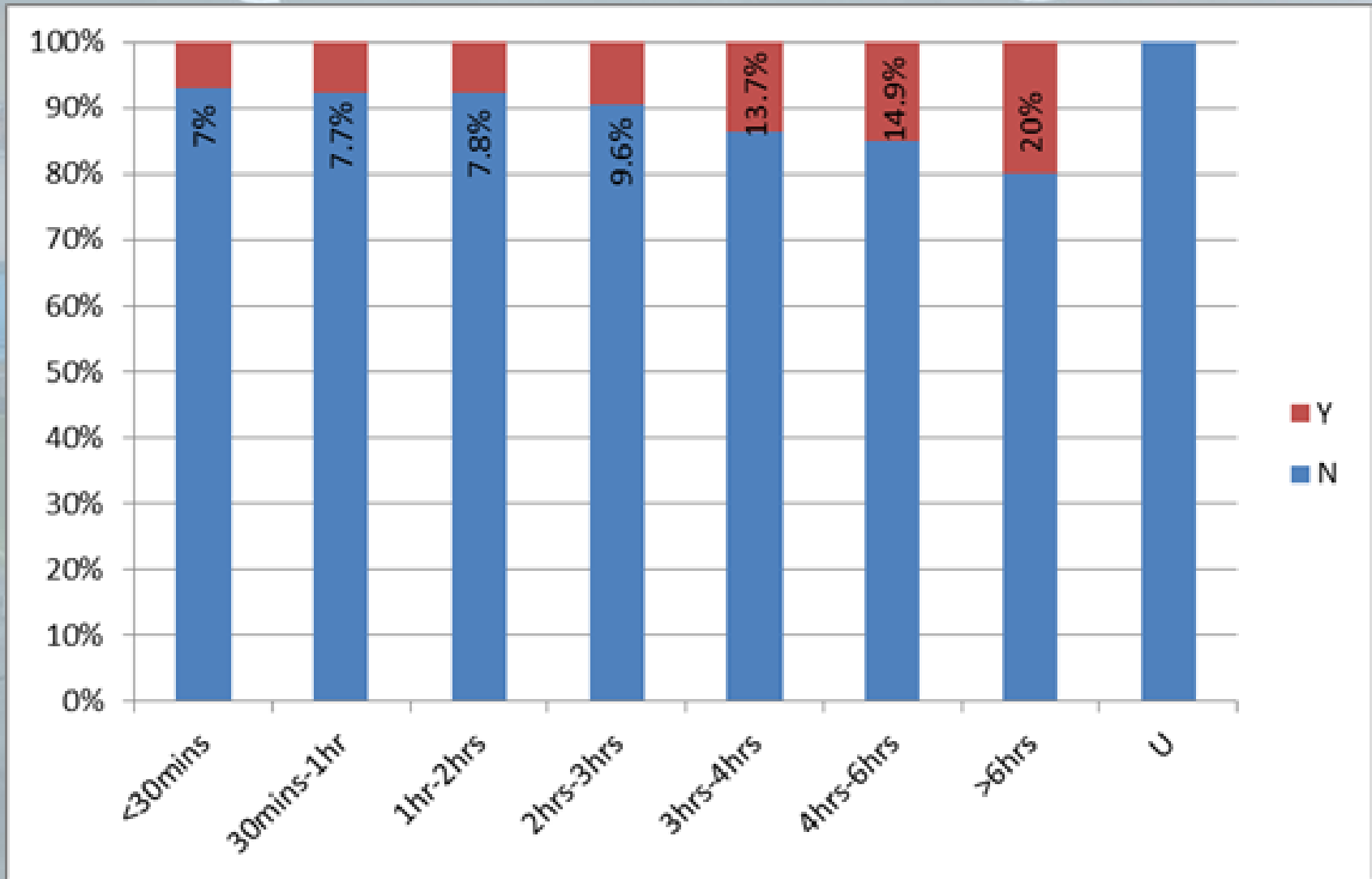
# Compare the Two

- Alcohol related arrivals to ED
  - 54.6% arrive by ambulance (95% CI **50.85%** to **59.15%**)
- Non-alcohol related arrivals to ED
  - 26.27% arrive by ambulance (**25.06%** to **27.47%**)

A photograph of a hospital waiting area. The room features rows of blue and green plastic chairs on metal frames. A wheelchair is parked in the center. The walls are light-colored with various posters and a television. A reception desk is visible on the right side. The floor is a light, polished material.

**HOW MUCH?!**

# Proportion of Time in the Department (n=5,704)



# How the ED is Paid

- By unit of activity
- Tariffs range from £5 (triage only) to £235 for patients requiring maximum treatments and investigation
- Based on our coding of investigations done and diagnoses made
- Problems determining the exact investigations which attract the higher payment

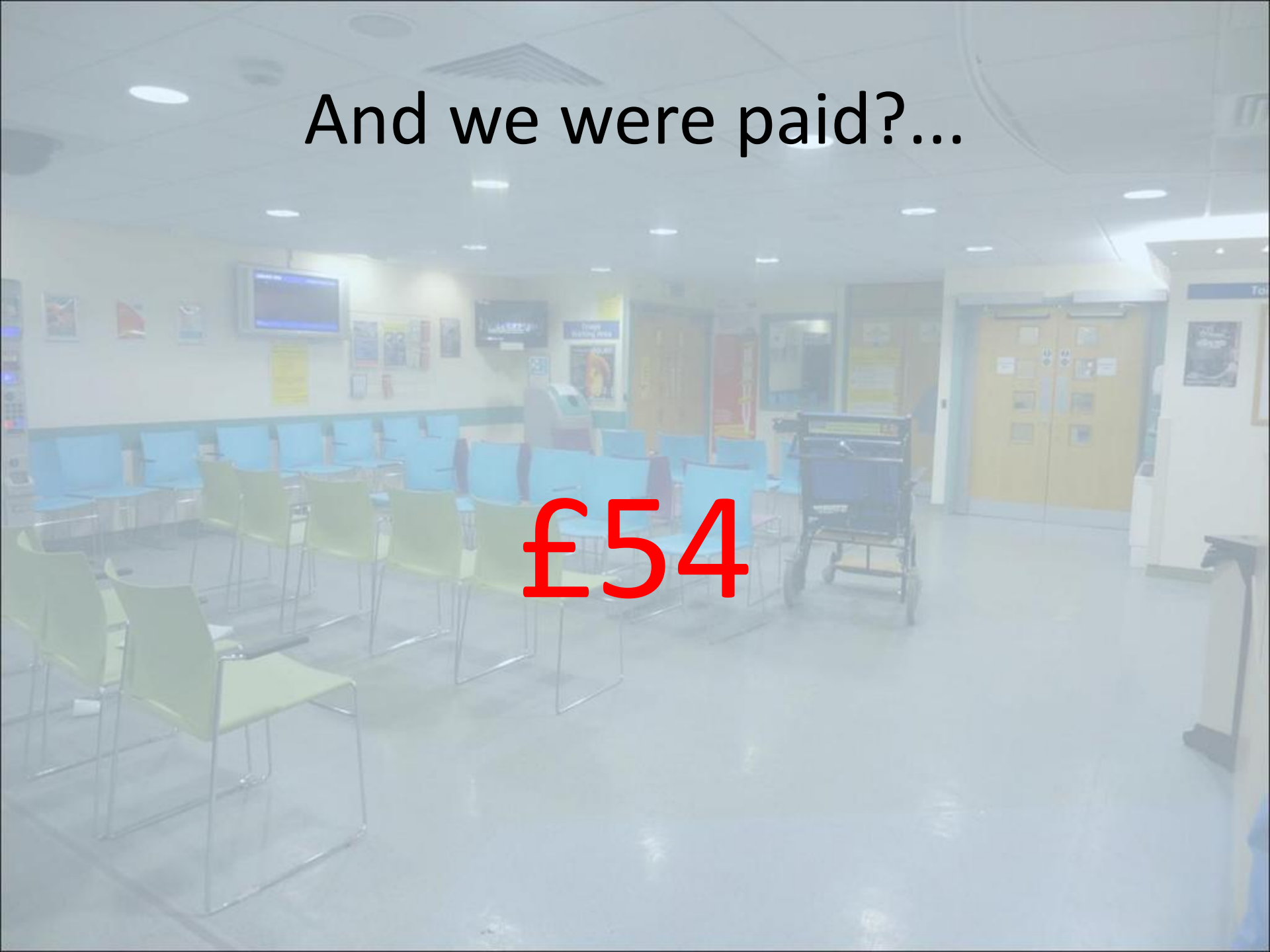


# Example

- 29 yr old male
- Brought by ambulance as too drunk to speak never mind stand up
- Asleep in a cubicle for 2 hours
- Further 2 hours till sober enough to stand up – 2 security men in the meantime to stop him standing and falling over
- Finally able to stand when needs to pass urine
- Too drunk to fill bottle – urine fills cubicle, including around my shoes
- Has money and keys for accommodation
- Finally leaves after 5 hours of good-natured abuse, multiple observations, security presence, ambulance journey and blocked cubicle

And we were paid?...

£54



# For Our Dataset

- Initial figures suggest a total income, i.e. cost to commissioners = £155,125
- Annual cost to commissioners = £2,022,214
- Data set cost to the hospital trust = £197,506
- Annual cost to hospital trust = £2,574,645
- Loss to trust = **£552,431**

# In Summary

- Alcohol related attendances are around 10% of York ED's workload
- It isn't just weekend drinkers,
- The vast proportion of activity at night is alcohol related, but the numbers day and night are roughly the same,
- It isn't just tourists, stag and hen dos,
- It isn't just younger drinkers,
- It's largely men, but 36% are women

# Where next?

- Tackle the causes – the back story,
  - Action must be taken up stream – The Marmot Approach,
- We are where we are with some of the burden,
  - How do we improve our support/ pathways; mental health, behavioural issues, lower level substance use through to substance dependency?,
- Manage the pros and cons of the night time economy; recognising that this isn't the bulk of the burden.

# Contacts

- Dr Gill Kelly – York District Hospital,  
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- Tom Hall – North Yorkshire County Hall,  
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- Dr James Crick – currently North Yorkshire and Humber Health Protection Unit,  
[james.crick@phe.gov.uk](mailto:james.crick@phe.gov.uk)
- Thanks to Ian Cunningham for producing the maps and to Jordan McKie for the finance information.