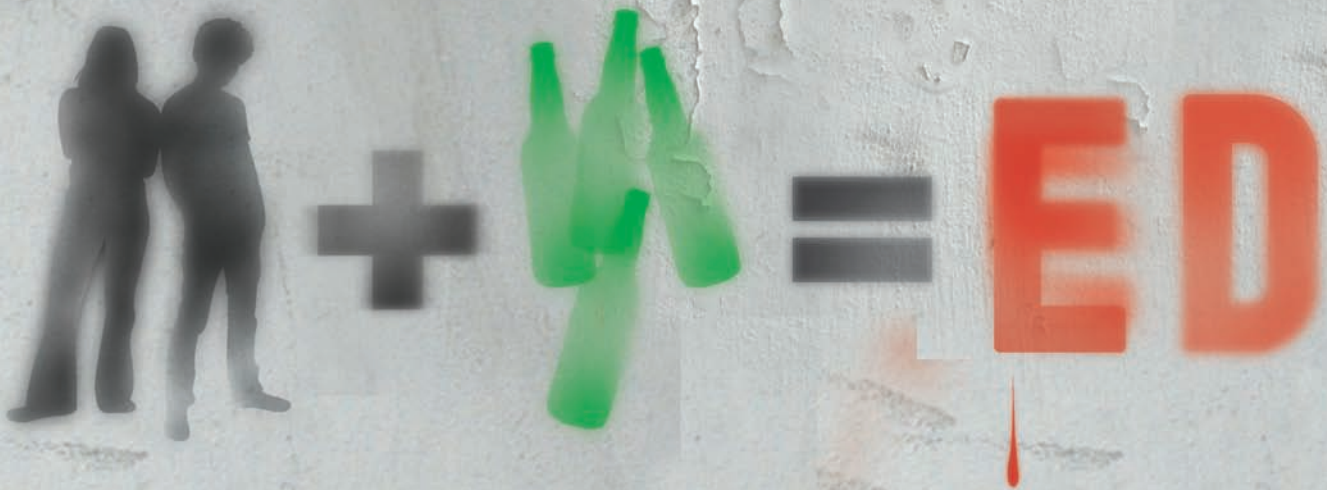


MEASURING ALCOHOL-RELATED EMERGENCY DEPARTMENT ATTENDANCES AMONGST YOUNG PEOPLE – PILOT STUDY



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Summary of key findings and implications for practice

Key findings

- There is increasing recognition of the need to better understand the extent and burden of alcohol-related harm in young people.
- A growing number of emergency departments (EDs) in the North West are starting to collect data on alcohol, identifying whether patients had consumed alcohol prior to the incident that led to their ED attendance and the circumstances of the alcohol use. At present, such data collection is primarily limited to adults.
- Arrowe Park ED has collected electronic data since 2003 showing whether individuals consumed alcohol in the three hours prior to the incident that required the ED attendance. Between April 2007 and March 2009, 809 attendances by under 18s were recorded as alcohol-related. Over half of these attendances were female (53.6%) and the vast majority were aged 12 to 17 years (98.8%). Over this two-year period, just under four-in-ten (39.2%) alcohol-related attendances were recorded as medical attendances, with the remainder being injury-related (intentional, 27.1%; unintentional, 33.7%). The majority attended on weekend evenings. Alcohol-related ED attendances were significantly more likely to be admitted to hospital.
- In 2009, 24.0% of intentional and 3.2% of unintentional injury attendances in 12 to 17 year-olds to Arrowe Park ED were recorded as alcohol-related. Using these figures, in 2009 an estimated 2,388 12 to 17 year-olds attended EDs across Cumbria, Lancashire and Merseyside (16/31 EDs in the North West) with an injury sustained after drinking (consumed alcohol within three hours prior to the incident occurring). A third (n=845) of these were intentional (violent) injuries. For those aged 18 and over, there were an estimated 36,260 alcohol-related ED injury attendances.
- Data collection from two EDs (Alder Hey and Arrowe Park) in Merseyside indicates that the collection of such data from young people under the age of 18 is feasible.
- ED staff view alcohol data collection as an important part of their role. ED staff also recognise that data can be collected at different points, including at reception, triage and examination.
- During a two-week paper-based audit at Alder Hey and Arrowe Park EDs, 8 young people aged 16 and under were identified as having consumed alcohol prior to ED attendance.
- At Alder Hey ED, where the audit has been in place for six years, interviewees highlighted a number of issues that contribute to poor data collection including: nurse/medical staff changing and not being aware of the audit tool; time pressures within the ED; and paper audit forms not being readily available.

Implications for practice

- A growing number of EDs are initiating alcohol data collection in adults and there is growing awareness not only of the direct effects of misuse of alcohol on health but also of the links between alcohol and violence. Data collected from one ED in the present study shows that 24% of violent injury attendances by 12 to 17 year-olds were recorded as alcohol-related. This figure is similar to the proportion used to estimate national figures for alcohol-related hospital admissions for assault for adults (aged 16 plus; 27%). The findings from the present study demonstrate the feasibility of collecting this type of data for those under 18 years-old.
- Key stakeholders with experience or knowledge of collecting data on alcohol, both inside and outside ED settings, should support local EDs in developing alcohol-related data collection systems for both adults and young people.
- To provide a better understanding of the number of alcohol-related attendances to North West EDs, analyses of emerging data should be a priority, with findings shared between local partners.

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1. Introduction

Reducing alcohol use and alcohol-related harm in young people is a stated government priority (1). In 2008, over half (52%) of 11 to 15 year-old school children in England had already initiated alcohol use, rising to 81% in fifteen year-olds (2). Youth alcohol consumption can have major long term impacts on health and wellbeing. For example, drinking alcohol in childhood can impair intellectual development, affect school attendance and performance (3), and is associated with alcohol abuse in later life (4,5). It is also associated with a wide range of acute harms including overdose, injury, violence, risky sexual behaviour and sexual abuse (3,6,7).

The 2009 Trading Standards North West survey found that over half of 15-16 year-old drinkers in the North West reported frequent and/or heavy drinking¹ (4). Frequent and heavy drinkers were significantly more likely to experience harm including violence when drunk and alcohol-related regretted sex (4). The North West is known to have the highest rate of alcohol-specific hospital admissions in under-18 year-olds in England (8). However, such admissions represent the tip of the iceberg. For every hospital admission, many more young people will require emergency department (ED) treatment for alcohol-related problems; yet a scarcity of data on children's alcohol-related ED attendance means there is currently little understanding of the size of this burden.

The Prime Minister's Strategy Unit estimated that alcohol misuse costs the NHS £2.7billion each year, of which over a fifth is due to ED attendances (9). Despite this, no consistent data are available locally to understand the extent of alcohol involvement in ED attendance by young people, or the drinking behaviours that lead young people to require ED treatment. With up to 70% of ED attendances estimated to be alcohol-related at peak times (10), EDs are an ideal location to detect hazardous and harmful drinkers and offer advice and support. However, across England, routine collection of alcohol data across EDs is infrequent (11). A national survey in 2006 found that only 11% of EDs in the northern region (including the North West, North East and Yorkshire) ask questions about alcohol consumption to attendees (11). More recently, a number of EDs across the North West have started to collect alcohol data from patients via routine enquiry upon registration (e.g. Trauma and Injury Intelligence Group [TIIG] alcohol questions: have you been drinking alcohol within three hours prior to the incident occurring and the last drink location; www.tiig.info) and/or through the use of alcohol audit tools (e.g. AUDIT-C / Paddington Alcohol Test). Whilst these developments are promising and have been used successfully to support initiatives to prevent alcohol-related harms locally (e.g. Arrowe Park ED, Wirral), routine data on alcohol-related attendances to EDs are rarely available to partners at a local level to inform the development of interventions or simply to understand the extent of the problem.

Developing an understanding of the extent of alcohol-related ED attendances made by young people in the North West is critical in designing and implementing appropriate interventions to tackle alcohol problems. Accordingly, Government Office North West and Drink Wise North West commissioned the Centre for Public Health (CPH) at Liverpool John Moores University (LJMU) to conduct a pilot study to explore alcohol-related ED attendances amongst young people and how alcohol data collection in EDs can be developed across the North West.

¹ Frequent drinking: drinking frequency = more than one session per week. Heavy drinking: more than five drinks per session more than once per month.

2. Study aims

The study aimed to:

- Understand the proportion and type of injury attendances to EDs made by young people that are linked to alcohol;
- Compare paper-based and electronic alcohol data collection methods; and,
- Suggest recommendations to develop routine collection of alcohol-related information in EDs across the North West of England.

3. Methods

To address the study aims, a number of research methods were used. A two week paper-based alcohol audit was conducted across two children's EDs in Merseyside (Alder Hey and Arrowe Park). In addition, existing data on alcohol-related attendances to these two EDs were analysed, and, where possible, comparisons made between paper-based and electronic data collection. In order to understand ED staff experiences of implementing the audit (including any limitations and areas for development) and their perceptions of the feasibility of collecting such data routinely, interviews were conducted with staff from across the two trusts. Further details of the research methods can be found in Appendix 1.

4. Findings

4.1 Analyses of pre-audit emergency department alcohol data collection

Alder Hey Children's NHS Foundation Trust

In 2004 Alder Hey ED implemented an alcohol audit. During 2004/05, 253 alcohol-related attendances were identified (less than 1% of all attendances [12]), an average of five per week. Data from these attendances show that 71% were female and the majority were aged 12 to 15 years (Alder Hey primarily treats patients up to the age of 16). The main drink consumed by patients was vodka, with at least a third reporting having drunk vodka prior to their attendance at the ED (13). Data from one of these attendances highlights the financial impact alcohol can have on NHS Trusts, including treatment in the ED and admission to hospital (see Box 1).

Since this time, where possible Alder Hey has continued to collect information from patients who are intoxicated. Data collection forms part of a wider audit, which gathers a range of information on substance use. In 2007, the trust set up systems to share these data with local partners via the Alcohol Treatment Monitoring System. From April 2007 to March 2009, data were collected from 103 young

Box 1: Clinical case example, Alder Hey ED, 2006

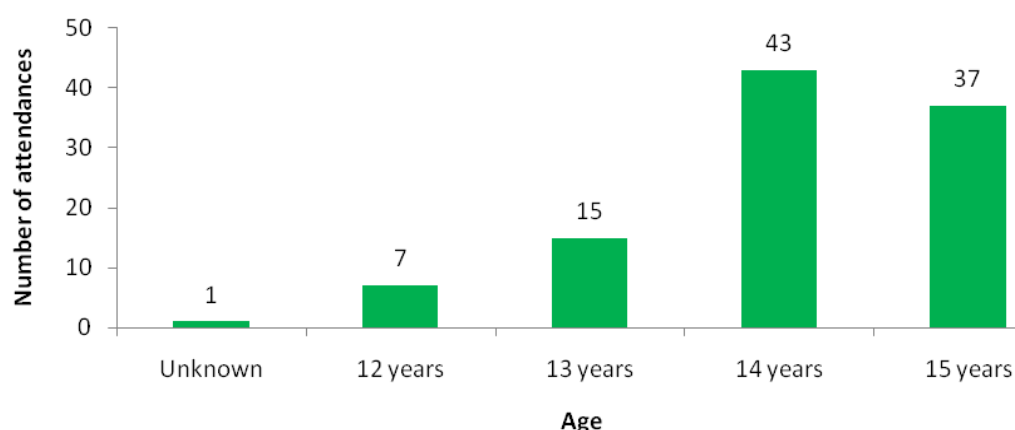
- A 15 year-old boy, who was found in the street, arrived at the ED via ambulance
- The boy had drunk $\frac{3}{4}$ litre of vodka in 1½ hours (no drugs had been consumed)
- The boy had fallen whilst running and banged his head
- The alcohol had been purchased from a shop, and the boy was drinking because it was 'a Friday night'. The boy reported being an occasional drinker
- The type of treatment received included: airway support; intravenous access; urinary catheter; computerised (axial) tomography scan (£300); and being admitted to intensive care (£1,900) (13).

people, an average of just over four per month. Two thirds (65.0%) of attendees were female, with the mean age being 14-and-a-half years. Data on the type of alcohol consumed were collected from a third (34.0%; n=36) of patients. Of these, over a third (38.9%) reported consuming light Perry (e.g. Lambrini), and one-in-ten (11.1%) cider. Over one-in-five (23.3%) reported having drunk alcohol previously. Data on the circumstances of alcohol use leading to the ED attendance were collected from less than 10% of patients, and consequently no further analyses have been conducted.

Data on treatment and follow-up show that over one-in-ten (11.7%) patients were admitted to hospital and over half (55.3%) were provided with an information pack detailing the harms associated with alcohol misuse and where to obtain further information or support. Over four-in-ten (46.6%) were referred to their school nurse, whilst one-in-ten (9.7%) were referred to another agency. Nearly two-thirds (64.1%) of attendees were referred to the Brief Intervention Clinic (BIC) situated in the ED. Only six (9.1%) of those referred to the BIC were recorded as having attended and received the extended brief intervention.

Compared with data from the initial alcohol audit in 2004/05, the number of attendees identified as alcohol-related since April 2007 is much lower. Reasons for this are not known, however as detailed in the staff interview section (3.4), a number of issues can impede such data collection meaning data may not be collected routinely. Therefore, it is possible that these data are underestimates.

Figure 1: Number of attendances to Alder Hey Emergency Department identified as alcohol-related, under 16s only, by age, April 07 to March 09



Wirral University Teaching Hospital NHS Foundation Trust

Since 2003, as part of the routine booking-in process at Arrowe Park ED, reception staff ask patients if they have been drinking alcohol within three hours prior to the incident that led to their ED attendance. During April 2007 to March 2009, there were 809 attendances aged under eighteen (1.8% of all attendances from this age group) identified as having drunk alcohol within three hours prior to the incident occurring. This is an average of eight attendances per week. Just under four-in-ten (39.2%) alcohol-related attendances were recorded as medical attendances, with the remainder being injury-related (intentional, 27.1%; unintentional, 33.7%). Over half (53.6%) were female, with the mean age being sixteen years. The proportion of attendances identified as alcohol-related increased with age (Figure 2; $p < 0.001$). Less than one percent of attendances aged 12 years and under were reported as alcohol-related compared with almost one-in-ten (9.5%) 17 year-olds. Whilst a higher number of alcohol-related attendances were recorded as unintentional injury, overall a higher proportion of intentional injury attendances reported having consumed alcohol; 21.1% compared with 1.1% of unintentional injury attendances.

The majority (70.7%) of young people identified as having consumed alcohol attended on Fridays, Saturdays and Sundays, and on these days peak times were between 8.00pm and 3.59am (73.6%). Young people who had been drinking alcohol were significantly more likely to be admitted to hospital following their ED attendance than those who had not (25.0% compared with 13.2% of non alcohol-related attendances; $p < 0.001$). Box 2 provides some examples of how such data have been used by local partners to prevent alcohol-related harms amongst young people.

Box 2: Examples of partner data usage

- To monitor and evaluate the impact of the Think 21 campaign.
- To support the development of referral pathways from the ED to other services.
- To inform a local area young person's alcohol strategy.
- To inform targeted policing and multi-agency interventions, such as the Young People Alcohol Intervention Programme (YPAIP).

Figure 2: Proportion of attendances to Arrowe Park Emergency Department identified as alcohol-related, under 18s only, by age, April 07 to March 09

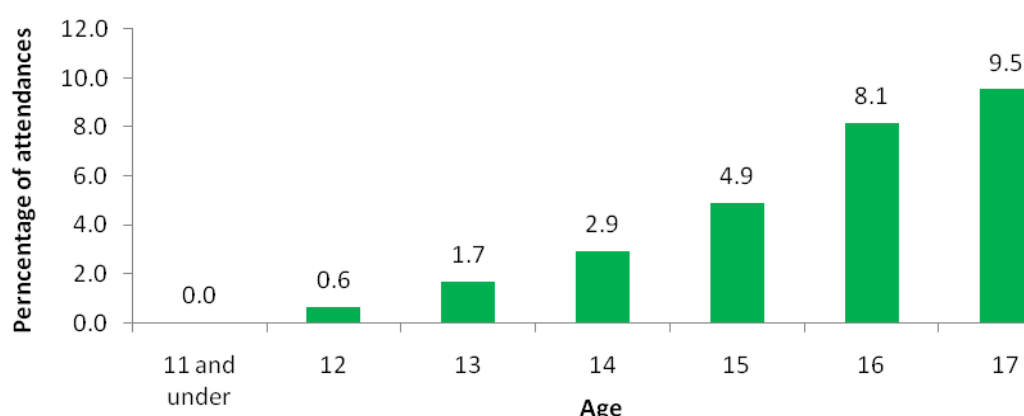


Table 1: Summary of alcohol-related attendances to Alder Hey and Arrowe Park Emergency Departments, pre-audit

Time period	Number of alcohol-related attendances	% female	Main drinks consumed
Alder Hey ED			
2004 audit	253	71%	Vodka (a third of patients) ²
April 07-March 09	103	65%	Light perry (34%) Cider (11%)
Arrowe Park ED			
April 07-March 09	809	54%	Unknown

4.2 Analyses of two-week audit data collection

At Alder Hey ED, during the two-week alcohol audit, three attendees (out of 1,853; two males aged 12 and 15, and one female aged 14) were identified by reception staff as having consumed alcohol prior to the incident that required ED attendance. Additional data on the circumstances around their alcohol consumption were recorded for two of these attendees only (see table 2). Both had drunk vodka and had been drinking with friends. Available data showed that both attendees were provided

² The precise figure was not available at the time of writing.

with an information pack and all three attendees were referred for further support (e.g. school nurse/BIC). Such referrals may not have been made if data on their alcohol use had not been collected. Table 2 provides details of these cases.

At Arrowe Park children's ED, five out of 1,399 attendances (aged 15 and under) were identified as being alcohol-related during the two-week alcohol audit. Table 3 provides details of these cases. Four out of five were female and all were aged between thirteen and fifteen years. Cider and light Perry (Lambrini) were the main drinks consumed. Four attendees had been drinking with friends in the street / park and one in a house party. Alcohol was identified as being purchased in a shop or obtained from friends. Three-out-of-five attendees were admitted to hospital. Three were also identified as having safeguarding concerns (i.e. signs of neglect or abuse) and were referred to another agency (e.g. social services).

At Arrowe Park, analyses showed that the five young people for whom an audit form was completed had been identified in the electronic data (at reception). In addition, a further eight young people, aged 16 to 17, who attended the adult ED (where the audit was not in place) were identified at reception. Of all alcohol-related attendances (13), six had attended due to an unintentional injury, five due to an intentional injury and two due to a medical problem. Eight (61.5%) were admitted to hospital.

Table 2: Two-week alcohol audit: alcohol-related attendances by demography, alcohol consumed, circumstances surrounding alcohol consumption and outcome, Alder Hey Emergency Department

Age	Gender	Alcohol consumed	Circumstances surrounding consumption	Outcome
14	Female	Half litre of vodka	Park, with friends, reason for drinking (RFD) = at Mathew Street festival	Vomiting, head injury assessment - no injuries, some mental health concerns, received information pack and referred to Child and Adolescent Mental Health Service, Brief Intervention Clinic (BIC), and school nurse (SN), discharged
12	Male	Half litre of vodka	Street, with friends, obtained from adult (drug user) who they had asked to purchase alcohol for them, RFD = family member recently passed away / parents divorcing	Unconscious when ambulance arrived, bruising (no other injuries), received information pack and referred to SN, discharged
15	Male	Unknown	Unknown	Received information pack and referred to BIC (no other details available)

Table 3: Two week alcohol audit: alcohol-related attendances by demography, alcohol consumed, circumstances surrounding alcohol consumption and outcome, Arrowe Park Emergency Department

Age	Gender	Alcohol consumed	Circumstances surrounding consumption	Outcome
15	Male	2-3 litres cider	Street, with friends, purchased from shop, drank previously, reason for drinking (RFD) = birthday	Discharged, referred to RESPONSE (a local young people's drug and alcohol service)
13	Female	3 glasses light Perry (Lambrini)	Street, with friends, purchased from shop, drinks regularly, known repeat attendee to ED, RFD = friends drinking	Assault injury, admitted to hospital, safeguarding concerns - referred to social services (SS)
15	Female	4 units cider	Park, with friends, drank previously, RFD = socialising	Referred to Paediatrics, head injury assessment - no injuries
14	Female	2 glasses light Perry (Lambrini). Offered Whizz (Speed) and vodka	Street, with friends, obtained from friends, drank previously, RFD = peer pressure (to drink / fight)	Assault injury, discharged, safeguarding concerns - referred to SS
15	Female	Cider / alcopops (no quantity provided)	House party, with friends, obtained from friends, RFD = house party	Assault injury, admitted to hospital, safeguarding concerns - referred to SS

4.3 Estimates of alcohol-related injury attendances to emergency departments across Cumbria, Lancashire and Merseyside

In 2009, electronic alcohol data collection at Arrowe Park ED identified 24.0% of intentional and 3.2% of unintentional injury attendances aged 12 to 17 as having drunk alcohol within the three hours prior to the incident. For attendees aged 18 and over, these figures were 49.9% and 7.3% respectively. These proportions have been applied to injury attendances to all EDs (16/31 North West EDs) across Cumbria, Lancashire and Merseyside to estimate the number of alcohol-related injury attendees to these EDs in one year. As detailed in section 3.4 (staff interview section), a number of issues can impede such data collection, meaning data may not be collected routinely. Therefore all figures presented in this report should be viewed as minimum figures.

Table 4 presents figures for those aged 12 to 17 and 18 plus. Overall, an estimated 38,648 ED injury attendances across these three counties (16/31 North West EDs) involved alcohol consumption within three hours prior to the incident (intentional 13,051; unintentional 25,597). Just over one in twenty (6.2%; 2,388) of these were aged 12 to 17 years. It should be noted that the estimates are based on recorded numbers of injuries across the EDs; assessments show that the recording of injury data across EDs can vary (see limitations section; Appendix 1, Box 5).

Tables 4: Total injury attendances and estimates of alcohol-related injury attendances to emergency departments in Cumbria, Lancashire and Merseyside, 2009

County	Emergency department	Unintentional injury ⁺				Intentional injury ⁺			
		Total aged		Est. alcohol		Total aged		Est. alcohol	
		12-17	18+	12-17	18+	12-17	18+	12-17	18+
Merseyside	Arrowe Park*	4079	22617	131	1646	366	2491	88	1243
	Alder Hey Children's**	5920	34	190	2	293	4	70	2
	Royal Liverpool	946	29911	30	2177	170	2617	41	1306
	Aintree	770	12343	25	898	330	4033	79	2012
	Whiston	3625	42553	116	3097	168	1686	40	841
	Southport and Formby	536	13119	17	955	105	1743	25	870
	Ormskirk**	2341	5108	75	372	112	123	27	61
Lancashire	Blackpool Victoria	7169	69558	230	5062	390	2484	94	1240
	Chorley and South Ribble	3441	19850	111	1445	159	840	38	419
	Royal Blackburn***	7042	46474	226	3382	553	2747	133	1371
	Royal Lancaster Infirmary	1920	10155	62	739	99	506	24	252
	Royal Preston	3318	20404	107	1485	276	1712	66	854
Cumbria	Cumberland Infirmary	2570	14978	83	1090	214	1590	51	793
	Furness General	1016	4843	33	352	96	669	23	334
	West Cumberland	2001	12118	64	882	153	1120	37	559
	Westmorland General ****	1363	6455	44	470	30	97	7	48
All EDs: total [§]		48057	330520	1543	24054	3514	24462	845	12206

Est. – estimated.

* Figures for Arrowe Park are actual figures, not estimates. All estimates are based on Arrowe Park figures.

** The majority of attendees to Alder Hey (99.8%) and Ormskirk (68.6%) are under 18 years of age.

***Data for Royal Blackburn Hospital include Royal Blackburn ED and Urgent Care Centre (UCC), and Burnley UCC.

**** Westmorland General changed from an ED to a Primary Care Assessment Unit in 2010.

§ Individual ED Est. alcohol totals may not add up to the All EDs total due to rounding.

⁺ Intentional injury, e.g. assault / self harm. Unintentional injury, e.g. sports injury, road traffic collision, falls.

4.4 Emergency department staff views on, and experience of, collecting alcohol data

Audit implementation

Alder Hey ED has been conducting the alcohol audit for a number of years. Prior to the two-week audit conducted for this pilot study, data on alcohol was only collected at Alder Hey ED when a child/young person arrives and staff suspected that the attendance was alcohol-related. During the two-week alcohol audit, staff in both trusts were encouraged to ask all patients whether they had been drinking prior to the incident that led to their ED attendance. A number of interviewees highlighted the importance of asking all attendees this question. For example, an individual may attend in the morning and appear sober, but with injuries obtained the night before whilst they had been drinking. One interviewee felt that not asking all patients led to the ED missing out on identifying a large number of young people where alcohol consumption may have been a contributing factor to their ED attendance. Once alcohol consumption has been identified (by the triage nurse), it is at this point that information on alcohol starts to be collected and recorded on the audit form.

Alder Hey interviewee

"I think there is a whole lot of people that we miss with injuries just because people don't ask if they have been drinking"

Across the two trusts data were collected from different ED staff members during the audit. At Arrowe Park, where the audit was a new process for staff, data were collected (by triage nurses) as soon as alcohol was identified. In Alder Hey, interviewees noted that it is typically clinicians/doctors who complete the audit as part of taking the patients' history and that in the most part, the questions on the audit form were already asked routinely by clinicians/doctors. Consequently, the majority of interviewees at Alder Hey felt it was easier for clinicians/doctors to collect alcohol data. However, it was noted that these questions (e.g. alcohol consumed, circumstances surrounding attendance) can also be asked at triage or reception, for example, prior to a clinician/doctor coming into contact with the patient. This was viewed as more practical when the department is particularly busy; it was highlighted that the audit can be filled in by any member of ED staff. One interviewee noted that as Senior House Officers (SHOs; junior doctors) rotate around trusts regularly, they would have to provide specific training on completing the form quite often, which may be resource intensive.

Alder Hey interviewee

"A triage nurse can start the process"

Table 5: Implementation of the audit at Alder Hey and Arrowe Park Emergency Departments

Audit	Alder Hey	Arrowe Park
Conducted by:	Clinicians / doctors	Triage nurses
Patients identified by:	Reminder card placed in patient notes	Alcohol questions at reception (TIIG questions) and triage
Data collected via:	Paper-based form, entered on to excel spreadsheet	Paper-based form. TIIG questions electronic (collected by reception staff)

Positive aspects of alcohol data collection within EDs

Across both trusts, interviewees reported that the majority of the alcohol audit questions would be asked when taking the patients' history if alcohol consumption was apparent; consequently they were happy to ask the questions. Such information was viewed as crucial to determining patients' treatment; interviewees felt that they had a duty of care to ask patients about their alcohol consumption. Data collected around reasons for drinking were seen as helpful in identifying child protection issues. Staff reported that the audit was well structured and provided a framework for managing and treating alcohol-related attendances. The audit tool at Alder Hey has a pathway diagram attached to it, illustrating the types of treatments that should be undertaken when a patient has consumed alcohol. This was viewed as particularly helpful by less experienced staff members (e.g. new SHOs), in assisting them in thinking through the patients' treatment pathways.

Arrowe Park interviewee

"It is good around child protection"

Alder Hey interviewees

"...duty of care to ask them those questions"

"...helpful for new SHOs in writing their history"

"Makes you think of things to ask"

On the whole most of those interviewed were happy to complete the audit form providing there was no duplication of information. Even those not comfortable with asking the questions in the past (at Alder Hey ED) stated that they were now comfortable doing so. The majority of interviewees felt that the audit tool was well structured and easy to use once they were familiar with the questions posed.

Within Alder Hey there is a Brief Intervention Clinic (BIC: a follow up Tier two service); nurses working here highlighted that the data collected through the audit was extremely useful when a young person is referred to the clinic. It was felt that at this stage (usually a few days later) it would be difficult for the young person to remember what and how much alcohol they had consumed. The audit form was seen as a useful reference tool.

Alder Hey interviewees

"Familiarity with the form on a regular basis, if you are aware of the questions you need to cover in the screening tool then it is a fairly simple form really"

"Useful, provides structure and guidance, although sometimes can be difficult to fill in when the child is not conscious or it is busy in the department"

"I don't really mind, if you say at the beginning what you are going to do and everyone understands why you are asking the questions and the importance of them, it isn't a problem"

"I think it is ok. I mean, if they have gone out and drank, they can answer questions can't they?"

Barriers to alcohol data collection

Despite interviewees' positive views regarding the collection of information on alcohol from young people, a number of barriers to completing the forms on a routine basis were highlighted. The key barrier was the patients' ability or willingness to answer the questions. Interviewees noted that difficulties arise if a patient is brought into the ED in an unconscious state, or is conscious but unresponsive. If no one is with the unconscious patient when they are brought in, the only information available is from the paramedics. Conversely, when the patient comes in with or is brought in by family/relatives, their presence can inhibit the young person from providing information on their alcohol consumption. In some cases, information was reported as being obtained from parents. However, a view expressed by some respondents was that parents can be upset by what has happened and thus may be unreliable in their answers.

Shift changes were highlighted as potentially problematic in relation to paper-based data collection. Examples were provided in which the audit had not been completed because the patient was unconscious/unresponsive, and subsequently it was left for the next clinician to complete. This meant that interviewees did not know if the paperwork was ultimately completed. Other issues included running out of forms and having to wait for new forms to be supplied.

Where other audits were taking place within the ED, these would also appear to hinder the paper-based alcohol audit. For example, interviewees at Alder Hey noted that where a patient attended as a result of self-harming, they would complete a specific set of forms pertaining to self-harm. As addressing self-harm would take precedence over their alcohol consumption (if they had been drinking), only these forms would be completed.

At Alder Hey ED, the alcohol audit forms part of a wider substance misuse audit form. Here, several participants commented on the length of the form and the time required to complete it; this can present a problem when the department is busy. There were also comments about the way the form is constructed and some participants felt they were flipping backwards and forwards through the pages and that one item did not appear to follow the next. The form asks questions about: social functioning (e.g. who they live with); previous alcohol and drug use; and physical and psychological health. A number of interviewees suggested that the form needs to be much shorter,

particularly as the information collected may not routinely be used by clinicians. These additional questions were viewed as an extra burden on their routine work (whilst the alcohol audit questions were not). One interviewee felt that they were only useful from a public health perspective and not from a patient treatment view. Additionally some interviewees found these questions embarrassing or difficult to ask. When parents are present, clinicians mentioned that on occasion they would ask the young person's parents if they would mind leaving the room for a few minutes whilst some of the questions were asked. At other times, a chaperone (e.g. a nurse) would be present during the questioning when it was not possible to contact parents at all during the attendance.

Arrowe Park interviewee

"In one case where one (child) had come in with a parent, the girl (her friend) who came in with the family friend was probably a bit more open. The child who came in with the parent was probably a bit more cautious"

Alder Hey interviewees

"...difficult to fill in (audit) ...depending on how responsive they (patient) are"

"Timing is always a difficulty, they are either completely out of it and can't answer the questions or the relatives arrive and are embarrassed at what their children have done. They just want to go and don't wait to see a doctor, so you miss the opportunity to ask the questions"

Alder Hey interviewees

"...people don't always get round to filling in gaps"

"They (the forms) are always in the same place in two spots in the department, but I would guess that occasionally we run out because we don't photocopy them, they come from the pathways department within the trust – they bring them down – which does necessitate whoever is taking the last one or two to identify that"

Alder Hey interviewees

"It is quite lengthy... my resistance if you like is around speed of completion"

"The shorter the better"

"I felt I was flipping backwards and forwards through the sheets"

"Sometimes there are barriers around who is there with them, some of the questions on the DAAT (Substance Misuse Screening tool) are very personal and probing"

Young people's response to alcohol questions

There was a general view that young people are often embarrassed about finding themselves in the ED due to intoxication, and because of this probably tell the truth about what happened to them. One interviewee reported that in the most part, when a patient was conscious and responsive, they were given information on alcohol use by the patient without having to ask for it. It was suggested that young people may be more likely to respond to questions more fully either before their parents/family arrive at the hospital or if they are not present during questioning. Having parents in the room who are embarrassed or angry about what their child has done can be an inhibiting factor in terms of receiving responses from the young person. On the other hand one participant reported a case where a patient was unresponsive to questions due to non co-operation rather than intoxication, and that much of the history in this case was provided by the individual's family member who was present at the ED.

Alder Hey interviewees

"I think they accept that they are in hospital and that they have to answer a few questions"

Areas for development

One of the key suggestions for development identified by interviewees was to collect the alcohol data through a combined approach that suits the needs of auditing and informing patients' treatment. For example, there were suggestions that if the attendance was alcohol-related, triage nurses or reception staff could start the process, collecting information on alcohol consumption and the circumstances surrounding this.

Arrowe Park interviewee

"I think if it was a combined pathway between an audit point of view and a clinical point of view that it would be okay"

Alder Hey interviewee

"The triage nurse should have some AIPs (alcohol audit form) and start filling it in straight away if alcohol is involved"

On the whole most participants did not feel there were any unnecessary alcohol-related questions on the forms, and those that were on the form contributed to the patients' history. The idea of offering a selection of closed-choice answers for the question which asks 'why did they drink today?' was welcomed by the majority of participants, although one person commented that anything that lengthened an 'already long form' was not a good idea. It was generally felt that four or five options along the following lines would elicit at least some response rather than leaving the answer to this question completely blank, which is often the case at Alder Hey: social event (party/birthday), habitual (every weekend), peer pressure (because friends do it), bereavement or upsetting event, trying alcohol for the first time, other, don't know. At Alder Hey, recording who had provided the information was also suggested by one respondent as this might be useful if the child attends the BIC.

With regard to the Substance Misuse Screening tool at Alder Hey ED, interviewees felt that a shorter tool should be considered. Some felt a number of questions were inappropriate or irrelevant and also took no account of age (e.g. the difference between an 11 year-old and a 15 year-old becoming intoxicated).

5. What next

Using different approaches to data collection (paper-based and electronic), the purpose of this pilot study was to: explore methods of alcohol data collected from young people (under-18s) in EDs; develop an understanding of the proportion and type of ED attendances by young people that are alcohol-related; and make recommendations for the development of routine collection of alcohol data among young people attending EDs across the North West.

Collection of alcohol data in emergency departments

The two EDs participating in the study (Alder Hey and Arrowe Park) had existing but different methods of collecting data on alcohol-related attendances – one used a paper-based tool that collects detailed information from children who were believed to be attending with an alcohol-related condition, and the other collected basic information on alcohol consumption from all attending children. During a two-week audit period, in which both EDs used the paper-based tool, only eight young people were identified as having an alcohol-related attendance, out of 3,252 attending over this period. Over the same period, electronic data collected from just one ED identified 13 young people as having an alcohol-related attendance. Thus, the study identified that a single question asked by reception staff can feasibly identify alcohol-related attendance in children and, if linked to patient records, this enables further analysis on the involvement of alcohol in different patient groups and conditions. However, paper based data collection implemented by triage nurses or clinicians allows for more detailed information to be obtained regarding the circumstances of alcohol use among those cases identified as alcohol-related.

Interviews with ED staff identified that the electronic collection of basic information on alcohol was relatively unproblematic, with staff highlighting the importance of asking all patients whether they had been drinking. Interviews with ED staff highlighted a number of issues with paper-based data collection, including medical staff changing and not being aware of the audit tool, time pressures within the ED, and paper forms not being readily available. However, contrary to previous research (14), staff that used the paper based tools, or who had previous experience of collecting alcohol data from young patients, were happy to do so and saw it as part of their role. It was seen as particularly useful in helping identify child protection issues.

Data were collected by different ED staff across the two EDs. Interviewees highlighted that any member of staff, including reception staff, triage nurses and clinicians, can collect data on alcohol from patients. Ideally data should be collected in a way that allows good data collection whilst placing minimum impacts on the ED itself. Many trusts in the North West already have, or are establishing, systems to identify and support alcohol-related ED attendees or those admitted to hospital for an alcohol-related condition (e.g. alcohol nurses). Whilst such developments are promising, of equal value might be the sharing of lessons learnt by each trust concerning their experience of setting up, maintaining and developing such systems. Forums such as the alcohol nurse groups and TIIG steering group meetings provide an ideal setting for this.

What do the data tell us and why is it important?

Data collected prior to the audit at Alder Hey and Arrowe Park EDs provide an indication of the level and type of alcohol-related attendances to these EDs. Electronic data collected at Arrowe Park ED show that the proportion of attendances that are alcohol-related ranges from less than 1% amongst 12 years olds to 10% of 17 years olds. Paper-based data collected at Alder Hey indicate that the main drinks consumed by alcohol-related attendees were cider and light perry. Data from Arrowe Park, which are linked to the patient's record, provide access to information on the type of injury

sustained. Similar to other studies (15), patients with intentional injuries were more likely to report drinking alcohol. The proportion of alcohol-related attendances increased with age. Peak days and times for alcohol-related ED attendances were similar to those found in other studies; weekends between 8.00pm and 3.59am (15). This suggests that preventative work needs to be focused around weekend nights. Partners should ensure that adequate services are commissioned to meet this need. Further, females are disproportionately represented in alcohol-related attendances to EDs. Additional investigation is needed to establish whether this reflects their greater need for such services or a gendered response to alcohol use by ED staff that creates different responses to young men and women.

The impact of young people's alcohol use on health services is evident with alcohol-related attendances significantly more likely to be admitted to hospital. With the number of emergency admissions and associated costs increasing nationally, this should be an area of concern³ (16). Information on alcohol-related attendances to EDs allows partners to be intelligence led, through identifying at-risk groups and communities where interventions should be targeted and key times for implementation. Where data are linked to patient records electronically, such data can be accessed and shared more easily to help inform alcohol-prevention efforts.

In this report, data from Arrowe Park ED were used to estimate the number of alcohol-related injury attendances to EDs across Cumbria, Lancashire and Merseyside. For violent injuries, for example, 24% of attendances to Arrowe Park ED by 12 to 17 year-olds were recorded as alcohol-related, and this figure was applied across the three counties. This figure is comparable to the proportion used to estimate national figures for alcohol-related hospital admissions for assault for adults (aged 16 plus; 27%, [17]). Although data collection practices vary across EDs, it is estimated that for every hospital admission for injury, there are ten ED injury attendances. A comparison of hospital admissions for injury and ED injury attendance data used in our study shows similar trends. Overall, in 2009 an estimated 38,648 injury ED attendances aged 12 plus across these EDs (16/31 North West EDs) had been drinking alcohol within three hours prior to the incident occurring (intentional 13,051; unintentional 25,597). Just over one in twenty (6%) of these are aged 12 to 17 years. Whilst these estimates should be viewed with caution (see study limitations section), they can provide an initial indication of at least the minimum levels of injury attendances that are alcohol-related. The increasing use of the TIIG alcohol questions across the North West should help local partners better understand the impact of alcohol on their ED and further develop county-wide estimates.

Future development

Across the North West, TIIG are working on behalf of local partners to develop electronic ED data collection on alcohol and violence, amongst other public health priorities. By the end of 2010, we

Box 3: Importance of ED alcohol-data collection amongst young people

Without data collection on alcohol consumption amongst young people attending EDs, partners will be **unable to**:

- Measure alcohol-harms which impact on young people having to seek emergency medical treatment;
- Be intelligence-led through the identification of at-risk groups and communities and peak times for alcohol-related harms; and,
- Understand the true costs on health services and wider partners of young people consuming alcohol.

³ In the North West, the NHS Alcohol Challenge aims to reduce alcohol-related hospital admissions by 5% by March 2011. It is estimated that this will lead to 9000 (NI39) reductions in the first year, approximately 20,000 actual alcohol-related hospital admissions. Further it is estimated that this will also generate a financial return of £38 million across the North West after one year.

estimate that 20 (out of 31) EDs across the North West will start collecting the TIIG alcohol data question (have you been drinking alcohol within three hours prior to the incident?) from all assault patients, with some collecting it from all injury patients. TIIG is working with EDs to reduce levels of duplication in alcohol data collection, and support a coordinated approach across North West EDs. However, increased support is required to drive forward alcohol data collection. An approach which takes account of the differing working practices across EDs in the North West, local priorities and the need to understand and compare difference in alcohol-related attendances across counties should be developed. Ideally, alcohol data collection in EDs should be electronic and linked to patient records to allow detailed (pseudo-anonymised) data on alcohol-related attendances to be shared with local partners to inform prevention efforts.

Summary

The collection of alcohol data from young people in EDs is feasible. However, such data collection needs to be systematic, to ensure patients who have been drinking alcohol are identified, and electronic, so data can be shared easily with local partners to inform prevention. More detailed data on the circumstances around alcohol consumption can serve to support treatment options and prevention.

Overall, a consistent approach to such data collection across EDs is required to allow comparability, and enable a county-wide picture on alcohol-related ED attendances to be developed for all age groups. The roll out of the TIIG alcohol questions across many EDs will serve to enhance understanding of the impact of alcohol on EDs, as will the increasing use of alcohol audit tools. Analyses of emerging data should be a priority to increase understanding across local areas.

6. Recommendations

Key stakeholders and commissioners

- 1. Promotion of emergency department alcohol data collection and sharing**
Partners should encourage EDs to collect and share data on alcohol on a routine basis.
- 2. Provision of support to emergency departments collecting alcohol data**
Key stakeholders with experience or knowledge of collecting data on alcohol, both inside and outside the ED setting, should support local EDs in developing alcohol-related data collection systems, particularly amongst young people. The Trauma and Injury Intelligence Group (TIIG) has established multi-agency steering groups in the majority of counties in the North West. Such groups provide ideal forums for identifying areas for support and development, and relevant resources.
- 3. Minimum standard of emergency department alcohol-data collection**
Using existing knowledge and emerging practice across the North West, partners should develop a minimum standard of ED alcohol-data collection. This should be appropriate to the varying operational set ups of North West EDs, and be able to support both local partners in developing, implementing and evaluating initiatives aimed at tackling alcohol-related harms and reducing alcohol-related ED attendances and hospital admissions. With many North West EDs starting to collect the TIIG alcohol questions this year from injury patients, this data collection should be promoted across all North West EDs.
- 4. Use of ED data on alcohol-related attendances**
Partners who have access to data from EDs on alcohol should ensure such data are analysed and used, with feedback provided to EDs on data usage. Where relevant, data quality issues should also be fed back. All data analyses should be shared across relevant partners to increase the understanding of alcohol-related attendances to EDs.
- 5. Effective patient referral pathways**
Where systems are developed to collect data on alcohol, NHS Trusts and local partners should develop effective patient referral pathways from EDs to alcohol services and to wider services including sexual health, youth services and education. Such pathways should be regularly monitored to ensure young people are accessing services.

Emergency departments

- 1. Electronic alcohol data linked to patient records**
To develop understanding around alcohol-related attendances to EDs, data should be collected electronically and be linked to patient records. This will allow data (pseudo-anonymised) on alcohol-related ED attendances, and the circumstances surrounding their ED attendance, to be accessed more easily.
- 2. Data sharing**
Systems and data sharing protocols should be developed to ensure local partners can access ED data on alcohol for the purposes of preventing and tackling alcohol-related harm. The North West TIIG injury surveillance system, of which all 31 North West EDs are a part, can support the development of such data sharing.
- 3. Collaborative prevention efforts**
EDs should work closely with local partners working to prevent alcohol-related harm to help identify emerging problems and support a multi-agency response.
- 4. Sharing best practice**
Through existing partnerships and relevant forums, EDs using alcohol audit tools or collecting the TIIG alcohol questions, should share their experience and lessons learnt across all stakeholders. Such learning could be shared in local forums and meetings, TIIG events or other alcohol conferences for example.

7. Appendix 1: Research methods

To address the study aims, a number of research methods were used.

Emergency department alcohol audit

A two-week audit aiming to measure the proportion of attendances to EDs made by young people (16 and under) that are linked to alcohol, and the circumstances surrounding their alcohol use, was implemented. The audit (see Box 4) was undertaken through a partnership between CPH, Alder Hey Children's NHS Foundation Trust and Wirral University Teaching Hospital NHS Foundation Trust (Arrowe Park ED). The two-week audit took place from 17th to 31st August 2009 at Alder Hey (where the audit was already in place) and Arrowe Park (children's) EDs - two of the three children's EDs in Merseyside. Both Alder Hey and Arrowe Park EDs have distinct operational set-ups, which is why they were invited to take part in this pilot study (see Box 4). Examination of these differing approaches affords the opportunity to gain greater insight into the practicalities of collecting alcohol-related data from young people, especially under working conditions that are often very busy.

During the audit, staff working in the EDs were encouraged to record the number of attendances that were alcohol-related (at reception) and complete the audit form (at triage or by consultants; see Appendix 2) for all such attendances. The form includes a range of questions including: the type and amount of alcohol consumed; who the person was drinking with; where they obtained the alcohol; and if they sustained any injuries. Depersonalised data from the audit was shared with and analysed by partners from CPH. During this two-week audit period, eight individuals were identified as having consumed alcohol prior to the incident that led to their ED attendance across the two trusts, although information on the circumstances around their alcohol consumption was only collected from seven individuals.

Box 4: Two-week alcohol audit

Alcohol audit

In 2004, Alder Hey children's ED implemented an alcohol audit that collected additional data for attendances that are suspected to be related to alcohol. The audit is still in place and, more recently, depersonalised data sharing has been established with CPH for the purposes of monitoring alcohol treatment and informing the development of local prevention initiatives. Study partners based at Arrowe Park ED were involved in the initial development and implementation of the alcohol audit at Alder Hey (as they were working within the trust at that time), and as part of this pilot, implemented a similar audit within Arrowe Park children's ED.

Alder Hey and Arrowe Park emergency departments operational set up

Alder Hey ED admits children only (primarily those up to the age of 16); the ED is open 24 hours a day. Arrowe Park ED has both a children's ED, serving those up to the age of 15, and an adult ED. Arrowe Park children's ED is open between peak hours (9am to 11pm Monday to Thursday; 10am to 12pm Friday to Sunday). Outside of these times, all attendees, including those aged 15 and under, attend the main ED situated next to the children's ED. All attendees, regardless of age, use the same reception desk before being directed to the relevant ED setting.

Recording of alcohol-related attendances

During the two-week audit, the EDs were encouraged to ask all patients if they had been drinking prior to the incident that led to their ED attendance. This question is already asked at Arrowe Park when a patient books in at reception and is then recorded on the IT system. At Alder Hey, during the two week audit, staff at reception asked the question, recording how many patients reported that they had drunk alcohol on a paper-based form. In both EDs, the audit form was then completed by triage or medical staff.

Analyses of existing alcohol data

With Alder Hey ED having used the alcohol audit form for a number of years, data going back to April 2007 were obtained (via the Alcohol Treatment Monitoring System, based at CPH). In addition, as part of the Trauma and Injury Intelligence Group's (TIIG) work (based at CPH), since 2003, Arrowe Park ED has collected data on patients' alcohol consumption (i.e. Have you consumed alcohol within three hours prior to the incident occurring?). Both datasets were analysed to assess the proportion of young people¹ (see Box 5) attending the EDs with an alcohol-related attendance over a number of years. As detailed in section 3.4 (staff interview section), a number of issues can impede such data collection, meaning data may not be collected routinely. Therefore all figures presented in this report should be viewed as minimum figures.

Using alcohol data from Arrowe Park ED and TIIG data on injury attendances to all EDs (16/31 North West EDs) across Cumbria, Lancashire and Merseyside, estimates for the number of alcohol-related injury (intentional and unintentional) attendances to each ED in these counties were produced for those aged 12 to 17 and 18 plus.

Interviews with ED staff

Following the two-week audit, interviews were conducted with staff from the Alder Hey and Arrowe Park EDs² who were involved in implementing the audit and/or treating patients who had been drinking or who presented with an alcohol-related condition. The interviews were semi-structured and covered participants' experiences of implementing the audit (including any limitations and areas for development) and their perceptions of the feasibility of collecting such data routinely. The interviews took place in quiet areas in the EDs (e.g. staff room / empty offices) at times convenient to the participants and lasted between 10 and 30 minutes. All interviews were recorded, transcribed and subjected to thematic analyses.

Box 5: Pilot study limitations

Estimates of alcohol-related attendances to EDs are based on data from one ED

The estimates of alcohol-related attendances to EDs across Cumbria, Lancashire and Merseyside are based on data from one ED, Arrowe Park. Arrowe Park ED is situated on the Wirral peninsula and benefits from a relatively confined population covering a wide range of community types, including some of the most and least deprived communities in the country. Arrowe Park ED is the only ED on the peninsula and the vast majority (84.9%) of attendees are Wirral residents (12). The ED has collected data on alcohol since 2003, specifically asking patients if they had consumed alcohol within three hours prior to the incident that led to their ED attendance. Analyses show that data have been collected consistently across the years. However, attendees to Arrowe Park may not be reflective of ED attendances to other EDs, and therefore estimates should be viewed with caution.

Patient group data collection varies widely between EDs

An assessment of ED data (experimental statistics; 19) indicates that patient group coding practices vary widely across EDs. For example, injury patients are sometimes recorded as 'other' or 'unknown' in the national ED commissioning dataset (18,19). This means that it is often difficult to compare the number of injury attendances between EDs.

Age-related factors

Alder Hey children's ED typically treats those aged 16 and under; a small proportion of attendances are aged 17 to 18 years. Those aged 17 to 18 are likely to attend other EDs across Liverpool (e.g. Aintree/Royal Liverpool). At Arrowe Park, as there is both a children's and adults' ED, local young people requiring ED treatment are likely to go to this one ED, regardless of age.

1. Under 18s at Arrowe Park and primarily under 16s at Alder Hey.

2. Staff were informed about the study via posters located within their staff rooms, information letters (provided to all staff) and presentations by the research team at staff meetings (e.g. senior house officer and senior nurse meetings).

In order to conduct the staff interviews, ethical approval was obtained from an NHS Research Ethics Committee (Sefton, Liverpool). Management permission was granted for right of access to conduct the research at Arrowe Park Hospital by the Clinical Trials Unit, Research and Development Department, Wirral University Teaching Hospital NHS Foundation Trust. Permission for right of access to conduct the research at Alder Hey was granted by the Research and Development Department of the Alder Hey Children's NHS Foundation Trust. LJMU Research Ethics Committee also granted ethical approval for the research.

8. Appendix 2: Alder Hey alcohol audit form

Patient Name:

DoB

AH Number:

Where was young person found?	Park <input type="checkbox"/>	Street <input type="checkbox"/>	Pub <input type="checkbox"/>	Club <input type="checkbox"/>	Home <input type="checkbox"/>	Other <input type="text"/>
Who were they found by?	Friends <input type="checkbox"/>	Family <input type="checkbox"/>	Police <input type="checkbox"/>	Stranger <input type="checkbox"/>	Not Known <input type="checkbox"/>	Other <input type="text"/>
What was young person drinking?	Vodka <input type="checkbox"/>	Brandy <input type="checkbox"/>	Other spirits <input type="checkbox"/>	Lager <input type="checkbox"/>	Cider <input type="checkbox"/>	Wine <input type="checkbox"/> Alcopop <input type="checkbox"/>
	Other (specify) <input type="text"/>					
How much alcohol consumed?	No of units <input type="text"/>					
Where did they obtain alcohol?	Pub <input type="checkbox"/>	Shop <input type="checkbox"/>	Home <input type="checkbox"/>	Friends <input type="checkbox"/>	Stranger <input type="checkbox"/>	Other <input type="text"/>
Who were they drinking with?	Friends <input type="checkbox"/>	Family <input type="checkbox"/>	Alone <input type="checkbox"/>	Other <input type="text"/>		
Have they taken anything else?	YES / NO	Cannabis <input type="checkbox"/>	Ecstasy <input type="checkbox"/>	Other controlled drug <input type="checkbox"/>	Paracetamol <input type="checkbox"/>	Anti-depressant <input type="checkbox"/>
	Other (specify) <input type="text"/>					
Toxicology Screen?	YES / NO					
Did they suffer associated injuries?	YES / NO	Mild (cuts / bruises) <input type="checkbox"/>	Moderate (eg fracture) <input type="checkbox"/>	Life threatening injuries <input type="checkbox"/>		
	Record details <input type="text"/>					
Have they drunk alcohol before?	Never <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Regularly <input type="checkbox"/>	Previous alcohol related hospital episode <input type="checkbox"/>		
	Record details <input type="text"/>					
Why did they drink alcohol today?	<input type="text"/>					
Responsible carer for discharge?	YES / NO	Details: <input type="text"/>				
Are they a "looked after" young person or known to CAMHS?	YES / NO	Details: <input type="text"/>				

Temperature on arrival:	<35.0°C <input type="checkbox"/>	35-37°C <input type="checkbox"/>	>37°C <input type="checkbox"/>
IV fluids given?	YES / NO		
Ethanol level taken?	YES / NO Level: <input type="text"/>		

☐ ADMISSION To: Ward ☐ HDU ☐ PICU ☐

☐ DISCHARGE CRITERIA MET:

- ☐ Alert & observations satisfactory
- ☐ Responsible person to accompany and care for child on discharge
- ☐ No other psychological / mental health / medical issues

Follow-up is required for all patients, whether they are admitted or discharged:

☐ FOLLOW-UP ARRANGED:

- ☐ Information pack given (all)
- ☐ School Nurse referral on meditech (all)
- ☐ Appointment offered for brief intervention clinic
- ☐ Referral to other agency (eg social worker if known to social services)
Specify:
- ☐ ED RDC

Clinician Name:

Sign:

Grade:

Date:

9. Acknowledgments

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