

# Measuring the Units

A review of patients who died with alcohol-related liver disease



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alcohol-related liver disease

A report by the National Confidential Enquiry into  
Patient Outcome and Death (2013)

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## Principal Recommendations

All patients presenting to hospital services should be screened for alcohol misuse. An alcohol history indicating the number of units drunk weekly, drinking patterns, recent drinking behaviour, time of last drink, indicators of dependence and risk of withdrawal should be documented. *(All Doctors)*

All patients presenting to acute services with a history of potentially harmful drinking, should be referred to alcohol support services for a comprehensive physical and mental assessment. The referral and outcomes should be documented in the notes and communicated to the patient's general practitioner. *(All Doctors)*

Each hospital should have a 7-day Alcohol Specialist Nurse Service, with a skill mix of liver specialist and psychiatry liaison nurses to provide comprehensive physical and mental assessments, Brief Interventions and access to services within 24 hours of admission<sup>2,15</sup>. *(Medical Directors)*

A multidisciplinary Alcohol Care Team, led by a consultant with dedicated sessions, should be established in each acute hospital<sup>2,15</sup> and integrated across primary and secondary care. *(Medical Directors)*

All patients admitted with decompensated alcohol-related liver disease should be seen by a specialist gastroenterologist / hepatologist at the earliest opportunity after admission. This should be within 24 hours and no longer than 72 hours after admission to hospital. *(Consultants)*

Escalation of care should be actively pursued for patients with alcohol-related liver disease, who deteriorate acutely and whose background functional status is good. There should be close liaison between the medical and critical care teams when making escalation decisions. *(Consultants)*

2. Moriarty K J, Alcohol-Related Liver Disease: Meeting the challenge of improved quality of care and improved quality of care and better use of resources. 2010. A Joint Position Paper on behalf of the British Society of Gastroenterology, Alcohol Health Alliance UK, British Association for Study of the Liver <http://www.bsg.org.uk/clinical/general/publications.html>
15. Published on behalf of the British Society of Gastroenterology and Bolton NHS Foundation Trust, Quality and Productivity: Alcohol Care Teams: reducing acute hospital admissions and improving quality of care. 2012. <http://www.evidence.nhs.uk/qipp>

## Introduction

There have been a number of documents over the last decade highlighting the care of this group of patients, making recommendations to improve outcome. The National Plan for Liver Services<sup>1</sup> in England published in 2009 identified that secondary care of liver disease was poorly organised and suggested that services for liver patients could be improved at relatively little cost to the NHS. In 2010, the British Society of Gastroenterology, Alcohol Health Alliance UK and the British Association for Study of the Liver published a joint position statement on the care of patients with alcohol-related disease<sup>2</sup>. This report made 11 key recommendations about how the average district general hospital could organise its services to improve care for patients with alcohol-related problems. There has been national guidance from the National Institute for Health and Clinical Excellence<sup>3</sup> and reports from the Royal College of Physicians of London<sup>4</sup> and the NHS Confederation<sup>5</sup>. The National end of life care intelligence network<sup>6</sup> has recently documented concerns about end of life care for this group of patients and the variations in that care. The Chief Medical Officer's 2011 report published last year highlighted liver disease as one of the three key areas for population health in England<sup>7</sup>.

This report highlights the quality of care provided to patients who died with a diagnosis of alcohol-related liver disease (ARLD). ARLD was previously known as alcoholic liver disease (ALD). The name has changed but have the issues surrounding the care of this patient group?

The recent Atlas of Liver Care for England<sup>8</sup> tells us that there is:

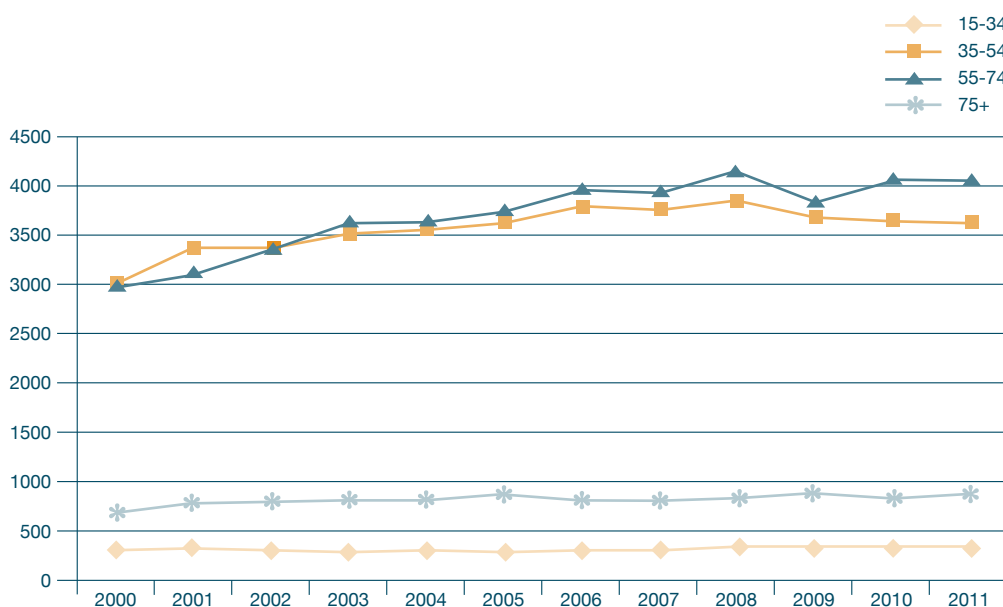
*“An 88% rise in age-standardised mortality from chronic liver disease, the only one of the major diseases which is still increasing, of which alcohol-related liver disease is one of the primary causes, along with viral hepatitis. Cirrhosis deaths are rising in England while falling in most other EU countries. And the growing impact of*

*alcohol misuse is estimated to cost the NHS £3.5bn a year. Almost one in four of all adults drink in a way that is potentially or actually harmful.”*

Data from the Office for National Statistics demonstrated that there were 8,748 alcohol-related liver disease deaths in the UK in 2011<sup>9</sup>. And whilst that was a minor reduction on the previous year the overall trend is seen to be increasing (Figure 1). A recent report by Sheron et al also describes the enormous extent of alcohol-related morbidity and mortality nationally and internationally<sup>10</sup>.

ARLD is a disease of the young - whilst mortality from liver disease, has risen steadily, the average age of death is only 59 years and is falling<sup>6</sup>. This is in contrast to other major causes of mortality such as heart and lung disease or stroke where the average age of death is over 80 years and is rising due to improved public health and medical intervention.

In England there is a marked geographic variation in both the incidence and the care of patients admitted with alcohol-related liver disease<sup>8</sup> and the influence of deprivation is well documented. Hospital episode statistics for 2010/11 show a rise in the number of hospital admissions wholly attributable to alcohol to 198,900, this was a 2.1% rise on 2009/10<sup>11</sup> and a 40% increase since 2002/03. Admissions to intensive care for alcohol-related liver disease alone increased 3 fold between 1990 and 2005, accounting for 10,000 bed days in 2005<sup>12</sup> and have seen a further increase between 2005 and 2011<sup>13</sup>. Despite this rise in critical care admissions it is still reported by those caring for this group of patients that there is a reluctance by some health care professionals to admit patients to intensive care for organ support, through what appears to be a pessimistic or negative attitude to patients with ARLD.



**Figure 1: Trends in number of deaths from alcohol-related liver disease 2000-2011 by age** Source data: Office for National Statistics

Specialists who regularly care for patients with alcohol-related liver disease recognise that the treatment options have changed considerably within the last 20 years. Brief intervention has been shown to be effective<sup>14</sup>. For every eight patients offered this type of advice, one will either stop drinking or reduce their alcohol consumption to less harmful levels. However, it is widely believed that intervention is not always coherently or comprehensively implemented.

Other factors recognised as helping to improve outcome for patients with decompensation of alcohol-related liver disease are the early identification (or prevention) and treatment of sepsis, control of fluid status to prevent deterioration in renal function, and aggressive management of variceal haemorrhage.

Patients with ARLD will have often been frequent users of health services. There may be opportunities to intervene at an earlier stage. These opportunities for intervention have the potential to prevent individuals developing

the problems encountered in their final admission. A sentiment echoed by the Chief Medical Officer, in her 2011 report<sup>7</sup>, where she stated that there should be “*improved detection of the early signs of liver disease through appropriate risk assessment strategies in local populations and the use of appropriate tests to identify liver disease that can be reversed or treated.*” There is concern within the specialties that care for this group of patients that these opportunities are not always taken.

The specialists directly involved in the care of patients with ARLD are predominantly gastroenterologists who train in liver disease through subspecialty training. Hepatology has not been recognised as a specialty in its own right. If patients are admitted straight to a specialist unit they are more likely to be admitted under a specialist with a primary interest in liver disease, or at least have access to an early review by a senior specialist in this field. However, most hospital admissions occur via the emergency departments of acute general hospitals. This means that emergency patients with ARLD could be

admitted under any specialty; which makes it ever more important that clinicians from all specialties are alive to the signs and symptoms of ARLD and the complications that might arise from it. A detailed alcohol history taken at admission should facilitate this process, as without it early recognition may be missed. As a minimum, admitting specialties should be able to offer support and advice to those patients in whom early intervention may reduce the chance of future ARLD. Specialist nurses have a key role to play in providing advice and support for patients and co-ordination of care for alcohol withdrawal. Due to their clinical expertise and their regular contact with this group of patients they are often the first to identify the severity of a patient's problems. Well designed alcohol teams can therefore improve the care received by patients<sup>15</sup>.

As shown above there is a high volume of recent publications all recognising similar concerns about patients with ARLD. A recent editorial expressed almost identical concerns to the issues raised in this report<sup>16</sup>.

The fact that there are so many should highlight the fact that this is an increasing problem. Many of the reports focus on one country/region or liver disease more generally.

The study presented in this report was proposed to examine aspects of the care of a group of patients who died from alcohol-related liver disease in hospital across England, Wales, Northern Ireland, the Channel Islands and the Isle of Man.

Organisational issues along with aspects of clinical practice outlined above were reviewed.

## 1 – Method and Data Returns

### Study aim

To identify the remediable factors in the quality of care provided to patients who died with a diagnosis of alcohol-related liver disease.

### Expert group

The Expert Group comprised a multidisciplinary group of consultants in: hepatology, gastroenterology, liver surgery, anaesthesia/critical care and addiction medicine.

### Objectives

The Expert Group identified four main objectives that would address the primary aim of the study, and these will be addressed throughout the following chapters:

- Recognition of degree of sickness and early intervention
- Missed opportunities during the final admission
- Missed opportunities during previous admissions
- Involvement of support services

### Hospital participation

National Health Service hospitals in England, Wales and Northern Ireland were expected to participate as well as hospitals in the independent sector and public hospitals in the Isle of Man, Guernsey and Jersey.

Within each hospital, a named contact, referred to as the NCEPOD Local Reporter, acted as a link between NCEPOD and the hospital staff, facilitating case identification, dissemination of questionnaires and data collation.

### Study population

All patients who died in hospital with a diagnosis of alcohol-related liver disease during the six-month study period, 1st January 2011 to 30th June 2011 inclusive. There were no age restrictions for inclusion. The included ICD10 codes were:

- K70 Alcoholic liver disease**
- K70.0 Alcoholic fatty liver**
- K70.1 Alcoholic hepatitis**
- K70.2 Alcoholic fibrosis and sclerosis of liver**
- K70.3 Alcoholic cirrhosis of liver**  
Alcoholic cirrhosis NOS
- K70.4 Alcoholic hepatic failure**  
Alcoholic hepatic failure:
  - no other specified
  - acute
  - chronic
  - subacute
  - with or without hepatic coma
- K70.9 Alcoholic liver disease, unspecified**

The number of cases for which questionnaire completion and photocopied case notes were requested, was limited to a maximum of three per hospital.

### Case ascertainment

Patients were identified from all participating hospitals retrospectively via ICD10 coding.

### Questionnaires and case notes

Two questionnaires were used to collect data for this study; a clinician questionnaire for each patient and an organisational questionnaire for each hospital participating in the study.



**Clinician questionnaire**

This questionnaire was sent to the consultant responsible for the patient at the time of their death. Information was requested on the patient's presenting features, alcohol history, investigations/procedures carried out, treatment, continuing care, escalation in care, treatment limitation decisions, cause of death and previous hospital admissions/potential missed opportunities.

**Organisational questionnaire**

The data requested in this questionnaire included information on the number of ARLD admissions, gastroenterology/liver services, alcohol services, guidelines and treatment pathways relevant to alcohol-related disease.

**Case notes**

Photocopied case note extracts were requested for each case that was to be peer reviewed:

Final inpatient admission

- All inpatient annotations/medical notes for the patient's final admission
- Nursing notes
- Nutrition/dietitian notes
- Operation notes, anaesthetic charts and consent forms
- Observation charts
- Haematology/biochemistry results
- Fluid balance charts
- DNACPR forms
- Discharge letter/summary
- Postmortem report

Previous hospital admissions (going back two years from the final admission)

- Initial clerking and first 24 hours of inpatient annotations/medical notes
- Admission blood results
- Discharge letter/summary

**Advisor group**

A multidisciplinary group of Advisors was recruited to peer review the case notes and associated clinician questionnaires. The group of Advisors comprised

consultants, associate specialists, trainees and clinical nurse specialists, from the following specialties: hepatology, gastroenterology, anaesthesia, intensive care medicine, acute medicine, pharmacy and clinical toxicology.

Questionnaires and case notes were anonymised by the non-clinical staff at NCEPOD. All patient identifiers were removed. Neither the Clinical Co-ordinators at NCEPOD, nor the Advisors, had access to patient identifiable information.

After being anonymised, each case was reviewed by at least one Advisor within a multidisciplinary group. At regular intervals throughout the meeting, the Chair allowed a period of discussion for each Advisor to summarise their cases and ask for opinions from other specialties or raise aspects of the case for discussion.

Advisors answered a number of specific questions by direct entry into a database, and were also encouraged to enter free text commentary at various points.

The grading system below was used by the Advisors to grade the overall care each patient received:

**Good practice:** A standard that you would accept from yourself, your trainees and your institution.

**Room for improvement:** Aspects of **clinical** care that could have been better.

**Room for improvement:** Aspects of **organisational** care that could have been better.

**Room for improvement:** Aspects of both **clinical and organisational** care that could have been better.

**Less than satisfactory:** Several aspects of **clinical and/or organisational** care that were well below that you would accept from yourself, your trainees and your institution.

**Insufficient data:** Insufficient information submitted to NCEPOD to assess the quality of care.

## Quality and confidentiality

Each case was given a unique NCEPOD number. The data from all questionnaires received were electronically scanned into a preset database. Prior to any analysis taking place, the data were cleaned to ensure that there were no duplicate records and that erroneous data had not been entered during scanning. Any fields that contained data that could not be validated were removed.

## Data analysis

Following cleaning of the quantitative data, descriptive data summaries were produced.

The qualitative data collected from the Advisors' opinions and free text answers in the clinician questionnaires were coded, where applicable, according to content to allow quantitative analysis. The data were reviewed by an NCEPOD Clinical Co-ordinator, a Researcher, and a Clinical Researcher, to identify the nature and frequency of recurring themes.

Case studies have been used throughout this report to illustrate particular themes.

All data were analysed using Microsoft Access and Excel by the research staff at NCEPOD.

The findings of the report were reviewed by the Expert Group, Advisors and the NCEPOD Steering Group prior to publication.

## Data returns

In total 2454 patients from 218 hospitals were identified as meeting the study inclusion criterion (Figure 1.1). When the sampling criteria of three cases per hospital was applied, 594 cases were selected for inclusion in the main data collection. A total of 520/594 (88%) completed clinician questionnaires and 450 sets of case notes were returned to NCEPOD. The Advisors were able to assess 385 cases, the remainder of the returned case note extracts were either too incomplete for assessment or were returned after the final deadline and last Advisor meeting.

## Study sample denominator by chapter

Within this study the denominator will change for each chapter and occasionally within each chapter. This is because data have been taken from different sources depending on the analysis required. For example, in some cases the data presented will be a total from a question taken from the clinician questionnaire only, whereas some analysis may have required the clinician questionnaire and the Advisors' view taken from the case notes.

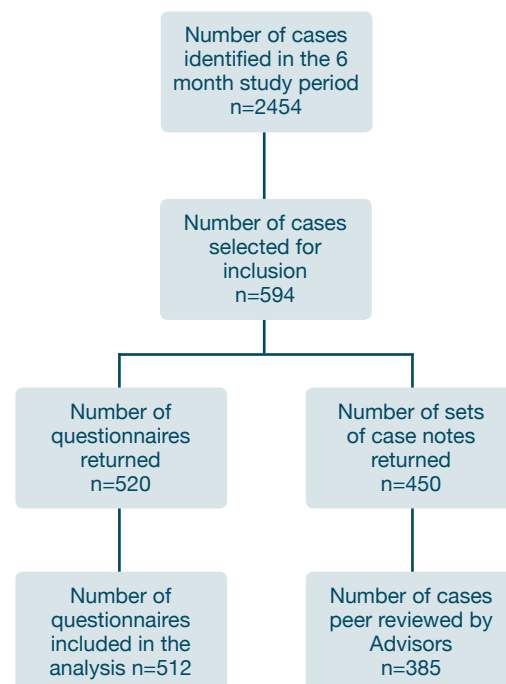
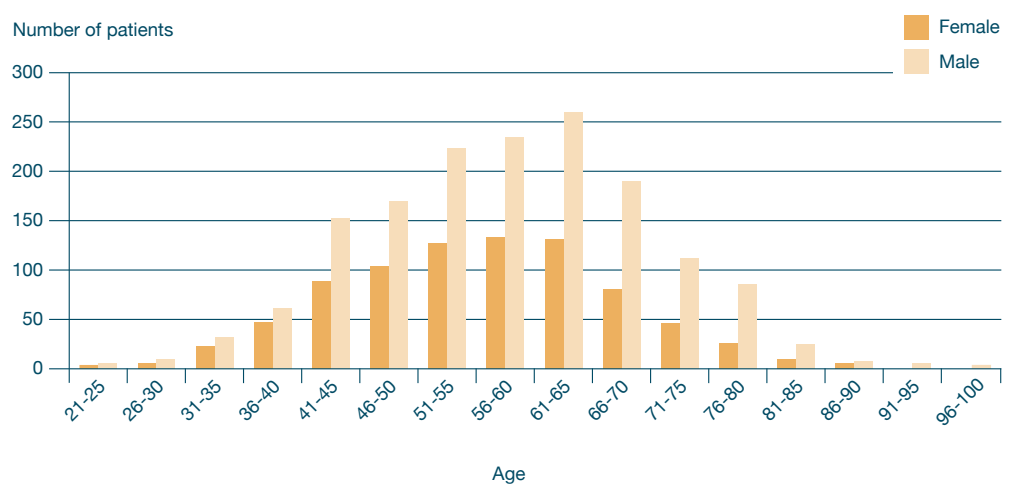


Figure 1.1 Data returns

## 2 – Demographics



**Figure 2.1 Age in years of the whole study population**

During the six month study period 2454 patients were identified to NCEPOD as dying with a diagnosis of alcohol-related liver disease (ARLD). The age and sex of the patient was provided for 2418 patients (Figure 2.1), approximately 66% (1584/2418) of all the ARLD deaths identified were male.

Age comparisons for the male and female patients are shown in Table 2.1. The age range, mean, median and mode were all slightly lower for female patients.

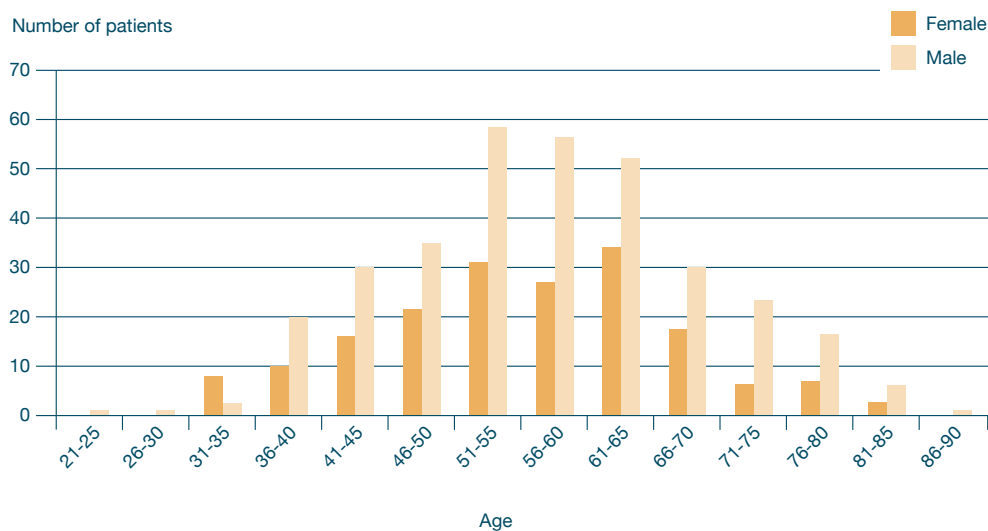
**Table 2.1 Age in years of the whole study population**

Age	Female	Male
Range	22 – 88	24 – 97
Mean	56.1	58.0
Median	56	58
Mode	59	63
Number of patients	834	1584

**Table 2.2 Age in years of the sampled study population**

Age	Female	Male
Range	31 – 83	25 – 87
Mean	56.0	57.3
Median	56	57
Mode	55	51
Number of patients	181	331

The demographics of the sampled study population were similar to the whole study population (Figure 2.2), with approximately 65% (331/512) of the patients being male and an overall age range of 25 – 87 years. The breakdown of age demographics by gender are shown in Table 2.2.



**Figure 2.2 Age in years of the sampled study population**

The above patient demographics are similar to those described elsewhere for patients dying with a diagnosis of ARLD. This is therefore a relatively young group of patients when compared to mortality caused by other organ specific diseases.

### Multiple hospital admissions

It is well documented that many patients whom succumb to ARLD have multiple hospital admissions prior to the episode in which they die. In the current study, 1752/2454 (71%) of the patients identified to NCEPOD had one or more admissions to hospital in the two years prior to the admission in which they died (Table 2.3). This figure may be lower than the actual number of patients with previous admissions as it only relates to admissions to the hospital in which they died.

Similar data were collected from the clinician questionnaire for the sampled population. Approximately three quarters (313/413; 76%) of patients had an admission to the same hospital in which they died, in the five years preceding their final admission (Table 2.4).

**Table 2.3 Previous hospital admissions – whole patient sample**

Previous hospital admissions (in the 2 years prior to death)	Number of patients	%
Yes	1752	71.4
No	702	28.6
<b>Total</b>	<b>2454</b>	

**Table 2.4 Previous hospital admissions – sampled study population**

Previous hospital admissions (in the 5 years prior to death)	Number of patients	%
Yes	313	75.8
No	100	24.2
<b>Subtotal</b>	<b>413</b>	
Unknown	67	
Not answered	32	
<b>Total</b>	<b>512</b>	

There was also a subgroup of patients that were known to present to other hospitals, in addition to the one in which they died (Table 2.5). Despite the knowledge that patients frequented more than one hospital, the clinician completing the patient care questionnaire could only identify documentation between hospitals in 47/88 cases.

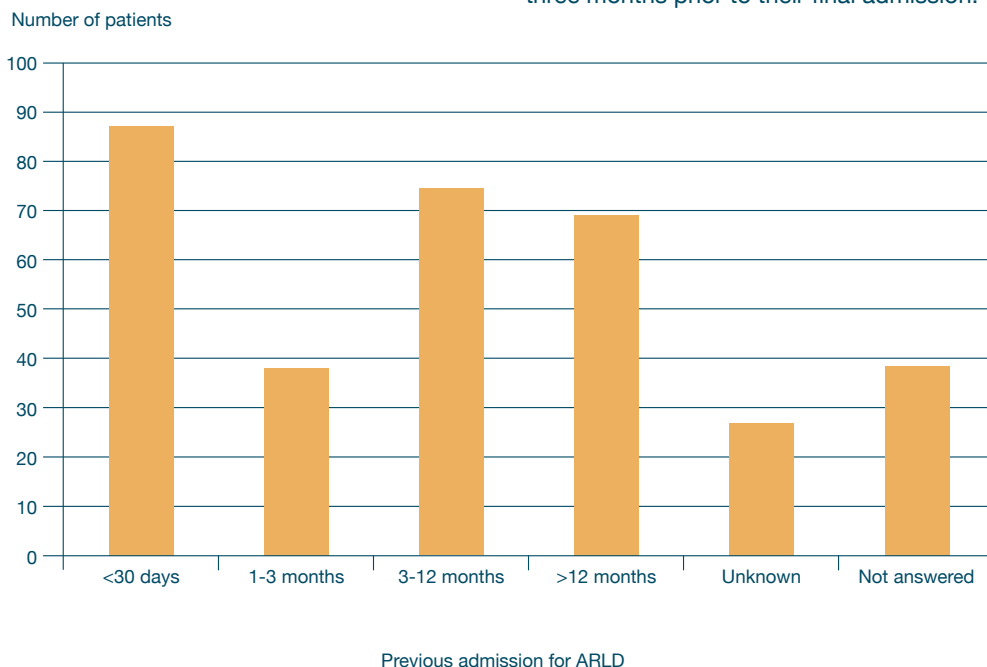
**Table 2.5 Patients presented to other hospitals**

Known to present to other hospitals	Number of patients	%
Yes	88	18.2
No	395	81.8
<b>Subtotal</b>	<b>483</b>	
Not answered	29	
<b>Total</b>	<b>512</b>	

**Table 2.6 Previous admissions for ARLD – sampled study population**

Previous admission for ARLD	Number of patients	%
Yes	336	68.7
No	153	31.3
<b>Subtotal</b>	<b>489</b>	
Not answered	23	
<b>Total</b>	<b>512</b>	

Data were also collected on previous admissions specifically for ARLD. Almost 70% (336/489) of patients were known to have been admitted previously for ARLD (Table 2.6). The interval from the last known admission for ARLD to the admission in which the patient died is shown in Figure 2.3. The interval for 270/336 patients was known and in 87/270 (32%) cases the patient had been admitted within 30 days of their final admission. A further 38 patients were admitted to hospital between one and three months prior to their final admission.



**Figure 2.3 Interval from the last known admission for ARLD to the admission in which the patient died**

In the whole study population, the 1752 patients who were reported as having one or more previous hospital admission amassed 7656 admissions between them in the last two years (Table 2.7). In approximately half (3248/6749; 48%) of these admissions, a diagnosis code for ARLD was recorded.

**Table 2.7 Previous admissions for ARLD – whole study population**

Previous admission for ARLD	Number of admissions	%
Yes	3248	48.1
No	3501	51.9
<b>Subtotal</b>	<b>6749</b>	
Not answered	907	
<b>Total</b>	<b>7656</b>	

The data were further analysed to determine how many patients the 3248 admissions represented. In total 1082 patients had one or more hospital admissions for ARLD (Table 2.8) in the two years prior to the admission in which they died.

**Table 2.8 Previous admissions for ARLD – whole study population**

Previous admission for ARLD	Number of patients	%
Yes	1082	61.8
No	551	31.4
Diagnosis unknown	119	6.8
<b>Subtotal</b>	<b>1752</b>	
No previous admissions	702	
<b>Total</b>	<b>2454</b>	

### 3 – Overall assessment of care

The Advisors were asked to assign a grade to the overall care received by each patient in the study (Figure 10.1). This grade relates to the care the patient received during their final admission.

Overall care was graded as good in 172/363 (47%) cases. In a large number of cases, 161/363 (44%) the Advisors' judged that there was room for improvement in the clinical and/or organisational care of the patient. There were 30 patients for which it was felt that the overall care was less than satisfactory.

#### Summary

This was a study of missed opportunities. The care of patients who died with a diagnosis of alcohol-related liver disease (ARLD) was rated as less than good in more than half of the cases reviewed.

The majority of patients had been to hospital at least once in the two years prior to the admission when they died but not enough was done about their harmful drinking at that time. There was a failure to screen adequately for harmful use of alcohol and even when this was identified, patients were not referred for support. When patients were admitted with signs and symptoms of serious liver damage, there were opportunities to improve their care by doing simple things such as optimising fluid management and screening for or treating sepsis. These were often missed.

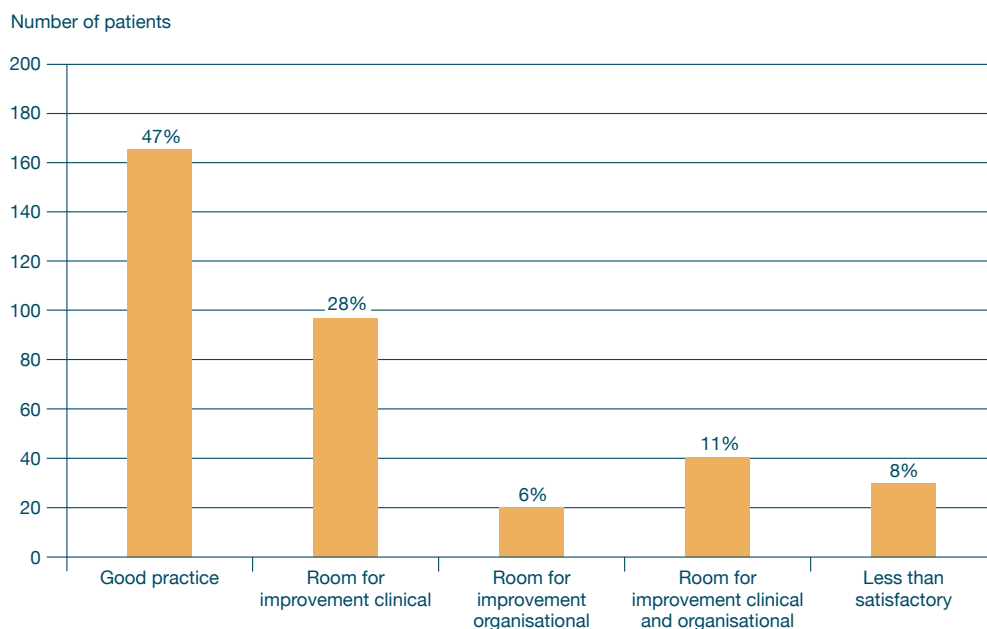


Figure 10.1 overall assessment of care

In a complex group of patients, specialist review would generally have been of benefit to define the best treatment options. This was frequently delayed and sometimes did not happen at all.

When organ failure occurred and an escalation of treatment was indicated, again the additional treatment that was needed was often not given.

Both the Advisors who reviewed the cases and the clinicians who looked after the patients in their own hospitals often agreed that there was room for improvement in care due to these missed opportunities.

These findings should be taken as a further opportunity to improve the care of patients with ARLD. The challenge now is to use this report and its recommendations to organise our services, improve the assessment of patients and to ensure early specialist review and appropriate escalation of care for this complex group of patients.



## Key findings and recommendations

### Key findings - Demographics

During the six-month study period 2454 patients were identified as dying with a diagnosis of ARLD.

66% (1584/2418) of all the ARLD deaths were male.

The median age at death for females was 56 compared to 58 for males.

71% of patients (1752/2454) had a previous admission to hospital in the two years prior to their final admission.

62% (1082/1752) of patients that had a previous admission to hospital, had an admission in which ARLD was diagnosed.

In the sampled population, 125/270 (46%) patients for which the interval from previous to final admission was known had an ARLD related admission to hospital in the three months prior to the admission in which they died.

18% (88/483) of patients were known to present to additional hospitals. Documentation between hospitals was only identifiable in 47/88 cases.

### Recommendation - Demographics

1. A system should be in place to ensure that all patients admitted to hospital and subsequently identified as being at risk from an alcohol-related disease, are promptly referred to an appropriate support service. This system should be subject to regular audit. *(Clinical Directors and Consultants)*

## Key findings - Organisational data

The presence of consultant hepatologists was restricted to 52/191 (28%) hospitals, 34 of which were University Teaching Hospitals.

64/87 of small District General Hospitals, 42/54 of large District General Hospitals and 44/54 of University Teaching Hospitals had one or more consultants with an interest or specialism in liver disease (Figure 3.1).

All except three hospitals had an endoscopy service onsite.

For 119/202 (59%) hospitals an endoscopy service was only available during normal working hours (Monday – Friday, 08:00 – 17:59).

There were only 53 hospitals that offered a 24/7 endoscopy service.

56/204 (27%) hospitals relied on the on call medical team with or without input from gastrointestinal specialists (depending on availability), to manage patients with gastrointestinal bleeds out of hours.

161/205 (79%) hospitals reported having an alcohol liaison service.

Only 47/203 (23%) hospitals reported having a multidisciplinary alcohol care team.

The use of guidelines/ treatment pathways for the management of patients with alcoholic hepatitis and/or alcohol-related liver disease, was limited to 115/204 and 112/204 hospitals respectively.

74/203 (36%) hospitals did not have guidelines/treatment pathways for either alcohol-related liver disease or alcoholic hepatitis.

## Recommendations - Organisational data

2. A multidisciplinary Alcohol Care Team, led by a consultant with dedicated sessions, should be established in each acute hospital<sup>2,15</sup> and integrated across primary and secondary care. *(Medical Directors)*
3. Each hospital should have a 7-day Alcohol Specialist Nurse Service, with a skill mix of liver specialist and psychiatry liaison nurses to provide comprehensive physical and mental assessments, Brief Interventions and access to services within 24 hours of admission<sup>2,15</sup>. *(Medical Directors)*
4. Robust guidelines should be available to every unit admitting patients with alcohol-related liver disease. All physicians managing such patients should be familiar with those guidelines and trained in their use. *(Medical Directors)*

## Key findings - Admission to hospital

132/363 (36%) patients admitted to hospital were first reviewed by a consultant more than 12 hours after admission and for 102/363 (28%) patients this review took place more than 14 hours after admission.

Advisors found that first consultant review was insufficiently prompt in 48/314 cases (15%).

There was a high incidence of abnormal renal function (157/513 patients; 30.6%). Despite this tests of renal function were not always done on admission to hospital.

Coagulopathy led to inappropriate delay in sampling ascitic fluid in a significant number of patients.

Tests to exclude sepsis including sampling of ascitic fluid and blood cultures were omitted in almost 10% (37/385) of cases.

In patients admitted with decompensated liver disease who drink potentially harmful amounts of alcohol other causes of liver disease were not considered in 145/275 cases.

The initial management plan was either unclear or inappropriate in one in six (61/363; 17%) patients.

Organ failure occurred commonly and when it did, it was not well managed in 41/275 (15%) of cases.

The initial care of more than one in eight patients (50/375; 13%) assessed by the Advisors was rated as poor or unacceptable.

A quarter (125/488 patients) of the study population were no longer drinkers. The majority (78/108; 72%) of this group had been abstinent for six months or more.

An adequate alcohol history consisting of the number of weekly units drunk, the risk of dependence and of withdrawal was not taken in nearly half (176/372; 47%) of the patients during their final hospital admission and in nearly a third (66/201; 33%) during previous admissions.

Clinicians involved in the care of the patient identified that where advice on alcohol intake was given it was not appropriate in more than one in ten (35/298; 12%) cases. Advisors found evidence that advice and support was not appropriate in more than one in five (42/200; 21%) cases.

Treatment for alcohol withdrawal was felt by the Advisors to be inappropriate in more than one in seven cases (53/346; 15%).

Alcohol withdrawal scales should be used to assess the risk of withdrawal and to guide treatment and were used in a small minority (32/322; 10%) of cases

## Recommendations - Admission to hospital

5. Trusts should ensure that medical patients are reviewed by a consultant within a maximum of 12 hours of admission, as suggested in the Royal College of Physicians London acute care toolkit, Society of Acute Medicine quality standards and previously by NCEPOD. This standard should be the subject of regular audit. *(Clinical Directors and Consultants)*
6. All patients presenting with decompensated alcohol-related liver disease should have blood cultures included in their initial investigations on admission to hospital. *(All Doctors)*
7. All patients admitted as an emergency, regardless of specialty, should have their electrolytes checked routinely on admission and appropriately thereafter. This will help prevent the insidious and unrecognised onset of acute kidney injury<sup>19</sup>. *(Clinical Directors and Medical Directors)*
8. If ascites is present in patients presenting with decompensated alcohol-related liver disease, a diagnostic ascitic tap should be performed as part of their initial assessment. Coagulopathy is not a contraindication to this procedure. *(All Doctors)*
9. Patients who present acutely with decompensated liver disease, and who drink alcohol at a potentially harmful level, should not be assumed to have alcohol-related liver disease. A full assessment to exclude all other potential causes of liver disease should be performed as soon as possible after admission to hospital. *(All Doctors and Consultants)*
10. A toolkit for the acute management of patients admitted with decompensated alcohol-related liver disease should be developed and made widely available to all physicians / doctors involved in the care of patients admitted to acute hospitals.
11. All patients presenting to hospital services should be screened for alcohol misuse. An alcohol history indicating the number of units drunk weekly, drinking patterns, recent drinking behaviour, time of last drink, indicators of dependence and risk of withdrawal should be documented. *(All Doctors)*
12. As recommended by NICE, assessment tools such as the Alcohol Use Disorders Identification Test (AUDIT) and the Clinical Institute Withdrawal Assessment – Alcohol, revised (CIWA-Ar) should be readily available for use by all health care professionals who should be competent in their use. *(Medical Directors and Clinical Directors)*
13. Alcohol withdrawal scales should be used, as suggested in NICE guidance, to guide treatment decisions to prevent the alcohol withdrawal syndrome. *(All Doctors)*
14. Treatment for alcohol withdrawal should be tailored to the individual patient. The presence of encephalopathy, or other features of liver disease, can make the administration of sedatives inappropriate and may indicate the need to consider transfer to a higher level of care. *(All Doctors and Consultants)*

## Key findings - First consultant review and ongoing care

One in four patients (25%; 117/467) were never seen by a gastroenterologist or hepatologist.

For 273/360 (76%) patients who were reviewed by a gastroenterologist / hepatologist, this review took place within 72 hours of admission.

For patients admitted on a Friday there was greater delay in review by a gastroenterologist or hepatologist.

Only 15% (56/373) of patients were reviewed by a specialist nurse.

Thiamine, an essential treatment to prevent brain disorders in active drinkers admitted to hospital, was omitted in more than one in ten cases (39/343; 11%).

Nutritional assessments were not made in the majority of patients (239/368, 65%) and in nearly half (167/351; 48%) no appropriate nutritional plan was documented.

Documentation of fluid balance was inadequate in 28% (98/344) of patients.

Fluid management was inadequate in more than one in four (29%; 97/338) cases.

Adequate documentation of fluid balance was more commonly associated with appropriate fluid management (88% vs. 26% of cases).

Ascites were present in over three quarters (78%; 373/480) of patients on admission.

Ascitic drainage was almost always done with albumin cover in line with best practice guidelines (135/138 cases; 98%).

Patients seen by a specialist gastroenterologist/ hepatologist were more likely to have ascites tapped and/ or drained.

## Recommendations - First consultant review and ongoing care

15. All patients admitted with decompensated alcohol-related liver disease should be seen by a specialist gastroenterologist / hepatologist at the earliest opportunity after admission. This should be within 24 hours and no longer than 72 hours after admission to hospital. *(Consultants)*
16. Trusts should ensure that all patients admitted with alcohol-related liver disease receive early specialist input from a gastroenterologist / hepatologist and a specialist practitioner in alcohol addiction. *(Medical Directors and Clinical Directors)*
17. All patients with alcohol-related liver disease and a history of current alcohol intake, in excess of recommended limits, should have thiamine (oral or intravenous) administered on admission to hospital. *(All Doctors)*
18. In patients with decompensated alcohol-related liver disease and deteriorating renal function, diuretics should be stopped and intravenous fluid administered to improve renal function, even if the patient has ascites and peripheral oedema. *(All Doctors)*
19. As for all patients, patients with alcohol-related liver disease should have accurate monitoring of fluid balance. Systems to ensure accurate monitoring of fluid balance should be in place in all Trusts. *(Medical Directors and Nursing Directors)*
20. NICE recommends that a nutritional assessment of all patients should be made within the first 48 hours of admission (CG32). This should include patients with alcohol-related liver disease. *(All Health Care Professionals)*
8. If ascites is present in patients presenting with decompensated alcohol-related liver disease, a diagnostic ascitic tap should be performed as part of their initial assessment. Coagulopathy is not a contraindication to this procedure. (As p53) *(All Doctors)*

**Key findings - Endoscopy and gastrointestinal bleeding**

There was delay to intervention in endoscopy identified by the clinician responsible in one in ten cases (14/139; 10%).

44 patients reported as having a gastrointestinal bleed did not have an endoscopy.

The Advisors rated the care of 18/98 (18%) cases who had a gastrointestinal haemorrhage as poor or unacceptable.

**Recommendations - Endoscopy and gastrointestinal bleeding**

21. The findings in this small group of patients suggest that a larger study is indicated to identify areas for improvement in the care of patients undergoing endoscopy for gastrointestinal bleeding.
22. In line with NICE guidance, unless contraindicated, all patients with alcohol-related liver disease, who present with gastrointestinal bleeding, should be offered antibiotics and terlipressin until the outcome of their endoscopy is known. *(All Doctors and Consultants)*

**Key findings - Escalation and treatment decisions**

Both Advisors (57 patients) and clinicians (19 patients) identified patients in whom escalation of care was not received despite it being indicated.

The development of renal failure was often assumed to be due to hepatorenal syndrome without adequate consideration of other causes.

Treatment limitation or withdrawal was found to be inappropriate in 52/308 (17%) cases.

Advisors identified 32 deaths which may have been avoidable.

**Recommendations - Escalation and treatment decisions**

23. Deterioration in renal function in patients with liver disease should not be assumed to be due to the hepatorenal syndrome, as other potential causes are often present and should be actively excluded. *(All Doctors and Consultants)*
24. Escalation of care should be actively pursued for patients with alcohol-related liver disease, who deteriorate acutely and whose background functional status is good. There should be close liaison between the medical and critical care teams when making escalation decisions. *(Consultants)*
25. When a decision is made not to escalate, or to actively withdraw treatment for a patient with alcohol-related liver disease, this decision should be made by a consultant. The decision making process should involve specialists with appropriate training to identify what interventions are likely to be of benefit to the patient. Such decisions should be discussed with the patient and the patient's representative (if appropriate) and documented clearly. Where there is doubt or disagreement about such decisions, the opinion of a second consultant should be sought, as outlined in guidance issued by the General Medical Council<sup>32</sup>. *(Consultants)*

### Key findings - Missed opportunities

Opportunities to change the outcome occurred frequently in the final admission and were mainly related to management of fluids and sepsis and failure to escalate care all of which have been described in earlier sections.

Clinicians (in 59 cases) and Advisors (in 75 cases) found opportunities that had been missed in previous admissions that had the potential to influence outcome.

The main opportunity to change the outcome in previous admissions was by referral to alcohol support services.

### Recommendations - Missed opportunities

11. All patients presenting to hospital services should be screened for alcohol misuse. An alcohol history indicating the number of units drunk weekly, drinking patterns, recent drinking behaviour, time of last drink, indicators of dependence and risk of withdrawal should be documented. (As p53) *(All Doctors)*
26. All patients presenting to acute services with a history of potentially harmful drinking, should be referred to alcohol support services for a comprehensive physical and mental assessment. The referral and outcomes should be documented in the notes and communicated to the patient's general practitioner. *(All Doctors)*



**Key findings - Autopsy and morbidity and mortality meetings**

A low number of cases (110/363; 30%) were the subject of review in a morbidity and mortality meeting.

Only 11 of 36 cases where death was not anticipated were discussed with the coroner.

**Recommendations - Autopsy and morbidity and mortality meetings**

27. All deaths due to alcohol-related liver disease should be reviewed at a local morbidity and mortality, clinical governance meeting to ensure that lessons are learned and to give assurance that high quality care is being provided. *(Consultants)*
28. Where the cause of death is unclear, or death was not anticipated, this should be discussed with the coroner. *(Consultants)*

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