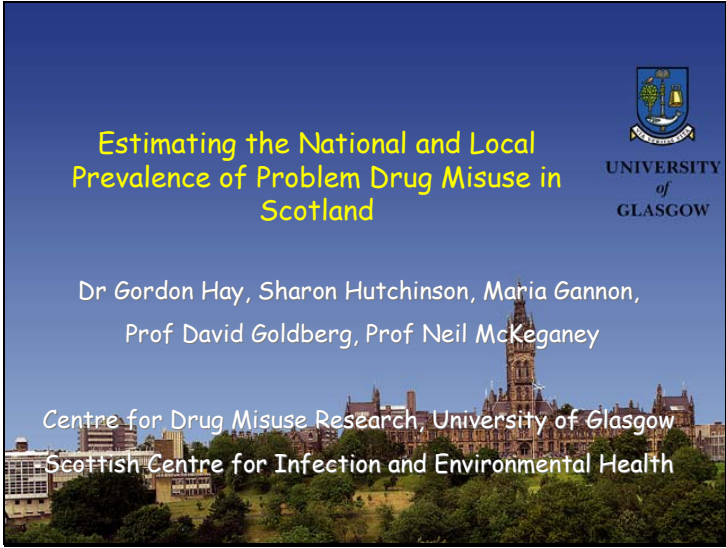


APPENDIX 1

Presentation to Drug Officers' meeting, 21 September 2005

Dr. Gordon Hay, Centre for Drug Misuse Research, University of Glasgow

Slide 1



Estimating the National and Local
Prevalence of Problem Drug Misuse in
Scotland

UNIVERSITY
of
GLASGOW

Dr Gordon Hay, Sharon Hutchinson, Maria Gannon,
Prof David Goldberg, Prof Neil McKeganey

Centre for Drug Misuse Research, University of Glasgow
Scottish Centre for Infection and Environmental Health

Slide 2




Outline

- Exercise (alcohol use)
- Study aims
- Methods
- Results
- Discussion

Slide 3

Exercise - alcohol use

- How many people in Edinburgh drink?
- Street survey - ask 50 people
 - 30 people say they drink (60%)
- What would happen if 500 people were asked?
- Survey carried out in the evening in the Grassmarket - does that matter?
- What does 'drink alcohol' mean?



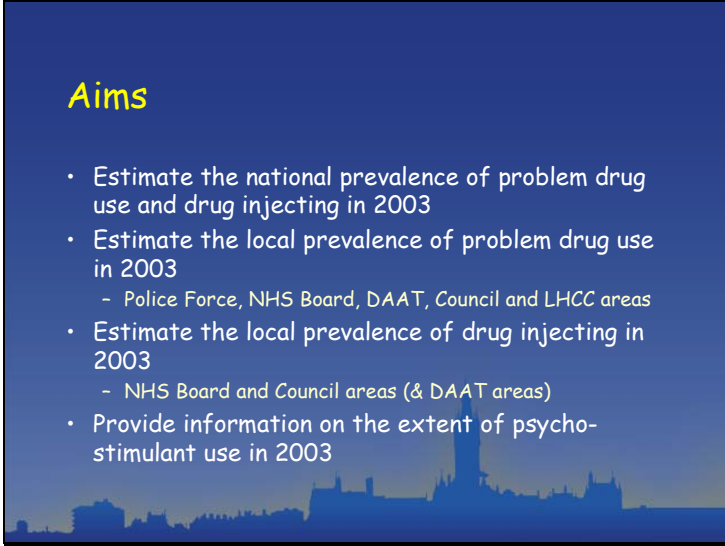
Slide 4

Exercise - alcohol use

- Sample size
 - Should not affect estimate
 - Can improve confidence intervals
- Representative (unbiased) sample
 - Area of city
 - Age, gender, ethnic group etc
- Case definition
 - Ever drunk alcohol
 - Drunk alcohol in last day, month, year



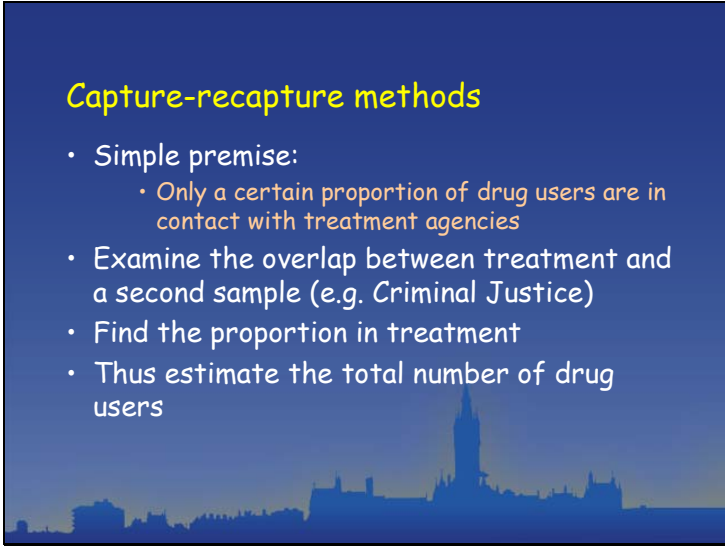
Slide 5

A dark blue slide with a silhouette of a city skyline at the bottom. The title 'Aims' is in yellow. The content is a bulleted list of objectives.

Aims

- Estimate the national prevalence of problem drug use and drug injecting in 2003
- Estimate the local prevalence of problem drug use in 2003
 - Police Force, NHS Board, DAAT, Council and LHCC areas
- Estimate the local prevalence of drug injecting in 2003
 - NHS Board and Council areas (& DAAT areas)
- Provide information on the extent of psycho-stimulant use in 2003

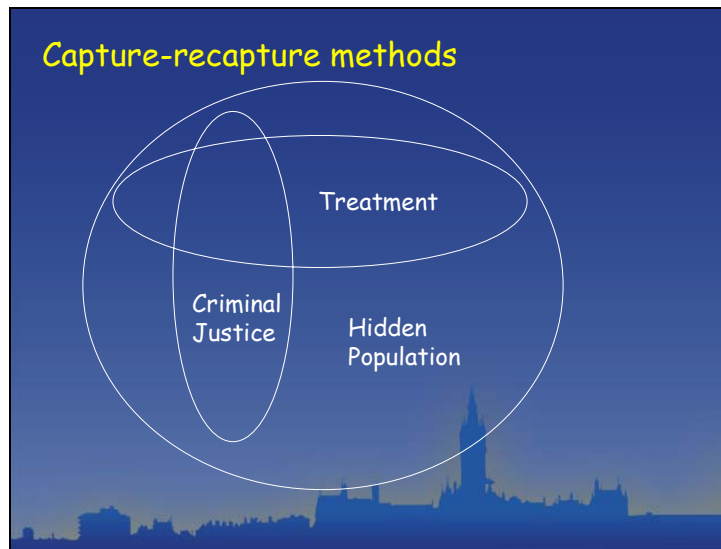
Slide 6

A dark blue slide with a silhouette of a city skyline at the bottom. The title 'Capture-recapture methods' is in yellow. The content is a bulleted list of points.

Capture-recapture methods

- Simple premise:
 - Only a certain proportion of drug users are in contact with treatment agencies
- Examine the overlap between treatment and a second sample (e.g. Criminal Justice)
- Find the proportion in treatment
- Thus estimate the total number of drug users

Slide 7

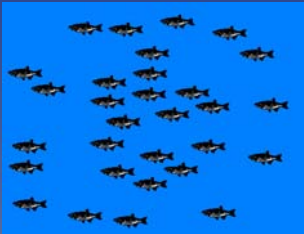


Slide 8

- Capture-recapture Methods
- Animal and fish populations
 - Capture a sample of fish
 - Mark them
 - Release them
 - Recapture a sample at a later date
 - Look for marks
 - Estimate population size

Slide 9

Example - Fish

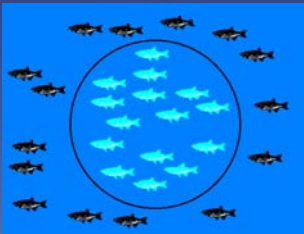


- Unknown number of fish in a lake

The slide features a dark blue background with a silhouette of a city skyline at the bottom. In the center, there is a rectangular inset showing a group of approximately 25 black fish swimming in a blue lake. The fish are arranged in a loose, circular pattern.

Slide 10

Example - Fish

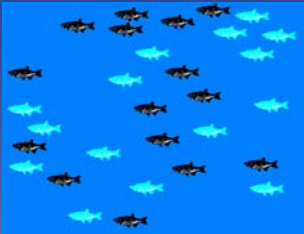


- Unknown number of fish in a lake
- Catch a sample and mark them

The slide features a dark blue background with a silhouette of a city skyline at the bottom. In the center, there is a rectangular inset showing a group of approximately 25 black fish swimming in a blue lake. A circular area in the center of the lake is highlighted, containing 10 red fish, representing a sample that has been caught and marked.

Slide 11

Example - Fish

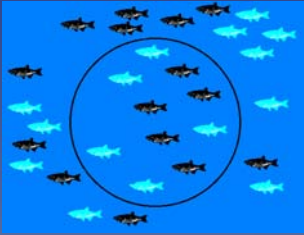


- Unknown number of fish in a lake
- Catch a sample and mark them
- Let them loose

The slide features a blue background with a silhouette of a city skyline at the bottom. The central image shows a group of fish in a lake, with some fish appearing to have marks on them, though they are not clearly visible in this specific illustration.

Slide 12

Example - Fish



- Unknown number of fish in a lake
- Catch a sample and mark them
- Let them loose
- Recapture a sample and look for marks

The slide features a blue background with a silhouette of a city skyline at the bottom. The central image shows a group of fish in a lake, with a black circle highlighting a specific sample of fish.

Slide 13

Estimate population size

n_1 = number in first sample	15
n_2 = number in second sample	10
n_{12} = number in both samples	5
N = total population size	

assume that

$$n_1/N = n_{12}/n_2 \quad \text{therefore} \quad 15/N = 5/10$$
$$N = (10 \times 15) / 5 = 30$$

Slide 14

3 or 4 source method

- Does not assume that sources are independent
- Statistical analysis
 - Log-linear modelling
 - Explain relationships between sources
- Estimate the size of the hidden population
- Estimate the total population size
- Obtain 95% confidence intervals

Slide 15

Prevalence research in Scotland

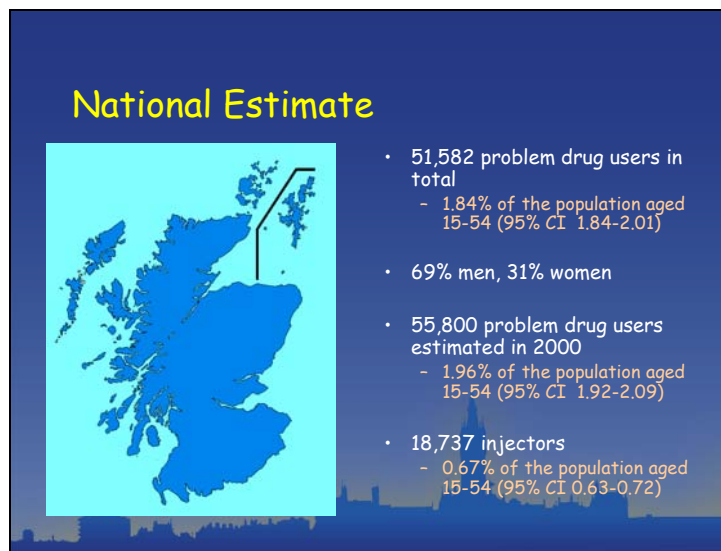
- Estimating the National and Local Prevalence of Problem Drug Misuse in Scotland
 - 8 Police Forces
 - 15 Health Boards
 - 22 Drug Action Teams
 - 32 Councils
 - 83 LHCCs
- Opiate and / or benzodiazepine misuse
- Drug injecting
- Information on psychostimulant use

Slide 16

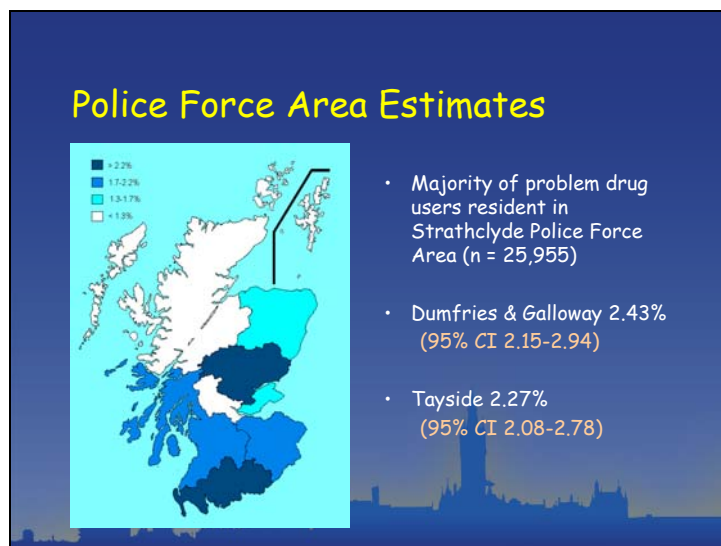
Sources of data in Scotland

- Scottish Drug Misuse Database
 - Agency returns (SMR24)
 - New contacts
 - Additional data on current clients collected from drug treatment agencies
- Hospital Admissions
- Police Data (Misuse of Drugs Act)
- Social Enquiry Reports
- Hepatitis C Virus

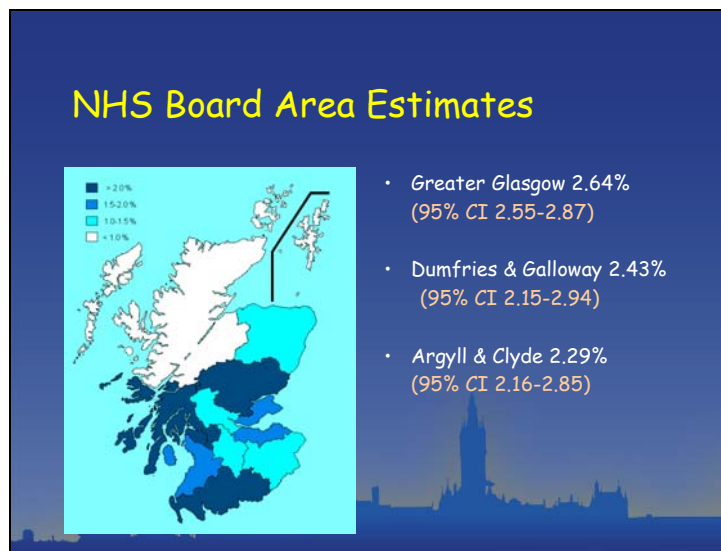
Slide 17



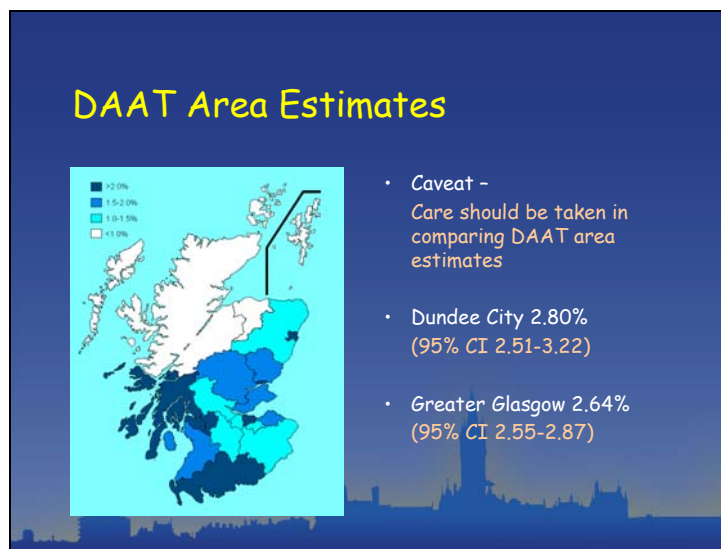
Slide 18



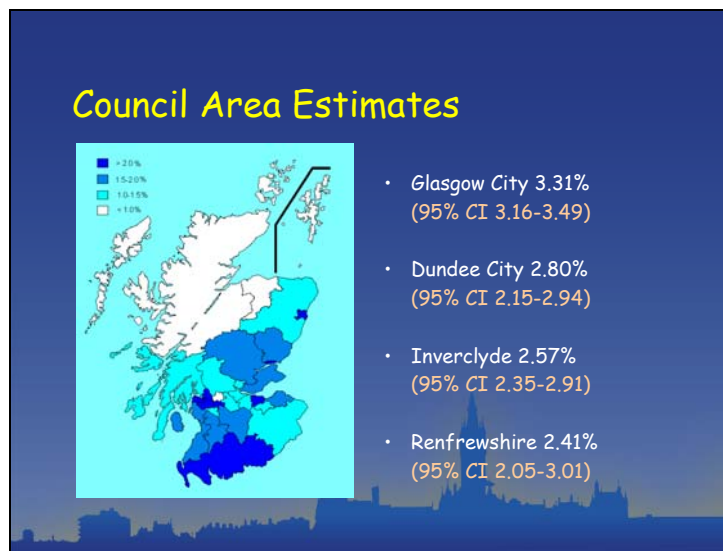
Slide 19



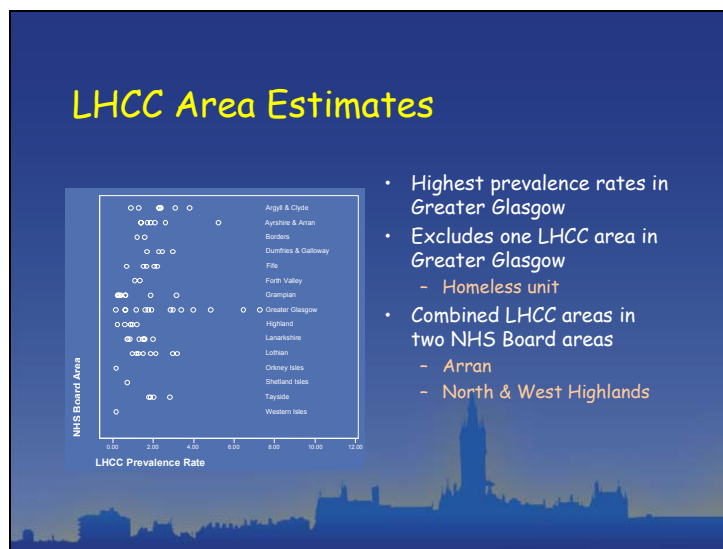
Slide 20



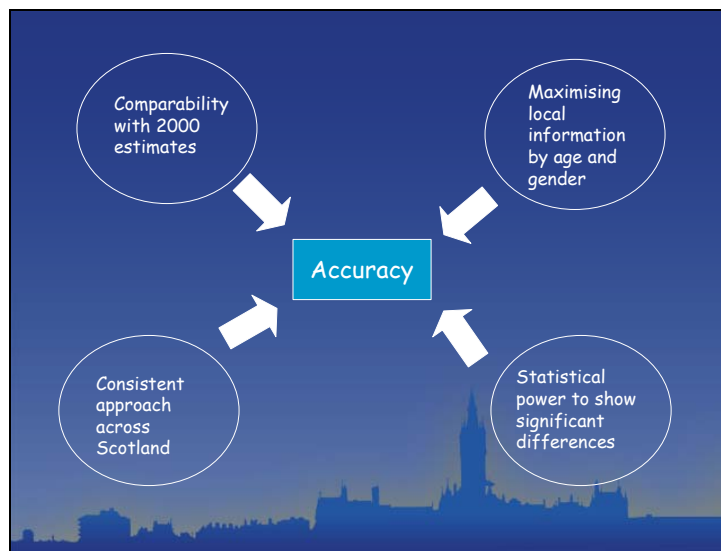
Slide 21



Slide 22



Slide 23



Slide 24

Confidence Intervals

- National estimate is the sum of over 120 individual analyses
 - By council area, by gender, by age group (males only)
- Confidence intervals are skewed e.g. -
 - Local estimate = 715
 - 95% CI = 508-1,079
- Combining confidence intervals makes them even more skewed
 - National estimate = 51,582
 - Lower bound = 51,456
 - Upper bound = 56,379

Slide 25

Changes since 2000

- National Estimate (2000) = 55,800
- Prevalence rate = 1.96 (1.96-2.09)

- National Estimate (2003) = 51,582
- Prevalence rate = 1.84 (1.84-2.01)
- Statistically significant decreased (93% level)
- Significant increases in
 - South Ayrshire
 - Dumfries & Galloway

