ALCOHOL

Health Needs Assessment

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References
ACKNOWLEDGEMENTS

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Vol. 1  An Overview of Scotland and Argyll & Clyde 1982-93
Vol. 2  Local Government Districts in Argyll & Clyde 1988-93
Vol. 3  Graphs of Alcohol Related Trends 1982-93
Vol. 4  Alcohol Related Statistics in Argyll & Clyde Health Board 1994

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EXECUTIVE SUMMARY

This report examines the impact of the harmful use of alcohol on the health status of the residents of Argyll and Clyde Health Board (ACHB), and makes recommendations with regard to future purchasing of these services.

For alcohol misuse, a simple classification based on weekly units of alcohol consumption is described:

**Category I** excessive drinking without problems or dependence  
(assumed weekly intake 22 - 35 units males, 15 - 25 units females)

**Category II** excessive drinking with occurrence of problems but without established dependence  
(assumed weekly intake 36 - 50 units males, 26 - 35 units females)

**Category III** excessive drinking with problems and dependence  
(assumed weekly intake 51+ units males, 36+ females)

The per capita consumption of absolute alcohol has risen (inversely with the real price of alcohol) in the last 30 years in the United Kingdom from 4.4 litres to 7.2 litres in 1992. This is not high compared to other similar industrialised countries, but alcohol problems in Scotland are related to how people drink on the occasions they do drink.

One unit is the equivalent to ½ pint normal strength beer, lager or cider, or 1 standard glass of wine, or 1 standard glass of sherry or vermouth, or 1 single measure of whisky, gin, vodka etc.

SUMMARY

The main health problems which can be related to excessive alcohol intake within ACHB are:-

- ACHB has the highest rate for deaths from alcohol or cirrhosis of the Scottish mainland Health Boards. The rate of 133.7 per 100,000 population is 26% above the Scottish rate.

- Death rates from alcoholic liver disease are 24% above Scottish rates and the annual rate of growth for the 12-year period 1982 - 1993 is 40% above Scotland.

- For attributable mortality the Health Board's 12 year average was only 6% above Scotland but with a 12 year annual growth rate of 131% above Scotland (attributable mortality indicates deaths directly related to alcohol misuse details in Appendix 1).
For alcohol related mortality there are, on average, 243 deaths per annum from alcohol related diseases. In these illnesses alcohol has shown to play an important part e.g. neoplasms, cardiovascular disease, respiratory disease, digestive diseases and injuries, whether intentional or unintentional (Appendix I for definitions).

Utilisation rates for the acute services by people with alcoholic liver disease are similar for the Health Board and for Scotland, but the 12 year annual growth for females under the age of 40 in ACHB is 71% above Scotland.

For alcoholic psychoses and dependence treated in acute general hospitals the 12 year average rates for females under 25 were 85% above Scotland and for males under 25, 60%. A feature of note is the statistically significant annual growth rate of 20% for females under 25 in the Health Board’s area and this is 48% above the equivalent Scottish growth rate.

For non dependent abuse there were little differences in the 12 year average rates between Scotland and the Health Board but the 12 year annual growth rate for both males and females under 25 is significantly higher than equivalent Scottish growth rates. These rates are respectively 57% and 49% above Scotland.

For alcoholic psychoses and dependence treated in psychiatric hospitals the Board has higher 12 year rates than Scotland for all ages, with males 25 - 39 years of age 71% above Scotland and females in the same age group 31% above Scotland.

Local government districts show a wide variation in mortality and morbidity from alcohol related disease.

Inverclyde and Renfrew have typical profiles of areas where there has been a history of excessive alcohol intake both in the past and present.

Dumbarton and Argyll and Bute have atypical profiles and further work will be undertaken to identify whether the following are causing the atypical mortality and morbidity.

- different referral patterns by GPs
- different service provision
- residents using different services including other statutory or voluntary
- difference in coding procedure in death certificates or SMR data.
different pattern of drinking behaviour

Estimates of the cost to the Health Board of patients treated with 'alcohol' in the diagnosis indicate in 1992 and 1993 a total of £12m and £11m respectively was spent. This excludes the cost of Primary Care Services and Health Promotion.
RECOMMENDATIONS

1. Prevention

i) Consumption of alcohol should be restricted by increasing tax on alcohol, restricting alcohol promotion and enforcing anti-drinking and driving policies. This relates primarily to central Government but agencies involved in alcohol related health problems have an advocacy role to promote these policies.

ii) Health promotion strategies must be planned and evaluated and be integrated with the work of other agencies, such as social work or voluntary organisations. This work should include mass-media and community based programmes, both of which have “agenda setting” roles.

2. Service Provision

i) The aim should be to provide the full range of appropriate facilities and care for those with alcohol problems, with the focus on primary care.

ii) Health services for alcohol misuse should be planned and integrated with social and non-statutory services.

iii) There should not be excessive specialised or expensive NHS or non-NHS detoxification facilities. The aim is to support detoxification in primary care, the outpatient setting, and by domestic detoxification services.

iv) The effective use of brief or minimal intervention in both primary care and the acute services.*

2a Primary Care

i) Primary care staff have a key role in the prevention, screening, treatment and referral of problem drinkers. This is reinforced by the new regulations governing health promotion activities by GPs.

ii) There should be appropriate training programmes for primary care staff to recognise and deal with problem drinking.

2b NHS General Non-Psychiatric Services

i) Screening of patients to identify alcohol intake in the outpatient, Accident and Emergency, inpatient and antenatal departments should be undertaken. Opportunities must be taken to give advice or more intensive therapy, especially brief or minimal intervention.

ii) There should be appropriate training of general health staff to recognise alcohol misuse in the general National Health Service setting.
iii) Contracts with providers should specify that alcohol screening and health education are undertaken.

2c NHS Psychiatric Services

i) There should be access to a limited number of inpatient beds in psychiatry to deal with complicated cases and severe withdrawal problems.

ii) These elements should be included in contract setting with providers.

3 Non-Statutory Sector

i) Services provided by the non-statutory sector should be assessed as part of service provision. This includes AA, Al-Anon, alcohol counselling services, local Councils on Alcohol, half-way houses, and facilities for homeless drinkers.

4 Research Priorities

i) Identification of the impact of alcohol related mortality and morbidity on the acute hospital service utilisation.

ii) Longterm health needs of severely dependent alcohol misusers.

iii) Better information on costs of alcohol misuse and the cost-effectiveness and cost-benefit of prevention and treatment strategies.

iv) Evaluation of alcohol treatment services, identifying the differing models of care.

(v) Monitoring and evaluation of a pilot project in a local government district, where minimal intervention is being practised by all agencies.

* Brief or minimal interventions consist of assessment of intake, provision of information and advice and has been shown in randomised clinical trials to be effective in reducing alcohol consumption by over 20%.
PURCHASING ISSUES

AIM

• To encourage people to drink within ‘sensible’ limits.
• To identify, at an early stage, problem drinkers.
• To purchase appropriate and effective treatment services.

1. HEALTH PROMOTION

• Health Promotion Strategy
  • emphasising healthy lifestyles and healthy life skills.
  • campaigns focused on vulnerable groups i.e. young people and women.

2. SPECIFIC PREVENTION

• alcohol screening in primary and secondary care and purchasing of minimal intervention services.

3. TREATMENT SERVICES

• alcohol detoxification at home, day hospital and inpatient.
• specific minimal intervention services in acute hospitals and Accident & Emergency Departments.
• purchasing of appropriate services from non-statutory organisations, i.e. Councils on Alcohol etc.

4. REHABILITATION

• purchasing of support and after care i.e. counselling etc. by Primary Health Care, Community Psychiatric Nurses and non-statutory services.
5. RESEARCH ISSUES

- identification of the impact of alcohol related mortality and morbidity on the acute hospital service utilisation.

- long term health needs of severely dependent alcohol misusers.

- better information on costs of alcohol misuse and the cost-effectiveness and cost-benefit of prevention and treatment strategies.

- provision of alcohol services by the private health care sector.

- evaluation of alcohol treatment services, identifying the differing models of care.

- monitoring and evaluation of a pilot project in a local government district, where minimal intervention is being practised by all agencies.
1. EPIDEMIOLOGICAL OVERVIEW

1.1 Prevalence of Drinking

UK Consumption of Alcohol

The best indicator to monitor drinking behaviour is alcohol consumption per head. Within the United Kingdom, consumption fell from World War I until about 1950, since when it has risen steadily apart from a small fall in the 1980s (Faculty of Community Medicine 1989)(1). The increase in consumption is associated with increasing disposable income and a drop in the real cost of alcohol.

Alcohol consumption data from HM Customs and the OPCS (Jacobson 1991)(2) show that the number of litres of absolute alcohol drunk per capita has risen from 4.4 in 1960 to 7.2 in 1991 (Table 1). The corresponding figures for the population aged 15 years and over is an increase from 5.7 to 8.9 litres. The proportion of the alcohol drunk in the form of beer has decreased, while that in the form of cider, wine and spirit has increased.

Internationally, the United Kingdom’s per capita consumption of alcohol (7.2 litres of absolute alcohol for 1991) is lower than other countries such as France (13.2 litres) and similar to others such as Canada 7.8 litres (Brewers’ Society 1991)(3). However, there is some evidence that alcohol related problems are a chronic feature of Scotland and may be related to how people drink - for example, less frequently but more heavily on the occasions they do drink (Plant 1992)(4).

Prevalence of excessive drinking within Scotland

Data from the General Household Survey (GHS)(5) provide population estimates of drinking behaviour.

The proportion of both men and women in Scotland drinking more than the recommended weekly maximum (22 units or more for males and 15 units or more for females) is less than the British figures. From 1986 to 1990, the proportions of males and females in Scotland drinking more than the recommended limits have remained constant, but the proportion of males drinking more than 50 units decreased from 7% to 4%. However, given the relatively small sample sizes, these figures should be interpreted with caution.

Using 1991 population census data, the GHS figures can be used to provide an estimate of the prevalence of excessive drinking within Scotland. This data suggests that 24% of males aged over 16 years drink more than the recommended 22 units per week. This compares to 7% of women drinking more than the recommended 15 units per week.
Table 1
UK consumption of alcohol (litres per head of 100% alcohol)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Population</th>
<th>Aged 15 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>4.4</td>
<td>5.7</td>
</tr>
<tr>
<td>1961</td>
<td>4.5</td>
<td>5.9</td>
</tr>
<tr>
<td>1962</td>
<td>4.5</td>
<td>5.8</td>
</tr>
<tr>
<td>1963</td>
<td>4.6</td>
<td>6.0</td>
</tr>
<tr>
<td>1964</td>
<td>4.8</td>
<td>6.3</td>
</tr>
<tr>
<td>1965</td>
<td>4.7</td>
<td>6.2</td>
</tr>
<tr>
<td>1966</td>
<td>4.8</td>
<td>6.3</td>
</tr>
<tr>
<td>1967</td>
<td>4.9</td>
<td>6.5</td>
</tr>
<tr>
<td>1968</td>
<td>5.1</td>
<td>6.7</td>
</tr>
<tr>
<td>1969</td>
<td>5.1</td>
<td>6.8</td>
</tr>
<tr>
<td>1970</td>
<td>5.4</td>
<td>7.1</td>
</tr>
<tr>
<td>1971</td>
<td>5.6</td>
<td>7.4</td>
</tr>
<tr>
<td>1972</td>
<td>5.9</td>
<td>7.8</td>
</tr>
<tr>
<td>1973</td>
<td>6.6</td>
<td>8.7</td>
</tr>
<tr>
<td>1974</td>
<td>6.9</td>
<td>9.1</td>
</tr>
<tr>
<td>1975</td>
<td>6.9</td>
<td>9.0</td>
</tr>
<tr>
<td>1976</td>
<td>7.2</td>
<td>9.3</td>
</tr>
<tr>
<td>1977</td>
<td>6.8</td>
<td>8.8</td>
</tr>
<tr>
<td>1978</td>
<td>7.4</td>
<td>9.4</td>
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<tr>
<td>1979</td>
<td>7.7</td>
<td>9.8</td>
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<tr>
<td>1980</td>
<td>7.4</td>
<td>9.4</td>
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<tr>
<td>1981</td>
<td>7.2</td>
<td>9.0</td>
</tr>
<tr>
<td>1982</td>
<td>7.0</td>
<td>8.7</td>
</tr>
<tr>
<td>1983</td>
<td>7.1</td>
<td>8.9</td>
</tr>
<tr>
<td>1984</td>
<td>7.3</td>
<td>9.0</td>
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<td>9.1</td>
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<td>1986</td>
<td>7.4</td>
<td>9.1</td>
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<td>1987</td>
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<td>1988</td>
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<td>1989</td>
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<td>1990</td>
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<td>9.3</td>
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<tr>
<td>1991</td>
<td>7.2</td>
<td>8.9</td>
</tr>
<tr>
<td>1992</td>
<td>7.2</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Source: OPCS 1992
### Table 2
Projections for Alcohol Consumption by Persons 16+ in Argyll and Clyde


<table>
<thead>
<tr>
<th>Alcohol Consumption Categories</th>
<th>Weekly Consumption</th>
<th>Estimated Proportions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Males</td>
</tr>
<tr>
<td>A = Non drinkers</td>
<td>(abstainer or no drinks in last year)</td>
<td>.07</td>
</tr>
<tr>
<td>B = Occasional drinkers</td>
<td>(did not drink last week)</td>
<td>.16</td>
</tr>
<tr>
<td>C = Light drinkers</td>
<td>(male 1-21 units; female 1-14)</td>
<td>.54</td>
</tr>
<tr>
<td>D = Moderate drinkers</td>
<td>(male 22-35 units; female 15-25)</td>
<td>.11</td>
</tr>
<tr>
<td>E = Fairly heavy drinkers</td>
<td>(male 36-50 units; female 26-35)</td>
<td>.06</td>
</tr>
<tr>
<td>F = Very heavy drinkers</td>
<td>(male 51+ units; female 36+)</td>
<td>.06</td>
</tr>
<tr>
<td>G = Regular drinkers = C + D + E + F</td>
<td>(male 1+ units; female 1+ units)</td>
<td>.77</td>
</tr>
<tr>
<td>H = Excessive drinkers</td>
<td>(male 22+ units; female 15+ units)</td>
<td>.23</td>
</tr>
<tr>
<td>I = High risk drinkers</td>
<td>(male 36+ units; female 26+)</td>
<td>.12</td>
</tr>
</tbody>
</table>

Population mid-year estimates 1993 (age 16+)

<table>
<thead>
<tr>
<th>Area</th>
<th>Males</th>
<th>Females</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argyll and Clyde</td>
<td>162924</td>
<td>180365</td>
<td>343289</td>
</tr>
<tr>
<td>Argyll and Bute</td>
<td>23938</td>
<td>27003</td>
<td>50941</td>
</tr>
<tr>
<td>Dumbarton</td>
<td>29771</td>
<td>31749</td>
<td>61460</td>
</tr>
<tr>
<td>Inverclyde</td>
<td>33504</td>
<td>37720</td>
<td>71224</td>
</tr>
<tr>
<td>Renfrew</td>
<td>72771</td>
<td>83893</td>
<td>156664</td>
</tr>
</tbody>
</table>

**Local Projections for 1993**

<table>
<thead>
<tr>
<th>Consumption Category</th>
<th>Male</th>
<th>Female</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ARGYLL &amp; CLYDE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A = non drinkers</td>
<td>11405</td>
<td>18037</td>
<td>29441</td>
</tr>
<tr>
<td>B = occasional</td>
<td>26968</td>
<td>54110</td>
<td>81077</td>
</tr>
<tr>
<td>C = light</td>
<td>87979</td>
<td>93790</td>
<td>181769</td>
</tr>
<tr>
<td>D = moderate</td>
<td>17922</td>
<td>10822</td>
<td>28744</td>
</tr>
<tr>
<td>E = fairly heavy</td>
<td>9775</td>
<td>1804</td>
<td>11579</td>
</tr>
<tr>
<td>F = very heavy</td>
<td>9775</td>
<td>1804</td>
<td>11579</td>
</tr>
<tr>
<td>G = regular</td>
<td>125451</td>
<td>108219</td>
<td>233670</td>
</tr>
<tr>
<td>H = excessive</td>
<td>37473</td>
<td>14429</td>
<td>51902</td>
</tr>
<tr>
<td>I = high risk</td>
<td>19551</td>
<td>3607</td>
<td>23158</td>
</tr>
</tbody>
</table>

| **ARGYLL & BUTE**    |      |        |      |
| A = non drinkers     | 1676 | 2700   | 4376 |
| B = occasional       | 3830 | 8101   | 11931|
| C = light            | 12927| 14042  | 26968|
| D = moderate         | 2633 | 1620   | 4253 |
| E = fairly heavy      | 1456 | 270    | 1706 |
| F = very heavy        | 1456 | 270    | 1706 |
| G = regular          | 18452 | 16202 | 34634|
| H = excessive        | 5506 | 2160   | 7666 |
| I = high risk        | 2873 | 540    | 3413 |

| **DUMBARTON**        |      |        |      |
| A = non drinkers     | 2080 | 3175   | 5235 |
| B = occasional       | 4754 | 9525   | 14278|
| C = light            | 16644| 16509  | 32553|
| D = moderate         | 3268 | 1905   | 5173 |
| E = fairly heavy      | 1783 | 317    | 2100 |
| F = very heavy        | 1783 | 317    | 2100 |
| G = regular          | 22877| 19049  | 41927|
| H = excessive        | 6834 | 2540   | 9373 |
| I = high risk        | 3565 | 635    | 4200 |

| **INVERCLYDE**       |      |        |      |
| A = non drinkers     | 2245 | 3772   | 6117 |
| B = occasional       | 5561 | 11316  | 16677|
| C = light            | 18092| 19614  | 37707|
| D = moderate         | 3685 | 2263   | 5949 |
| E = fairly heavy      | 2010 | 377    | 2387 |
| F = very heavy        | 2010 | 377    | 2387 |
| G = regular          | 25798| 22632  | 48430|
| H = excessive        | 7706 | 3018   | 10724|
| I = high risk        | 4020 | 754    | 4775 |

| **RENFREW**          |      |        |      |
| A = non drinkers     | 5304 | 8389   | 13693|
| B = occasional       | 12123| 25168  | 37291|
| C = light            | 40916| 42624  | 84541|
| D = moderate         | 8335 | 5034   | 13368|
| E = fairly heavy      | 4546 | 839    | 5385 |
| F = very heavy        | 4546 | 839    | 5385 |
| G = regular          | 58244| 50336  | 108679|
| H = excessive        | 17427| 6711   | 24139|
| I = high risk        | 9093 | 1678   | 10770|
1.2 Alcohol related disease

Alcohol has been shown to be a risk factor for a wide range of diseases. This overview will focus on those most closely related to alcohol misuse as listed in Appendix 1. Care should be taken when interpreting regional variations in alcohol related disease data, both at a national level between Scotland and England and locally between Health Boards, because of possible differences in recording practices (Kemp and Carstairs 1987). [6]

1.3 UK Mortality Data

Cirrhosis deaths, and deaths from chronic liver disease, are a useful indicator of the prevalence of alcohol problems. The data from England and Wales suggest that there is considerable variation in prevalence rates; ranging from 4.5 for Wessex to 10.6 for North West Thames (rates per 100,000 adults over 15 years). The suggestion is that Regions with higher prevalence rates have more large urban conurbations (Edwards and Unnithan 1992) [7].

1.4 Health Board Mortality and Service Utilisation

To identify the specific alcohol related health problems in Argyll and Clyde Health Board, data for mortality and morbidity have been collected and analysed for the period 1982 to 1993. The full tables relating to these have been prepared by Dr Alister Hooke [8]. From the extensive information provided, the Registrar General's Death Certificates, the SMR1 general hospital discharges and SMR4 psychiatric hospital admissions, we have to ask:-

• Is there excessive alcohol consumption in Argyll and Clyde Health?; and if so
• Is it affecting the health status of the population?;
• In particular, what areas of the Board have been affected?;
• Is there a difference between the sexes?;
• Is there a difference in the age groups being affected?;

Finally, the question has to be asked:-

• If we identify a deterioration in the health status of Argyll and Clyde Health Board’s population due to alcohol, what health services do we require to purchase to improve the health status of the population?

There is available within the Health Board 12-year data on deaths and service utilisation.
The data have been examined to identify absolute numbers, rates per 100,000 population, time trends and statistically significant differences between the Health Board and Scotland.

Further analyses are available for the four local government districts.

The major areas examined are:

1. Deaths due to alcohol or alcohol attributable diseases.
2. Service utilisation due to alcohol in the acute and psychiatric services.

Further information is available for other statutory services and the voluntary sector, but no attempt has been made to examine this.

The following data are available on graphs in Appendix 2.

**Alcoholic Liver Mortality**

- 28 deaths in Argyll and Clyde; 283 in Scotland in 1993.
  
  The 1993 rate for ACHB is 6.5/100,000 compared to Scotland 5.5/100,000. Within this the male rate is 9.6 ACHB, Scotland 7.5; Females ACHB 3.6, Scotland 3.7.

- The average 12 year rate for the Health Board is 5.2 per 100,000 compared with Scotland at 4.2 per 100,000, but within this the ACHB male rate is 7.4 compared to Scotland 5.6.

  The Health Board’s 12 year rate for both sexes is 24% above Scotland; for males 31% and for females 11.5% above.

- The average annual growth rate for Argyll and Clyde is 6.7% compared with Scotland at 4.8%.

  This indicates that the Health Board’s growth rate for deaths from alcoholic liver disease is 40% above Scotland for both sexes; for males 54% and for females 16%.

**Alcohol Attributable Mortality**

This information relates to deaths from diseases directly attributable to alcohol:-

- In 1993 there were 52 deaths in the Health Board in this category compared to 451 in Scotland.
In 1993 the Health Board’s rate was 12.0/100,000 compared to the Scottish rate of 8.8 but this hid a male rate of 17.2 for the Health Board compared with 12.7 for Scotland.

- The 12 year average rate was 8.3 per 100,000 for the Health Board compared with 7.8 in Scotland, with the highest rates for both Health Board and Scotland being males 11.7 and 10.9/100,000 respectively.

The Health Board’s 12 year average was 6% above Scotland

- The average annual growth was 5.6% for the Health Board and only 2.4% for Scotland.

The Health Board had an annual growth rate 131% above Scotland in the years 1982-93.

Alcohol Related Mortality

Alcohol related mortality over the period 1980-1993 has shown an annual average of 243 deaths in the following categories (Appendix I for details):

- Malignant neoplasms 29.2%.
- Unintentional injuries 26%.
- Cardiovascular disease 22.6%
- Digestive diseases 7.8%
- Respiratory diseases 7%
- Intentional injuries 6.6%
- Metabolic diseases 0.8%.

Service Utilisation

SMR1 Discharges - Alcoholic Liver Disease

- There were 225 discharges in this category from the Health Board in 1993 compared to 2,503 for Scotland.

The Health Board’s rate was 52/100,000; the Scottish rate was 49/100,000.

- The Health Board and Scotland had similar 12 year average rates for males of 48 and 47/100,000 respectively. Equivalent female rates per 100,000 population are both 21.
Males under the age of 40 in the Health Board had an 18% increase over Scottish males and females under the age of 40 had a 6% increase above the Scottish 12 year average rate.

- Although the 12 year average rates were similar for the Health Board and Scotland for all ages the most startling feature is the significant annual growth rate of 11.2% for females under the age of 40 being discharged from hospital with alcoholic liver disease during the 12 year period within the Health Board. The growth rate is 71% above the same age group and sex for Scotland.

For males of a similar age the growth rate was not statistically significant both locally and nationally.

**SMR1 Discharges for Alcoholic Psychoses and Dependence Syndrome**

- In 1993 there were 638 discharges from the Health Board; in Scotland there was 5,815.

  In 1993 the Health Board rate was 147/100,000, while the Scottish rate was 114/100,000.

- The 12 year average for males for the Health Board was 177/100,000 compared to Scotland of 108/100,000. For females the respective rates were 39 per 100,000 and 29 per 100,000.

  The difference in the average 12 year rate showed that for females in the Health Board under the age of 25 their rate was 85% above the Scottish average and for males of a similar age group it was 60%. The largest difference was males 25-39 years of age in the Health Board who were 109% above the Scottish average.

  In the Health Board females under 25 years had a 20% annual growth rate for discharges for alcoholic psychoses. This is the highest growth rate in both sexes and ages. The annual growth rate for Argyll and Clyde Health Board is 48% above Scotland for females under 25 years of age.

**SMR1 Discharges - Non-dependent Abuse**

- 898 people were discharged from general hospitals in the Health Board for non-dependent abuse, compared to 9,347 for Scotland.

  In 1993 the Argyll and Clyde Health Board rate was 207/100,000; the Scottish rate was 183/100,000.
There was little difference between the Health Board and Scotland in the male 12 year average, with one being 171/100,000 and the other 173/100,000. For females similarly little difference with 51 per 100,000 and 57 per 100,000.

For all age groups the Health Board is below Scotland in the average 12 year rate, except males aged between 25 and 39, where there was a 3% increase above Scotland.

In both males and females under 25 years in ACHB there was a notable difference in the annual growth rate compared to Scotland. For males under the age of 25 there was a difference in annual growth rates of 57% and the similar figure for females of 49%.

**SMR4 Data Admissions to Psychiatric Hospitals with a Diagnosis of Alcohol Psychoses and Alcohol Dependence Syndrome**

The Health Board rate for admissions to psychiatric hospitals has in the past 12 years been almost double the Scottish rate.

- In 1993 there were 551 admissions to psychiatric hospitals in the Health Board, compared to 3,833 in Scotland.

The Health Board’s rate is 127/100,000 compared to the Scottish rate of 75/100,000.

- The 12 year average rate for males in the Health Board is 190 compared to Scotland 117. For females it is 58 in the Health Board and the Scottish equivalent is 45.

In all age groups and both sexes the 12 year average rates for the Health Board were all statistically significantly higher than Scotland. In males, in the 25-39 age group there was a 71% increase compared to Scotland and for females of a similar age group it was 31%.

In those under 25 years of age for males there was a 49% increase over Scotland and for females of a similar age group it was 26%.

- Annual growth rates are only statistically significant for both males and females in the Health Board over the age of 65; the respective figures being 6.7% for males and 9.3% for females.
### Table 3 - Service Utilisation

<table>
<thead>
<tr>
<th></th>
<th>Total Discharges</th>
<th>Discharges/Alcohol</th>
<th>Total Bed Days</th>
<th>Total Alcohol Bed Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMR1</td>
<td>68,248</td>
<td>1,672 (2.4%)</td>
<td>779,658</td>
<td>11,019 (1.4%)</td>
</tr>
<tr>
<td>SMR4</td>
<td>3,552</td>
<td>559 (15.7%)</td>
<td>828,713</td>
<td>20,745 (2.5%)</td>
</tr>
</tbody>
</table>

(Source:- Information Services Department - ACHB 1994)

Further work is proceeding to identify alcohol related bed utilisation by Local Government Districts.
Local Study within an Accident & Emergency (A & E) Department in ACHB

A study at the Vale of Leven A & E Department in 1994 showed that in a one month period 28% of all casualties featured alcohol in relation to their attendance at hospital. Of those casualties with alcohol featuring in the attendance, 1 : 5 were admitted as inpatients, compared to 1 : 20 for those who had no alcohol related condition.

In 1992 there were 18,468 total attendances at the Vale of Leven A & E Department. If we assume that 28% of these had an alcohol related problem, then 4,897 people cost the NHS £56 per attendance, or a total of £279,236. It would be of interest to follow those people who were admitted from the A & E Department with alcohol featuring in their attendance and to identify the total cost to the Health Service.
LOCAL GOVERNMENT DISTRICTS

Inverclyde

In this area of the Health Board all parameters for judging excessive alcohol intake are comparatively high in the years 1988 - 1993:

- Inverclyde presently has the second highest Health Board death rate for males for alcoholic liver disease at 9.3/100,000.

- The six year average rate for males is 11.6/100,000 which is 80% above Scotland. Female rates are not significantly different from Scotland.

- For attributable mortality in males the present rate of 18.6/100,000 is the Health Board's highest and the six year average of 9.1/100,000 is 61% above Scotland. Female rates are not significantly different from Scotland.

- For alcoholic psychoses treated in general hospitals Inverclyde presently has a high rate for males of 227/100,000 and a six year average of 290/100,000. The latter is 114% above Scotland.

Within this group young males 25 - 39 years of age have a rate of 401/100,000, which is 219% above Scotland for the relevant six year period.

For females of all ages the six year average is 52.6/100,000, which is 48% above Scotland. Within this group young females less than 25 years of age have an average six year rate which is 278% above Scotland.

- Interestingly, for non dependent alcohol abuse for males and females of all age groups, the rate of admissions to general hospitals for this condition are significantly lower than Scotland.

- For alcoholic psychoses treated in psychiatric hospitals Inverclyde six year average for males is 333/100,000 which is 180% above Scotland. The highest six year average for males is 598/100,000 in the age group 25 - 39 and this is 250% above Scotland.

For females of all ages the six year average rate is 72.3/100,000 which is 54% above Scotland. For females 25 - 39 the six year average is 69% above Scotland.

Summary

Inverclyde area gives a typical pattern of a district with a high alcohol intake, both in the past and at present. The deaths indicate past excessive intake and the increase in the present alcoholic liver disease and psychoses indicates a continuing excessive intake.
Renfrew

Renfrew District has slight differences from Inverclyde. However, the following should be noted:

- Deaths from alcoholic liver disease are 20% and 22% above Scotland for males and females but these are not statistically significant for the average six year period.

- Alcohol attributable mortality is 4% above Scotland for males in this area, but again this is not statistically significant.

- Over the six years discharges from acute hospitals for alcoholic liver disease are 14% above Scotland for males and 18% for females above Scotland. Both are statistically significant.

  For specific age groups, males under the age of 40 the six year average is 56% above Scotland and for females 40 - 64 the rate is 28% above Scotland. Both are statistically significant.

- For alcoholic psychoses treated in general hospitals in the six year period the average is below Scotland at 3% for males and for females it is 18% below Scotland.

- Non dependent alcohol abuse for males has a six year average rate of 285/100,000, which is 24% above Scotland. Within these males, those under the age of 25 have a six year average which is 31% above Scotland.

  For females the six year average rate of 88/100,000 is 17% above Scotland and within this, for females under the age of 25 and for those 25 - 39 years of age have rates of 25% and 26% respectively above Scotland.

- For alcoholic psychoses treated in psychiatric hospitals male admissions of all ages have a six year average 43% above Scotland, and for those under 25 years of age a 68% rate above Scotland. In the older age group of males over 64 years of age there is an 82% increase above Scotland.

  For females, the six year average is 46% above Scotland, with the highest difference in those over 64 years of age with a 92% increase.

Summary

Renfrew does not have statistically significant differences from Scotland in deaths from alcoholic liver disease or from alcoholic attributable mortality. It does have significantly increased differences from Scotland for:
• Alcoholic liver disease treated in the acute services;
• Non dependent alcohol abuse treated in the acute services;
• Alcoholic psychoses and dependency treated in psychiatric hospitals.

Greater significant differences are generally observed in the younger age group, that is under 40 years of age.

For alcoholic psychoses and dependence in psychiatric hospitals there is a highly significant increased difference from Scotland in utilisation for males under the age of 25.
Dumbarton

In this Local Government District the following should be noted:-

- In males the average six year death rate from alcoholic liver disease is 86% above the Scottish average and for females 12%, but the latter is not statistically significant.

- For alcohol attributable mortality males are 19% above Scotland and females 9%, but neither of these are statistically significant.

- For the period 1988-93 the acute service utilisation rate for alcoholic liver disease is 7% below Scotland for males and 32% below Scotland for females. The latter is statistically significant.

- For alcoholic dependence and psychoses, in the acute service the male rate is 3% below Scotland, while the female rate is 18% below Scotland. Neither of these is statistically significant.

- In non-dependent abuse for Dumbarton males are 14% below Scotland and 40% for females. The latter is statistically significant.

- For alcoholic psychoses and dependence treated in psychiatric hospitals the average six year rate for males is 12.5% above Scotland with males 25-39 years of age 30% above Scotland. These are statistically significant.

  For females of all ages the six year average rate is 28% below Scotland, which is statistically significant.

Summary

Dumbarton has an atypical picture compared to the remainder of the Health Board and compared to Scotland. It has a significant higher death rate in males from alcoholic liver disease but not from alcohol attributable mortality. However, in all other parameters which would indicate excessive alcohol misuse the rates are all below Scotland except in dependence and psychoses in psychiatric hospitals where it is 12% above Scotland for males.

Further work requires to be done in Dumbarton to identify these anomalies.
Argyll & Bute

- The six year average deaths from alcoholic liver disease are 26% and 40% below the Scottish average rates respectively for males and females, but neither of these is statistically significant.

- For attributable mortality the male rate is 2% below Scotland and the female rate is 4% below Scotland, neither of which is statistically significant.

- Discharges from acute hospitals for alcoholic liver disease for males is the same as Scotland but for females it is 36% below Scotland.

- For alcoholic psychoses and dependence treated in acute hospitals the male rates is 282% above Scotland and the female rate is 285% above the Scottish rate.

  For males 25-39 years of age the rate is 402% above Scotland. While for females under 25 the rate is 728% above Scotland and for 25 - 39 years of age the rate is 429% above Scotland.

- For non dependent alcohol abuse the male rate is 11% above Scotland, with the highest increased difference from Scotland being in those under the age of 25.

  For females, the six year average is only 2% above Scotland, but for those under 25 the increased difference is 52%.

- For alcoholic psychoses treated in psychiatric hospitals the six year average rates are 64% above Scotland for males, with a 60% difference in those aged 25 - 39 years, and for females the rate is 54% above Scotland, the highest difference in rates is for females under the age of 25 which is 267% above Scotland.

Summary

This district has low death rates which can be attributable to alcohol. It also has low utilisation of the acute hospitals for alcoholic liver disease but has high utilisation of the acute services and psychiatric services for alcoholic psychoses and dependence.

The picture tends to be atypical and requires further investigation.
### APPENDIX 1

#### ALCOHOL ATTRIBUTABLE MORTALITY: Diagnostic Label

<table>
<thead>
<tr>
<th>Diagnostic Label</th>
<th>ICD 9th Code</th>
<th>AGE GROUP</th>
<th>AAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic Psychoses</td>
<td>291</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Alcohol Dependence Syndrome</td>
<td>303</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Alcohol Abuse</td>
<td>305.0</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Alcoholic Polyneuropathy</td>
<td>357.3</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Alcoholic Cardiomyopathy</td>
<td>425.5</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Alcoholic Gastritis</td>
<td>535.3</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Alcoholic Fatty Liver</td>
<td>571.0</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Acute Alcoholic Hepatitis</td>
<td>571.1</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Alcoholic Cirrhosis of the Liver</td>
<td>571.2</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Alcoholic Liver Damage, Unspecified</td>
<td>571.3</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Excess Blood Alcohol Level</td>
<td>790.3</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
<tr>
<td>Alcohol Poisonings</td>
<td>E860</td>
<td>&gt; 0</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Note 1: AAF=Alcohol Attributable Fraction - derived from clinical and injury surveillance studies.

Note 2: ICD9 codes for "Other injuries" are E800 to E999 - (E810 to E845 + E880 to E889 + E910 + E950 to E969).

#### ALCOHOL RELATED MORTALITY: Diagnostic Label

<table>
<thead>
<tr>
<th>Diagnostic Label</th>
<th>ICD 9th Code</th>
<th>AGE GROUP</th>
<th>AAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer of lip/oral cavity/pharynx</td>
<td>140-149</td>
<td>&gt;= 35</td>
<td>0.50</td>
</tr>
<tr>
<td>Cancer of the oesophagus</td>
<td>150</td>
<td>&gt;= 35</td>
<td>0.75</td>
</tr>
<tr>
<td>Cancer of the stomach</td>
<td>151</td>
<td>&gt;= 35</td>
<td>0.20</td>
</tr>
<tr>
<td>Cancer of the liver/intrahepatic bile ducts</td>
<td>155</td>
<td>&gt;= 35</td>
<td>0.15</td>
</tr>
<tr>
<td>Cancer of the larynx</td>
<td>161</td>
<td>&gt;= 35</td>
<td>0.50</td>
</tr>
<tr>
<td>Essential hypertension</td>
<td>401</td>
<td>&gt;= 35</td>
<td>0.08</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>430-438</td>
<td>&gt;= 35</td>
<td>0.07</td>
</tr>
<tr>
<td>Respiratory tuberculosis</td>
<td>011-012</td>
<td>&gt;= 35</td>
<td>0.25</td>
</tr>
<tr>
<td>Pneumonia and influenza</td>
<td>480-487</td>
<td>&gt;= 35</td>
<td>0.05</td>
</tr>
<tr>
<td>Diseases of oesophagus/stomach/duodenum</td>
<td>530-537</td>
<td>&gt;= 35</td>
<td>0.10</td>
</tr>
<tr>
<td>Cirrhosis of liver (alcohol not mentioned)</td>
<td>571.5-571.6</td>
<td>&gt;= 35</td>
<td>0.50</td>
</tr>
<tr>
<td>Acute pancreatitis</td>
<td>577.0</td>
<td>&gt;= 35</td>
<td>0.42</td>
</tr>
<tr>
<td>Chronic pancreatitis</td>
<td>577.1</td>
<td>&gt;= 35</td>
<td>0.60</td>
</tr>
<tr>
<td>Motor vehicle accidents</td>
<td>E810-E825</td>
<td>&gt; 0</td>
<td>0.42</td>
</tr>
<tr>
<td>Other road vehicle accidents</td>
<td>E826-E829</td>
<td>&gt; 0</td>
<td>0.20</td>
</tr>
<tr>
<td>Water transport accidents</td>
<td>E830-E838</td>
<td>&gt; 0</td>
<td>0.20</td>
</tr>
<tr>
<td>Air/space transport accidents</td>
<td>E840-E845</td>
<td>&gt; 0</td>
<td>0.16</td>
</tr>
<tr>
<td>Accidental falls</td>
<td>E880-E888</td>
<td>&gt; 15</td>
<td>0.35</td>
</tr>
<tr>
<td>Accidents caused by fires</td>
<td>E890-E899</td>
<td>&gt; 0</td>
<td>0.45</td>
</tr>
<tr>
<td>Accidental drownings</td>
<td>E910</td>
<td>&gt; 0</td>
<td>0.38</td>
</tr>
<tr>
<td>Other injuries</td>
<td>See Note 2</td>
<td>&gt;= 15</td>
<td>0.25</td>
</tr>
<tr>
<td>Suicide</td>
<td>E950-E959</td>
<td>&gt;= 15</td>
<td>0.28</td>
</tr>
<tr>
<td>Homicide</td>
<td>E960-E969</td>
<td>&gt;= 15</td>
<td>0.46</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>250</td>
<td>&gt;= 35</td>
<td>0.05</td>
</tr>
</tbody>
</table>
APPENDIX II

GRAPHS OF ALCOHOL STATISTICS
Figure 1. All deaths attributed to alcohol or cirrhosis in Scotland - Rates/100,000 pop. by mainland Health Board of residence 1992 (ICD 9th codes 291,303,305.0,425.5,571,980.0 pooled)

Scotland 106.4
Argyll & Clyde 133.7
Ayrshire & Arran 109.3
Borders 85.5
Dumfries & Galloway 90
Fife 56.3
Forth Valley 94.6
Grampian 101.7
Greater Glasgow 112.5
Highland 119
Lanarkshire 93.5
Lothian 110.1
Tayside 102.1

Orkney = 132.8
Shetland = 217.8
Western Isles = 424.9
Figure 2. Alcoholic Liver Mortality
Deaths in Scotland and the Argyll & Clyde Health Board (ACHB) area 1982-1993
All Residents (rates per 100,000 population)
Figure 3. All Deaths Directly Attributable to Alcohol
Deaths in Scotland and the Argyll & Clyde Health Board (ACHB) area 1982-1993
All Residents (rates per 100,000 population)
Figure 4. Alcoholic Liver Disease
General hospital discharges in Scotland and the Argyll & Clyde Health Board (ACHB) area 1982-1993
All Residents (rates per 100,000 population)
Figure 5. Alcoholic Psychoses & Alcohol Dependence Syndrome
General hospital discharges in Scotland and the Argyll & Clyde
Health Board (ACHB) area 1982-1993
All Residents (rates per 100,000 population)
Figure 6. Non-dependent Alcohol Abuse
General hospital discharges in Scotland and the Argyll & Clyde
Health Board (ACHB) area 1982-1993
All Residents (rates per 100,000 population)
Figure 7. Alcoholic Psychoses & Alcohol Dependence Syndrome
Psychiatric hospital admissions in Scotland and the Argyll & Clyde
Health Board (ACHB) area 1982-1993
All Residents (rates per 100,000 population)
Figure 8. A comparison of alcohol statistics between Scotland and the ACHB area from 1982 to 1993:
Percentage Difference in Average 12 Year Rates per 100,000 Population
Deaths, General Hospital Discharges & Psychiatric Hospital Admissions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic liver mortality</td>
<td>31%</td>
<td>11%</td>
</tr>
<tr>
<td>Alcohol attributable mortality</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>Alcoholic liver disease</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Psychoses &amp; dependence</td>
<td>64%</td>
<td>36%</td>
</tr>
<tr>
<td>Non-dependent abuse (SMR1)</td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>Liver disease (ICD 571.0-.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Various (ICD 571.0-.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoses &amp; dependence (SMR1)</td>
<td>-2%</td>
<td>-11%</td>
</tr>
<tr>
<td>Liver disease (ICD 291+303)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Various (ICD 291+303)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * denotes statistically significant difference
Figure 9. Differences in alcohol related hospital statistics (residents aged under 40) between Scotland & the ACHB area from 1982 to 1993:
Percentage Difference in Average 12 Year Rates per 100,000 Population
General Hospital Discharges & Psychiatric Hospital Admissions

Note: * denotes statistically significant difference
Figure 10. Inverclyde: Alcohol Statistics in Relation to Scotland 1988-1993
Percentage Difference in Average 6 Year Rates per 100,000 Population
Deaths, General Hospital Discharges & Psychiatric Hospital Admissions

Note: * denotes statistically significant difference
Figure 11. Renfrew: Alcohol Statistics in Relation to Scotland 1988-1993

Percentage Difference in Average 6 Year Rates per 100,000 Population
Deaths, General Hospital Discharges & Psychiatric Hospital Admissions

Note: * denotes statistically significant difference
Figure 12. Dumbarton: Alcohol Statistics in Relation to Scotland 1988-1993

Percentage Difference in Average 6 Year Rates per 100,000 Population Deaths, General Hospital Discharges & Psychiatric Hospital Admissions

<table>
<thead>
<tr>
<th>Category</th>
<th>Dumbarton Rate</th>
<th>Scotland Rate</th>
<th>Percentage Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Dependence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liver Disease Mortality (ICD 571.0-3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychoses &amp; Liver Disease Mortality (ICD 291+303) (SMR1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol Abuse Mortality (ICD 291+303) (SMR1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol Psychoses &amp; Nondependent Psychoses &amp; Liver Disease Mortality (ICD 291+303) (SMR4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note: * denotes statistically significant difference</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- 86%* males
- 12% females
- 19% males
- 9% females
- 7% males
- 3% females
- 40%* males
- 14%* females
- 28%* males
- 12% females
- 32%* males
- 3% females
- 14%* males
- 9% females
- 40%* males
- 3% females
- 40%* males
- 3% females
Figure 13. Argyll & Bute: Alcohol Statistics in Relation to Scotland 1988-1993
Percentage Difference in Average 6 Year Rates per 100,000 Population
Deaths, General Hospital Discharges & Psychiatric Hospital Admissions

-26% -40%  4%  0%  285%*  282%*  11%*  2%  64%*  53%*

-50  0  50  100  150  200  250  300  350
Percentage (Argyll & Bute above/below Scotland)

-2%  0%  -36%*  11%*  2%  11%*  2%  11%*  2%  11%*  2%

alcoholic alcohol alcoholic psychoses & nondependent psychoses &
liver liver disease dependence alcohol abuse dependence
mortality attributable liver disease (SMR1) (SMR1) (SMR1) (SMR1)
ICD 571.0-.3 ICD various ICD 571.0-.3 ICD 291+303 ICD 305.0 ICD 291+303

Note: * denotes statistically significant difference
Figure 14. Largest positive differences in alcohol statistics between local government districts in the ACHB area and Scotland 1988 to 1993:
Percentage Difference in Average 6 Year Rates per 100,000 Population

Note: * denotes statistically significant difference
Figure 15. Key statistically significant differences in alcohol related hospital statistics (by age and sex) between districts in the ACHB area and Scotland from 1988 to 1993:

Percentage Difference in Average 6 Year Rates per 100,000 Population

General Hospital Discharges & Psychiatric Hospital Admissions

Key to districts:
- A+B = Argyll & Bute
- INV = Inverclyde
- REN = Renfrew

- Text above bars:
  - Percentage
  - District
  - Age Group

alcoholic liver disease (SMR1)
ICD 571.0-.3

psychoses & dependence (SMR1)
ICD 291+303

nondependent abuse (SMR1)
ICD 305.0

psychoses & dependence (SMR4)
ICD 291+303
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(6) Kemp I, Carstairs V. The reliability of death certificate data as a measure of the level of alcohol problems. Community Medicine, 1987; 9: 146-51


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