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# Parental Alcohol Misuse and the Impact on Children: A Rapid Evidence Review of Service Presentations and Interventions

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# ABOUT

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## About

This report is based on independent research commissioned from the Children's Policy Research Unit and funded by the National Institute for Health Research Policy Research Programme. The views expressed are those of the author(s) and not necessarily those of the NHS, the National Institute for Health Research, the Department of Health and Social Care or its arm's length bodies, and other Government Departments.

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## Introduction

Parental alcohol misuse (PAM) can have profound effects on children's health and development. Yet, the extent to which the government, local authorities or clinical services are addressing PAM is not well understood. This rapid review was commissioned from the Children's Policy Research Unit (CPRU) by the Department of Health and Social Care (DHSC) to inform national and local policy interventions for children affected by PAM. It combines published research (emphasising findings from systematic reviews), administrative data, birth cohort studies and expert feedback to seek answers on:

### 1. How do families who are affected by PAM present to services?

*Objective:* Review prevalence of PAM in England, as recorded by services where children and parents present.

### 2. What strategies to reduce PAM and its consequences for children could be integrated into existing services?

*Objective:* Review interventions aimed at reducing PAM and related-harms among children.

This report should be considered in conjunction with the substantial evidence base on risk factors and effective interventions for alcohol misuse in adults.<sup>1-8</sup>

## Methods

1. **Prevalence:** We included 22 data sources and conducted 9 new analyses to synthesise the prevalence of PAM among parents and children across 14 different service sectors.
2. **Interventions:** Our scoping review identified 47 reviews (22 systematic reviews, 25 narrative reviews) and 313 primary studies (including 149 randomised controlled trials) on interventions for PAM and affected children.

## Key findings

Summaries below contain key messages, and where relevant, we draw on earlier published reviews and recommendations by NICE, the RGCP and PHE.<sup>4-6,9-14</sup> An overview of recommendations is provided at the end.

## Recorded prevalence of PAM across services

- Cohort studies show that between 14% and 26% of fathers with children aged 9-12 months and 14 years drink at levels classified as increased risk drinking, and between 5% and 18% of mothers drink at levels classified as increased risk drinking (*See Box 1 on pp.6 for alcohol misuse definitions*).
- Cohort studies show that the prevalence of PAM increases with a child's age, and was lowest for mothers during pregnancy and highest for parents between child ages 12 and 14 years old.
- In comparison to birth cohort studies, PAM was substantially under-recorded by all services across health and children's social care. Though, the recording was higher for services connected to the National Drug and Alcohol Treatment Monitoring System. Potential reasons for under-recording include failure to record parental status for presenting adults, under-recording of alcohol misuse throughout healthcare, and failure to consider and ask about PAM when children present with emotional and behavioural problems.
- Using linked mother-child pairs for hospital data in England, we found that between 2.1% and 9.8% of all mothers who gave birth in 2011 had an alcohol or drug-related admission up to 5 years before and 5 years after the child's birth (2006-2016).
- Using three large GP databases, we found that at least 1 in 17 children live with a mother with recorded alcohol misuse up to 5 years before and 5 years after birth.
- Of the identified datasets, only one service provided estimates of PAM relevant to fathers (SLAM substance misuse services).



## Interventions for PAM and affected children

We summarise findings from 47 reviews and 313 primary studies of which 149 were randomised controlled trials (RCTs). However, a full systematic review involving synthesis of the quality and individual study findings was beyond the scope of this review.

- Whilst a large number of evaluations relevant to PAM have been reviewed previously, few well-funded or comprehensive studies have been conducted in the UK (only 2 relevant RCTs), and few interventions focus specifically on affected children.
- Family-based interventions focusing on systemic and behavioural couples' therapy provide consistent positive evidence of improved family functioning and reductions of PAM, compared to interventions focusing on the problem drinker alone.
- Evidence of brief interventions (BI) in primary care including brief psychoeducational sessions, parenting skills interventions and psychoeducational groups, generally report positive results in encouraging affected parents into treatment and in improving family members psychosocial functioning, compared to treatment as usual.
- "Think-Family approaches" are a feasible approach for early identification and intervention for at-risk families affected by PAM, but need more robust evaluation.
- We found limited evidence on interventions for PAM regarding: (1) social care settings including those aimed at reducing out-of-home child placements, (2) community outreach interventions including housing services and 24/7 social support for high-risk drug and alcohol misusing mothers, (3) pharmacological interventions targeting pregnant women and the treatment impact this may have on children, and (4) interventions that target fathers.
- We found no evaluative intervention studies focusing on police settings, helplines, online interventions or education for PAM and/or affected children.

## Recommendations

- All services that encounter alcohol or drug misuse should consider the effects on the family and routinely ask about parental responsibilities and children at home. Clinicians should also ask about PAM when children present with related emotional and behavioural problems.
- All services that encounter PAM should consider involving health care agencies for the problematic parent or the affected child. They should implement safeguarding procedures if there are immediate concerns about child safety. However, further evaluation is needed in how to respond to PAM that does not raise immediate safeguarding concerns (incl. benefits and risks of safeguarding procedures).
- Parental or relevant carer status should be routinely recorded in adults' health and social care records. Further evaluation is needed of: (1) the benefits and risks of recording and responding to PAM, and (2) how to appropriately record problems and use linked family records.
- Improved implementation of effective interventions for PAM and affected children are needed in routine practice (especially in primary care), including: (1) continuity of care and increased capacity, with support from specialist adult and child mental health services, to safely and effectively respond to families affected by severe PAM, and (2) research focusing on effective implementation strategies in practice.
- Internationally well-evaluated interventions for reducing PAM and improved child outcomes need to be evaluated in the UK, with RCTs focusing on local service contexts. These should include 'Think family' health care responses across mental health, child health and primary and secondary care services.
- Further longitudinal research, using cohort and linked administrative health data is required to investigate the timing and manifestations of PAM and harms among families.

**P**arental alcohol misuse (PAM) can have profound effects on children’s health and development. Children who grow up with PAM face increased risks of neglect, sexual and physical abuse,<sup>15</sup> injury-related emergency admissions,<sup>16</sup> drug and alcohol misuse themselves,<sup>17,18</sup> criminal behaviours,<sup>19</sup> and suicide.<sup>20</sup> As a result, the whole family may require lifelong support across health and social services, posing a substantial economic burden on society.

Individual and societal contexts

PAM is heavily influenced by societal and individual contexts. This means that governments, local authorities and services need to work together to identify and provide effective support for vulnerable families. For example, deprivation, social norms, affordability and accessibility of alcohol have all been found to heavily influence levels of alcohol consumption and associated harms.<sup>21-24</sup> In Scotland, a recent national study showed that alcohol-related emergency admissions were seven times more likely to occur in individuals from the most deprived areas, compared with those from advantaged areas, despite similar levels of alcohol consumption.<sup>25</sup> Services are also facing barriers such as funding reductions, devolution to local authorities and reduced links between prevention programmes, specialist expertise and clinical services,<sup>26</sup> inevitably diminishing access to support for affected families.

Interventions

There is strong evidence for effective interventions to address alcohol misuse in adults. These include public health strategies, such as minimum alcohol pricing, warning labels, restricted availability and increased socioeconomic support.<sup>5,8,11,12,27,287</sup> Effective interventions for clinical practice also include screening, psychosocial interventions (e.g. brief motivational interviewing) and specialised alcohol treatments.<sup>5,13</sup> Despite this evidence base, effective interventions are often not implemented in practice (particularly in primary care),<sup>1,26</sup> preventing early identification and intervention for families affected by PAM.

This review focuses on interventions aimed at reducing alcohol misuse among parents and harms among children. Interventions for alcohol misuse in adults, in general, have been reviewed previously and are beyond the scope of this review.

Definition of alcohol misuse

The term alcohol misuse refers to individuals who drink over the recommended low-risk guidelines (Box 1).<sup>29</sup> This may include Alcohol Use Disorders (AUD), a term used by NICE covering a range of alcohol-related mental health disorders, including hazardous drinking, harmful drinking and alcohol dependence,<sup>415</sup> but also non-diagnostic terms such as increased and high-risk drinking. As illustrated in Box 1, we will define PAM as any drinking over the recommended low-risk level, including AUD and any drinking during pregnancy.

Box 1: Alcohol Misuse Definitions

<b>Low-risk drinking</b> Men & Women – Drinking on average less than 15 units per week, <sup>29</sup> except in pregnancy when alcohol should be avoided.
<b>Increased risk drinking</b> Women – Drinking on average 15-35 units per week <sup>13</sup> Men – Drinking on average 15 to 50 units per week <sup>13</sup>
<b>Hazardous drinking</b> A pattern of alcohol consumption that increases someone's risk of harm, including a range of biopsychosocial harms. <sup>13</sup> The term is currently used by the World Health Organization (WHO) and corresponds to a milder severity of alcohol use disorders (AUD).
<b>High-risk drinking</b> Women - Drinking on average more than 35 units per week <sup>13</sup> Men - Drinking on average more than 50 units per week <sup>13</sup>
<b>Harmful drinking</b> A pattern of alcohol consumption causing mental or physical damage. Corresponds to moderate severity of AUD. <sup>4</sup>
<b>Alcohol Dependence</b> A cluster of behavioural, cognitive and physiological factors linked with a strong desire to drink alcohol and difficulties in controlling its use. Someone who is alcohol-dependent may persist in drinking, despite harmful consequences. They will also give alcohol a higher priority than other activities and obligations. Highest severity of AUD. Alcohol dependence is a term used by DSM-5 and ICD-10. <sup>4</sup>

Epidemiology

An estimated 1.6% of all adults in England meet criteria for alcohol dependence. These estimates come from a recent study commissioned by PHE,<sup>30</sup> based on a nationally representative survey from 2014 (APMS). The sample involved responses on alcohol use from 7,101 individuals, of whom 77 were classified as alcohol dependent. By combining these estimates with the recorded number of parents in the national census and the National Drug Treatment Monitoring Service

(NDTMS), they were able to approximate the number of alcohol-dependent parents by age, sex and local authority. Between 189,119 and 207,617 children in England were estimated to be living with at least one alcohol-dependent adult (approximately 1.7% of all 12.3 million children aged ≤18 years in England 2015).<sup>31,32</sup> However, estimates excluded parents with increased risk drinking, hazardous drinking and pregnant women (Box 1), therefore excluding a large proportion of parents with PAM and its potential harm to children.

We aim to overcome this evidence gap by using birth cohort studies that directly measure PAM across the child's life course. We also use linked longitudinal administrative data to examine the proportion of parents with children who present to services with alcohol-related problems. Still, further research is required to determine cumulative risks of PAM, its timing and manifestations across the life course; accounting for responder biases and confounding.

### Why this review now?

In 2003, the Advisory Council on the Misuse of Drugs published *Hidden Harm*, a three-year enquiry into the needs of children of substance users.<sup>33</sup> The report contained 48 specific recommendations aimed at reducing harm for children affected by PAM. Now, 15 years later, the extent to which government, local authorities or clinical services are addressing PAM is still not well understood. In 2017, the All Party Parliamentary Group on Children of Alcoholics highlighted that although all local authorities commission alcohol treatment services, few local authorities reported strategies in place for affected children.<sup>34</sup> Evidence on where, when, and why families present to services, and how such contacts are recorded, is also important for measuring the burden of PAM and to inform service responses.<sup>35,36</sup>

As a step forward, the DHSC and DWP launched a £4.5m fund in April 2018 to encourage development of innovation projects for supporting children and families affected by PAM. As part of this initiative, DHSC commissioned this report to address evidence gaps specific to children affected by PAM.

### Aims

This review aims to: (1) inform the commissioning process for the DHSC/DWP innovation projects, (2) inform national and local policy relevant to PAM, and to (3) identify priorities for future research on PAM. We focussed on two research questions and objectives:

#### **1. How do families who are affected by PAM present to services?**

*Objective:* Review prevalence of PAM in England, as recorded by services where children and parents present.

#### **2. What strategies to reduce PAM and its consequences for children could be integrated into existing services?**

*Objective:* Review interventions aimed at reducing PAM and related-harms among children.

This report should be considered in conjunction with the substantial evidence base on risk factors and effective interventions for alcohol misuse in adults.<sup>4-6,9-14</sup>



This section reviews indicators and estimates of PAM in datasets relevant to services in England. Estimates aim to inform policy and service providers by: (1) mapping indicators routinely recorded across services with the potential to identify families affected by PAM, (2) describing whether estimates are consistent across services, and (3) identifying service gaps where low recognition of PAM might hinder access to interventions.

Data sources

A detailed overview of the methods and data sources is provided in Appendices 2-4. Briefly, we used four sources to identify any data, study or grey literature relevant to service indicators of PAM published between Jan 1980 and June 2018, including: (1) a systematic search of 18 electronic databases and national statistical office websites, (2) wider networks known to the PI’s across UCL for analyses of national epidemiological datasets, (3) independent input from an expert steering group, and (4) unpublished data, requested from relevant organisations and researchers.

Inclusion criteria

Data were included if they provided: (1) indicators to calculate the prevalence of alcohol or/and drug misuse, (2) indicators relevant to a specific service, and (3) information on parental status or on children associated with parental alcohol or drug misuse. Clinical case series or non-population-based samples were excluded. Abstracts and full-text articles that met inclusion criteria were screened by one reviewer, and data were extracted using standardised forms. Figure 1 provides an overview of the study selections. The full search strategy is provided in Appendix 2.

Classifications of indicators

Indicators from administrative datasets are used to depict alcohol-related diagnoses or outcomes closely related to PAM or parental drug misuse. Data on alcohol consumption from cohort studies are used to derive population-representative estimates of PAM (e.g. using the Alcohol Use Disorders Identification Test; AUDIT).<sup>37</sup>

We harmonised categories of PAM across datasets as depicted in Box 1. For example, for the Millennium Cohort Study (MCS), we categorised estimates into increased risk drinking based on validated cut-off scores for each different alcohol measure across time points (Table 1, Appendix 7).

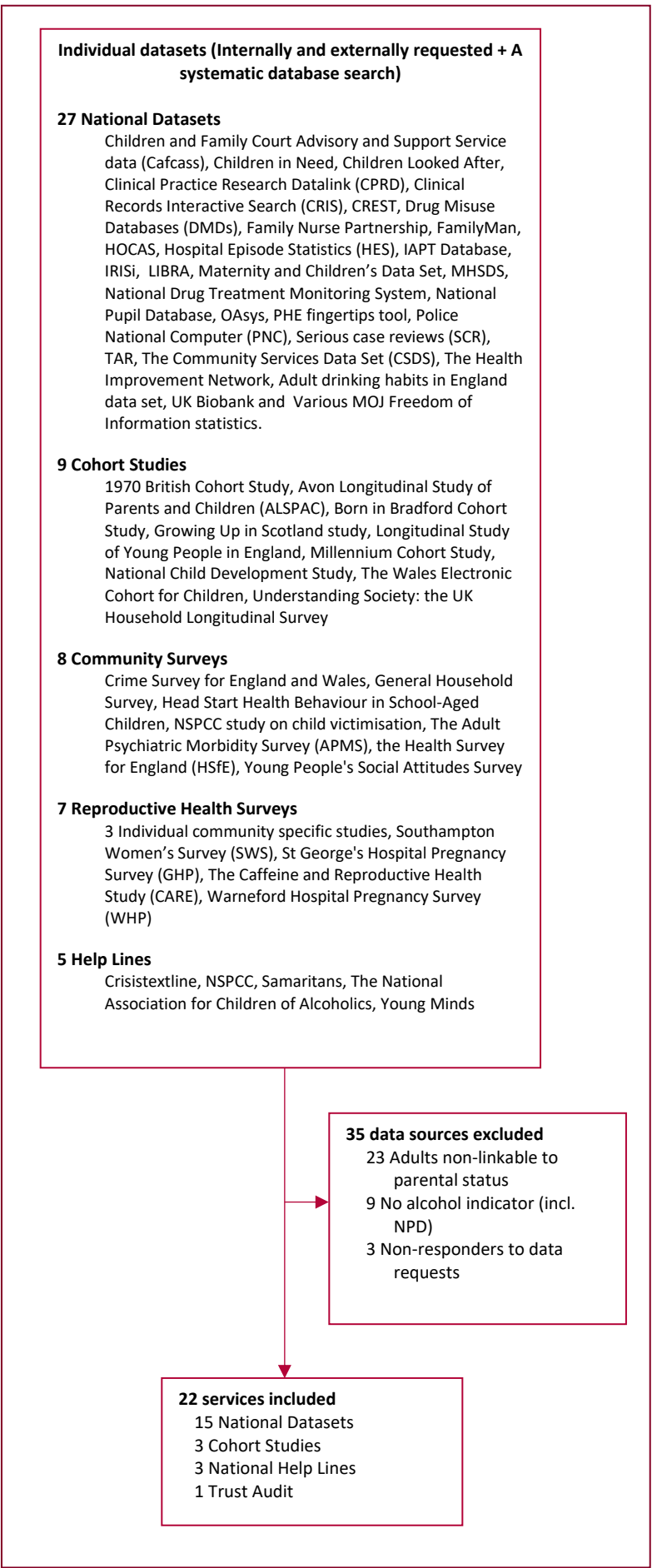


Figure 1: Flowchart of data source selections for prevalence of PAM.

When individuals number of alcohol units per occasion and drinking frequency were reported separately (e.g. Family Nurse Partnership), we used the formula provided by ONS to calculate average weekly units of alcohol consumption (e.g. >14 units/week = increased risk drinking; Appendix 7). For analyses of administrative datasets (e.g. GP records - CPRD, RGCP; Hospital admissions – HES-APC), we used previously validated ICD-10 and Read codes to ascertain alcohol-related events.<sup>38-40</sup> If individuals met criteria for PAM more than once, only the most severe recording was kept to minimise double counting. Finally, to aid comparison with estimates from PHE,<sup>41</sup> we used PHE’s “narrow measure” for all alcohol-specific analyses in HES. PHE’s narrow measure includes ICD-10 codes where an alcohol-related disease, injury or condition was the primary reason for a hospital admission or where an alcohol-related external cause was recorded in secondary diagnoses fields (Appendix 8).<sup>10</sup> Full descriptions of ICD-10, Read codes and instrument cut-off scores are provided in Appendices 7-10.

## Statistical Analysis

The point prevalence was calculated according to the number of identified PAM cases (per instrument cut-off score or 1 ≥ relevant code) divided by the total number of participants assessed at that same time. The Clopper and Pearson method was used to compute 95% confidence intervals of single proportions.<sup>42</sup>

## Ethics

We used aggregated or de-identified individual-level data (e.g. HES, CPRD), which did not require ethics approval.

## Where do families present to services?

Table 1 summarises the characteristics of included data sources and indicators, and Figure 2 presents individual prevalence estimates of PAM across services.

## Primary care

### General practices

We included three administrative GP data sources (CPRD, THIN, RGCP) on 830,662 linked mother-child pairs.<sup>43-45</sup> In total, 44,813 mothers (5.4%) had at least one recorded Read code indicative of increased risk or higher levels of alcohol misuse during each study period (Table 1). However, findings varied depending on data source and year of pregnancy. The lowest estimate was noted among THIN family-dyads (*mother-child pairs linked to male household member/potential father*) for mothers giving birth between 1994 and

1997, with 1.0% classified as PAMs at any time three years before birth and up to 15-years post-birth. By contrast, the CPRD and the RGCP showed an overall PAM estimate of 5.9% for mothers giving birth between 1990 and 2015, and 2005 and 2017, respectively. Among mothers in the CPRD, the prevalence of PAM was also higher during the 5 years before birth (prevalence range: 5.3% to 8.0%), whereas lower estimates were noted in the 5 years post-birth (prevalence range: 2.9% to 3.6%). These differences may, however, reflect variations in Read codes used across the CPRD and the RGCP databases.

As shown in Figure 2, the prevalence of PAM among GP practices increased over time. Between 2002 and 2017, estimates in CRPD increased from 3.1% to 4.3%, and between 2005 and 2017, estimates in RGCP had doubled, from 6.3% to 12.6%. The upward trend, however, may reflect increased recording by GPs and does not necessarily translate to an overall increase in the prevalence.

Overall, mothers GP data show substantially lower PAM estimates than the average prevalence among women aged ≥ 16 years reported by the Health Survey for England (e.g. 16%).<sup>46</sup> No data was available on fathers. Identifying fathers’ alcohol misuse in primary data is only possible by linking child-mother pairs to an adult male in the same household and is not reliable.

## Other Community Services

Of the 85,693 observations of mothers who enrolled in the Family Nurse Partnership between 2007 and 2017 (FNP; part of NHS),<sup>47</sup> 1.1% were classified as increased risk drinkers during pregnancy and up to 12-months post-birth. The prevalence also declined from 3.2% in 2007 to 0.3% in 2017, despite high levels of complete alcohol recordings (99.9%). In comparison with other services, FNP had the overall lowest prevalence of PAM, which appears to be substantially under-reported.

In IRISi, the primary care programme for domestic violence and abuse (DVA), 6.0% of referred mothers (including pregnant women) reported “a problem with alcohol” at baseline assessment between 2014 and 2018, and 4.4% of mothers reported of “a problem with drug use” (*n*= 2662-2658 mothers).<sup>48</sup> However, during the same period, 46% of all IRISi clients (including non-parents) had missing data on alcohol use. Given the high health risks associated with DVA in women,<sup>49</sup> and previous DVA estimates on alcohol misuse (e.g. 12%),<sup>50</sup> this data is likely to represent under-reporting.

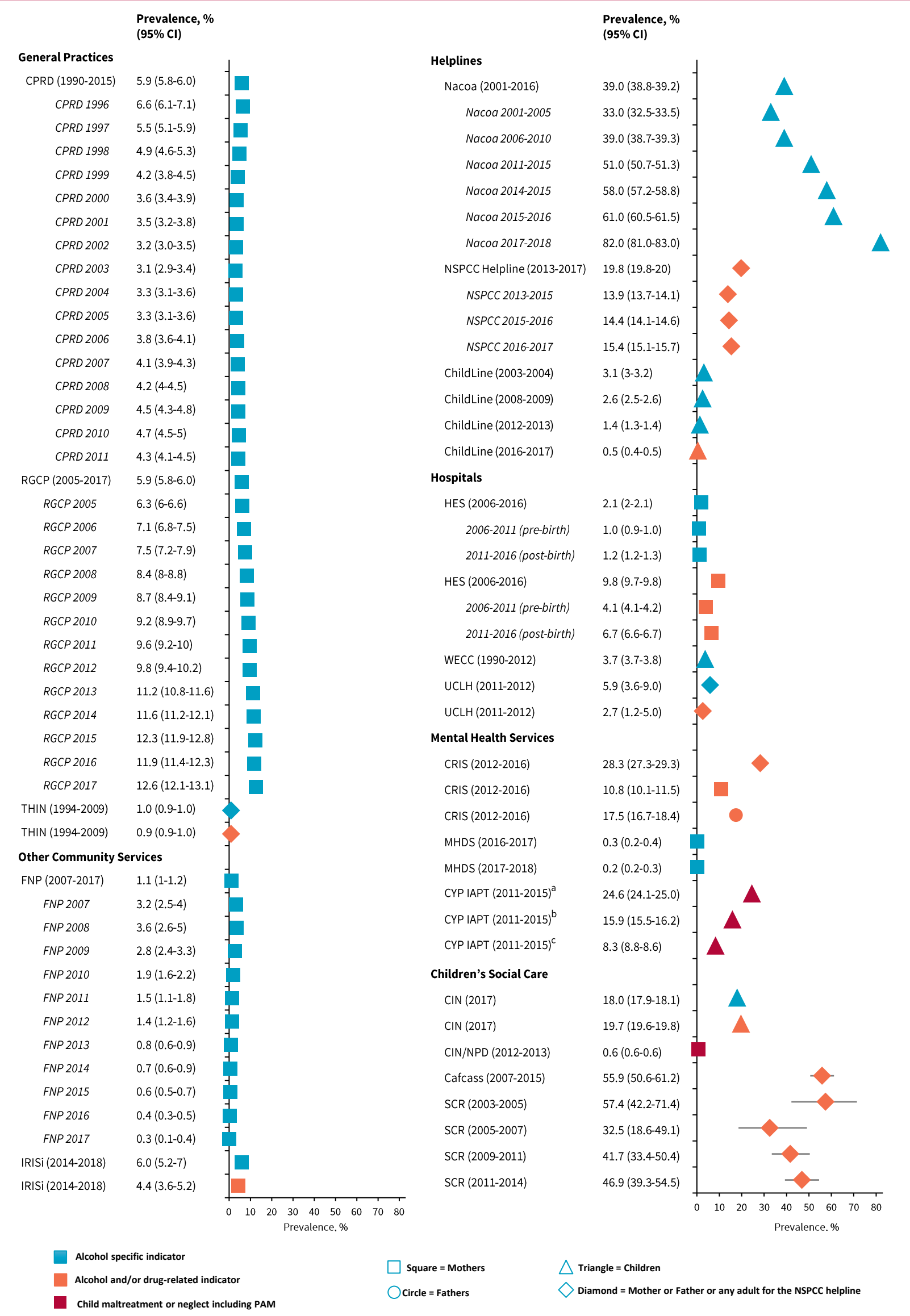
Service and Data Source	Indicator Definition	Applies to	Reference
<b>Primary Care</b>			
<b>General Practices</b>			
Clinical Practice Research Datalink (CPRD; 1990-2015)	The proportion of mothers with at least one GP Read code indicative of alcohol misuse. Estimates by year of pregnancy include at least one recording 5 years pre-post birth.	Mothers giving birth 1990-2015, who registered with their GP within 6 months of delivery date and who could be linked to the child's GP records.	CPRU, 2018*, Fang, 2018 (Unpublished) <sup>43</sup>
The Health Improvement Network (THIN; 1994-2009)	The proportion of mothers or linked potential fathers* with at least one GP Read code indicative of alcohol misuse or illicit drug use, recorded anytime 3 years pre-birth up to 15 years post-birth.	Family-dyads: Mothers giving birth 1994-1997, who registered with their GP within 9 months of delivery date, and who could be linked to the child's GP records and to a *single adult male in the household.	Wijlaars, 2014 (Unpublished), <sup>44</sup> CPRU, 2018*
Royal College of General Practitioners Research and Surveillance Centre (RGCP; 2005-2017)	The proportion of mothers with at least one GP Read code indicative of hazardous drinking or alcoholism. Estimates by year of pregnancy include at least one recording 3 years pre-birth and 6 months post-birth.	Mothers giving birth 2005-2017, registered with a GP connected to the RCGP Research and Surveillance Centre network.	Davies-Kershaw, 2018 (Unpublished) <sup>45</sup>
<b>Other Community Services</b>			
Family Nurse Partnership (FNP; 2007-2018): Nurse/Midwife Service	The total proportion of mother's alcohol assessments with an average consumption over 14 alcohol units per week or any alcohol during pregnancy. Estimates are stratified by year of programme enrolment.	All mother's self-reported assessments of alcohol in the FNP programme 2007-2018, as assessed during enrolment, 36-weeks gestation and 12-months post-birth. Mothers may meet criteria more than once.	FNP, 2018 (Unpublished) <sup>47</sup>
Identification and Referral to Improve Safety (IRISi; 2014-2018): GP Domestic Violence and Abuse Service	The proportion of mothers (including pregnant women) reporting of a problem with alcohol and drugs (yes/no), respectively	Mothers referred to IRISi between 2014 and 2018 with alcohol or drug questions completed.	IRISi, 2018 (Unpublished) <sup>48</sup>
<b>Helplines</b>			
National Society for the Prevention of Cruelty to Children Help Line (NSPCC; 2013-2017)	The proportion of helpline contacts made by adults reporting a concern of children affected by parental drug or alcohol misuse.	Any adult contacting the helpline due to concerns about children.	NSPCC, 2009, <sup>51</sup> 2018 <sup>52</sup>
NSPCC ChildLine (2003-2017)	The proportion of helpline contacts made by young people (aged <20) reporting of parental alcohol misuse (except for years 2016-2017 which includes drug or alcohol misuse).	Children or adolescents contacting the helpline for any concern.	NSPCC, 2008 (denominator only), <sup>53</sup> 2009, <sup>51</sup> 2015, <sup>54</sup> 2018 <sup>52</sup>
National Association for Children of Alcoholics (Nacoa; 2001-2018)	The proportion of answered helpline contacts made by a child of an alcoholic, as recorded by the counselling agent.	Children or adolescents contacting the helpline for any concern between 2001 and 2018.	Barron, 2017, <sup>55</sup> Nacoa, 2018 (Unpublished) <sup>56</sup>
<b>Secondary care</b>			
<b>Hospitals</b>			
Hospital Episode Statistics (HES APC): NHS Hospital Admissions	The proportion of mothers with at least one alcohol-related NHS hospital admission 5 years pre or post birth (ICD-10 codes). Estimates are stratified by delivery date.	All mothers giving birth in Hospitals in England 2011 (approx. 97% of all births) followed-up for hospital admissions 5 years pre and post-delivery date (includes approx. 98-99% of all admissions; 2006-2016). <sup>57,58</sup>	CPRU, 2018*
Wales Electronic Cohort for Children (WECC; 1990-2012): Hospital Admissions	The proportion of children who ever lived with an adult household member with an alcohol-related emergency hospital admission recorded after the child's birth.	All children, aged 0-11 years, born in Wales 1990-2012 with hospital admissions data and who could be linked to a mother registered with a GP.	Paranjothy, 2018 <sup>16</sup>
University College London Hospital Trust Audit (UCLH Audit; 2010-2011): Children referred to social care by hospital staff	The proportion of adults who are parents and present to hospital with problems of drug or alcohol misuse resulting in a clinician making a child safeguarding notification to social services.	Child social service safeguarding notifications made in an acute general hospital for adults presenting with violence, mental health problems or drug or alcohol misuse between 2010 and 2011.	Gonzalez-Izquierdo, 2015, <sup>59</sup> CPRU, 2018*
<b>Mental Health Services</b>			
Mental Health Services Data Set linked to the Maternity Services Dataset (MHSDS/MSDS): Secondary Mental Health services	The proportion of women in the perinatal period in contact with secondary mental health services who were referred to a specialist alcohol/drug service between pregnancy and up to 12 months post birth.	All women in the perinatal period in contact with secondary mental health services in England Oct 2016-Mar 2017 and Jan 2017- Dec 2017.	NHS Digital, 2017-2018 <sup>60,61</sup>
Clinical Research Information System (CRIS): SLAM Secondary Adult Mental Health Service	The proportion of adults attending SLaM treatment services for alcohol and/or drug misuse and reported having a dependent child.	All adults attending SLaM treatment services for alcohol and/or drug misuse 2012-2016.	Canefield, 2018 (Unpublished) <sup>62</sup>
Children and Young People's Improving Access to Psychological Therapies (CYP IAPT): Child and Adolescent Mental Health	The proportion of children assessed for mental health issues and who also had 'Parental health issues (Yes/No)' including alcohol misuse.	Young people (aged <26) seen across 75 services Apr 2011-Jun 2015, as part of the CYP IAPT service transformation initiative.	CORC, 2018 (Unpublished) <sup>63</sup>
<i>(Table continues on next page)</i>			

(Continued from previous page)

Service and Data Source	Definition	Applies to	Reference
<b>Children’s Social Care</b>			
<b>Social Care</b> Children in Need (CIN; 2017): Social Care	The proportion of children in need with alcohol misuse and drug misuse (respectively) identified in adults in the same household or in the child.	All children assessed by social care at the end of the assessment period and who were on a child protection plan as of 31 March 2017.	Department for Education, 2017 <sup>64</sup>
Children Looked After linked to the National Pupil Database (CIN/NPD/CLA): Social Care and Schools	The proportion of children aged 11 that entered out of home care between school years 1 and 6 due to family dysfunction, acute stress, abuse or parental illness (incl. PAM).	All children aged 11 at the start of the 2012/13 academic year who could be followed up school years 1-6.	A Jay, 2018 (Unpublished), <sup>65</sup> CPRU, 2018*
Serious Case Reviews (SCR), 2003-2014: Social Care	The proportion of parental alcohol or drug misuse identified as a concern in serious case reviews of children.	Intensive purpose and full samples of SCRs in Biennial Analysis reports conducted 2003-2005, 2005-2007, 2009-2011, 2011-2014, respectively.	Sidebotham, 2016, <sup>66</sup> Brandon, 2008, <sup>67</sup> Brandon, 2012, <sup>68</sup> Woodman, 2011 <sup>69</sup>
The Children and Family Court Advisory and Support Service (Cafcass; 2007-2016): Justice System	The proportion of mothers with substance misuse issues mentioned by professional in index recurrent care proceedings.	Mothers in recurrent care proceedings across 52 LAs with identified parental issues mentioned by professionals 2007-2017, ascertained from manual review of case files.	Broadhurst, 2017 <sup>70</sup>
<b>Cohort studies</b>			
Millennium Cohort Study (MCS; 2001-2015) <sup>71</sup>	The proportion of mother’s and partners, respectively, consuming >14 alcohol units per week / met cut-off score on the CAGE (≥2 females / ≥3 males) or the AUDIT-PC (≥4 score) in line with increased risk and high-risk drinking.	All mothers and partners in the MCS interviewed at 9-months, 3 years, 11 years and 14 years post-birth with complete cases on alcohol. The MCS comprises a cohort of randomly selected families in the UK, with children born between 2000 and 2002 (n=18,552) and followed up to 14 years of age (2015; n=11,726). The sample is broadly representative of the UK population (51% males, 82% white and 18% other ethnicities at baseline). <sup>71</sup>	CPRU, 2018*
The Avon Longitudinal Study of Parents and Children (ALSPAC; 1991-2003)	The proportion of mother’s and partners, respectively, consuming > 7 glasses of wine per week before and during pregnancy / consuming ≥21 alcohol units per week post-pregnancy / consuming ≥4 wine glasses for more than 10 days or every day in past month.	All mothers and partners in the ALSPAC interviewed during the second gestation period, 4 years and 12 years post-birth with complete cases on alcohol. The ALSPAC consist of all women residing in Avon giving live births between 1991 and 1992 (n=13,761), with mother-child pairs and partners followed up to 11 years post birth (2002-2003). The sample contains slightly more women who were married, white and less socio-economically deprived than the general English population. <sup>72</sup>	Mahedy, 2017, <sup>73</sup> (+ Unpublished data; Mahedy, 2018) Passaro, 1996-1997 <sup>74,75</sup>
Born in Bradford Cohort Study (BiB; 2007-2010)	The proportion of mothers consuming ≥5 alcohol units per week before and during pregnancy.	Mothers with singleton births attending the Bradford Royal Infirmary interviewed at 26–28 weeks’ gestation with complete cases on alcohol. The BiB includes over 80% of all women attending the infirmary and who gave live births between 2007 and 2010 (n=12,453) followed up to 8-months to 6-years post birth (depending on measure). The sample is mostly bi-ethnic with an overrepresentation of south-Asian ethnicities and higher deprivation compared to the English population, including 52.2% white British and 46.6% South Asian families. <sup>76</sup>	Cooper, 2013 <sup>77</sup>

CPRU, 2018\*= New analyses of datasets currently held within the Children’s Policy Research Unit at UCL. HES APC = Hospital Episode Statistics Admitted Patient Care, CAGE=The CAGE questionnaire, AUDIT-PC= Alcohol use disorders identification test; primary care, SLaM=South London and Maudsley NHS Foundation Trust, LA=Local Authority, READ code=standard clinical terminology system used in general practices.

**Table 1: Indicators of parental alcohol and drug misuse by data source**





## Helplines

For children and adolescents, aged 0-19 years, the highest overall prevalence of PAM came from national child helplines. Child reported estimates of PAM ranged from 3.1% for NSPCC's ChildLine to 82.0% for the Nacoe helpline (number of callers identified as children of alcoholics).<sup>51,52,55,56</sup> In comparison to Childline, however, substantially higher estimates were reported by the adult NSPCC Helpline,<sup>51-54</sup> with approximately 19.8% of callers reporting on concerns regarding parental alcohol or drug misuse (data based on callers relevant to children, excluding general enquires). Since 2001 and 2015, contacts regarding PAM also increased for both the Nacoe helpline and the NSPCC adult helpline (Figure 2). Still, NSPCC's categorisation of PAM has changed over time and estimates may not be directly comparable.

## Secondary Care

### Hospital admissions for mothers

Using the Hospital Episode Statistics (HES-APC), we found that 13,171 or 2.1% of all mothers giving birth in 2011 had an alcohol-related admission aligning with alcohol dependence (e.g.  $\geq 1$  ICD-10 code based on PHE's narrow measure; Appendix 8). Our estimates include approximately 97% of births in England in 2011, with mothers followed up from 5 years before birth to 5 years after birth. In contrast to GP estimates, mother's alcohol-related hospital admissions were also slightly higher post-birth (1.2%) compared with 5 years before birth (1.0%). This elevation may be explained by a generally higher admission rate among at-risk mothers following birth,<sup>78-80</sup> potentially contributing to higher identification of PAM. However, the overall estimates of PAM were still low and our findings mirror previous figures of alcohol-related hospital admissions published by NHS digital.<sup>81</sup> Accordingly, in the last 12 years, approximately 2.1% of all admissions in the general population have been alcohol-related and have remained relatively stable in the last 10 years (range: 2.1%-2.3%).<sup>81</sup>

Yet, hospital admissions are likely to severely underestimate PAM, as our measure include the most severe cases, and only when alcohol misuse has been identified as the cause of the admission. To demonstrate, in secondary analyses we used broader criteria for alcohol or drug-related admissions, and found that 9.8% of mothers had at least one alcohol or drug-related hospital admission in the 5 years before or after birth delivery in 2011 (Figure 2). Still, this criterion is based on a variety of coded substance-related admissions, which may not always be clinically significant (Appendix 9). Further research is needed to validate these findings.

### Hospital admissions for children

In Wales, data linkage of household members has recently been used to study hospital admissions of children ( $n=253,717$  children, born between 1990 and 2015) who lived with an alcohol misusing adult (adult with a previous alcohol-related admission).<sup>16</sup> Results revealed that 9,499 children (3.7%) lived with a household member with a previous alcohol-related admission. These children also had a 13% increased risk of emergency admissions for injuries and a 44% increased risk of emergency admissions for victimisation, compared with other children.

Overall, findings show that hospital data can be used to link mothers, children and household members for anonymised analyses of alcohol misuse and service evaluations. Further epidemiological investigations using linked hospital and other healthcare data could provide a broader measurement of PAM, informing strategies such as asking about children at home and identifying service responses for affected children.

### Adult mental health services

Approximately 28.3% of all adults attending treatments for alcohol and drug misuse services between 2012 and 2016 across SLaM reported having at least one dependent child.<sup>62</sup> Of these parents, 10.8% were male (herein potential fathers) and 17.5% were female (herein potential mothers). Yet, these estimates were based on self-report measures captured by searches in CRIS and may under-estimate parental status and levels of alcohol misuse, potentially due to implications of disclosure (e.g. losing one's child, stigma). For example, 130 mothers who reported not having any contact with their child (according to initial assessments), were in fact still in contact with their child according to free-text searches. Notably, CRIS was the only data source able to link fathers' parental status using risk assessment forms introduced by SLaM in 2012.

### Mental health services during pregnancy

As part of new experimental statistics, NHS Digital recently linked the mental health services dataset with the maternity services dataset to investigate pregnant women's use of secondary mental health services.<sup>47,48</sup> Approximately 85,7790 pregnant women were in contact with secondary mental health services between 2016 and 2017, and of these only 0.2% was referred to a specialist alcohol or drug misuse service.

### Child and adolescent mental health services

Data on PAM for child mental health services were limited. However, using assessments of 36,810 children seen across different CYP IAPT services,<sup>63</sup> we found that 24.6% were assessed to be living with parental health issues including alcohol misuse, 15.9% of all children were categorised as

having experienced abuse or neglect, and 8.3% were deemed to be 'children in need' as per social needs assessments.

Overall, we found no mental health service or hospital data on children that could be linked to alcohol or drug misuse in the household. As seen in the Welsh cohort study, this is a gap that could be addressed by linking health data with household identifiers.

## Social Care

### Children and Family Court

We used four data sources relevant to PAM across children's social care services and family courts. Here, the highest prevalence came from reports of Cafcass data for mothers in repeat care proceedings between 2007 and 2015.<sup>70</sup> In total, 55.9% of mothers had concerns mentioned by professionals regarding parental substance misuse. Data was ascertained from manual reviews of case files.

### Serious case reviews

We reviewed four data sources comprising serious case reviews (SCR),<sup>66-69</sup> including all published analyses made between 2003 and 2014 (except 2007-2009). Roughly 50% of all SCRs studied (range: 32.5% to 57.4%) included concerns about parental alcohol and drug misuse. These findings were based on manual review and free-text searches, which limited the sample of SCRs for some years (Table 1). Besides casefiles, no other data on PAM were routinely recorded in the Cafcass database or in SCRs.

### Children in Need, Children Looked After, and the National Pupil dataset

In the Children in Need (CIN) dataset from the Department of Education,<sup>64</sup> approximately 18.0% of children who were subject to an initial social care assessment were from a household with an alcohol misusing adult or where the child themselves had problems with alcohol.

Furthermore, by linking children in the National Pupil Dataset and the CIN with the Children Looked After dataset, we were able to retrospectively estimate the number of children in schools in 2011 (n=529,795) who entered care between year 1 and 6.<sup>65</sup> In total, 0.6% of all children in school years 1 through 6 had entered out of home care due to family dysfunction, acute stress, abuse and parental illness by age 11. Whilst these categories are likely to include PAM, data is based on hierarchal and broad coding systems which prevent extraction of specific estimates on PAM.

## Cohort Studies

Birth cohort studies provide a reliable measure to estimate PAM in the community. Using data from the Millennium Cohort Study (MCS, 2001-2015; see Table 1 for profile), we estimate that between 14% and 26% of children between the ages 9-months 14-years lived with a father affected by increased risk drinking, and between 5% and 18% of children lived with a mother affected by increased risk drinking. Findings from the Born in Bradford cohort study (BiB) also show that 15.2% of mothers who presented to the hospital infirmary during pregnancy (2007-10) were classified as increased risk drinkers.<sup>77</sup>

Overall, PAM estimates from cohort studies are far higher than the prevalence observed in administrative datasets from GPs and hospital services. These differences may indicate that primary and secondary care services heavily underestimate the prevalence of PAM and that many affected children never are identified. This assumption is consistent with a previous study in 2009,<sup>82</sup> using cross-sectional data from the General Household Survey, Household Survey for England and the British Crime Survey from 2004. Accordingly, between 22.0 and 23.4% of parents were classified as Hazardous drinkers. However, a direct cross-comparison using linked cohort and administrative data was beyond this review, and differences in estimates may be due to variations in alcohol classifications and populations. Further research is needed into the barriers and trends of PAM recordings across services.

## Parental alcohol misuse over the child's life course

We included 3 prospective birth cohort studies to investigate PAM over the child's life course (Table 1). Alcohol use was assessed from 3 months before pregnancy (asked retrospectively during pregnancy) and up to 14 years post-birth. However, only the MCS provided nationally representative estimates,<sup>71</sup> whereas BiB and ALSPAC were subnational cohorts (Figure 3), and less representative to the general population (Table 1).

### Mothers

For mothers, the prevalence of increased risk drinking increased over time (Figure 3). Prior to pregnancy, estimates ranged from 4.4% for the MCS and 7.0% for BiB, to 9.7% for the ALSPAC study.<sup>73,68,69</sup> By age 11 and 12 of children, mothers' prevalence of increased risk drinking had risen to 10.9% for the MCS to 15.2% for the ALSPAC. By age 14, 18.1% of MCS mothers were classified as increased risk drinker. Positively, the lowest recorded prevalence occurred during pregnancy in the second trimester, where both the BiB and ALSPAC study reported estimates ranging from 1.6% to 3.1%.

Taken together, the data suggest that mothers' drinking increased over time (except in pregnancy) and by 14 years post-birth, mothers drinking in the MCS exceeded the suggested national average of increased risk drinking women in the HSE (16% of women aged  $\geq 16$  years).<sup>46</sup>

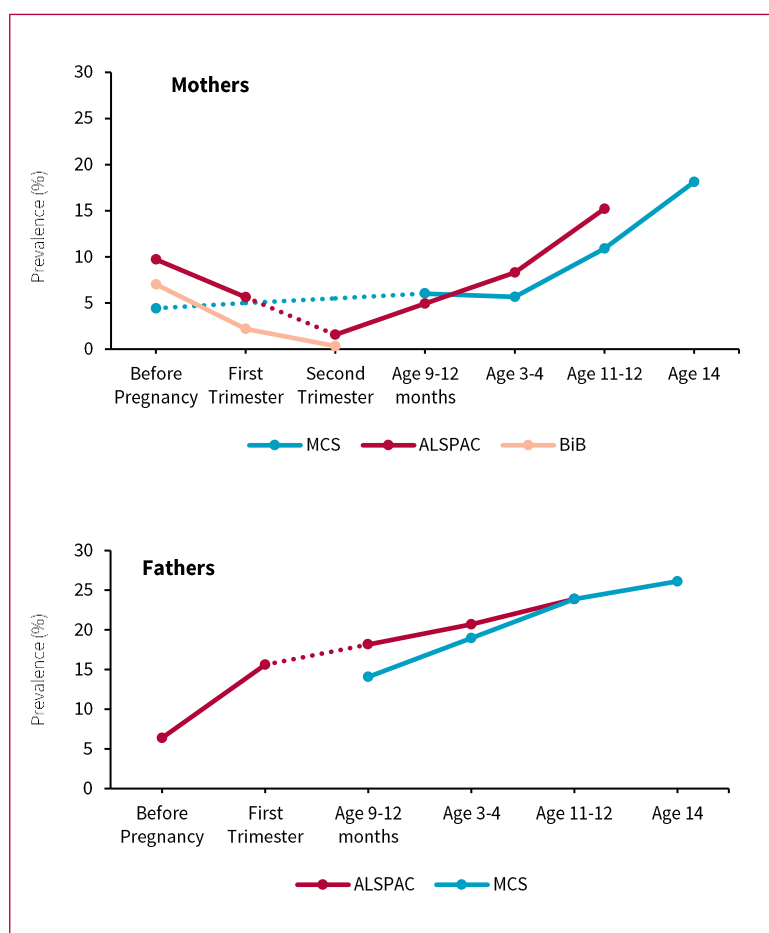
### Fathers

In contrast to mothers' drinking, father's prevalence of increased risk drinking substantially increased throughout childhood up to 14-years post birth (Figure 3).<sup>7368,69</sup> Before pregnancy, 6.4% of ALSPAC fathers meet cut-off score for increased drinking and by the first trimester, the prevalence had increased to 15.6%, with similar levels reported in the MCS (14.1%; 9 months post-birth). Following birth, both studies reported an additional increase, ranging from 20.7% in the ALSPAC at four years post-birth and up to 23.9% in both the MCS and ALSPAC at ages 11-12. By age 14, 26.1% of all fathers in the MCS (*with complete records on alcohol*) were estimated to meet cut-off score for increased risk drinking.

Fathers' estimates of drinking, however, never reached the suggested national average. In 2016, the Health Survey for England reported that approximately 31% of adult males (aged  $\geq 16$  years) are increased risk drinkers.<sup>46</sup> Nevertheless, to our knowledge, these findings represent the first estimates of parents drinking over time using large representative birth cohort studies in England. Further research is needed to determine the cumulative risk of PAM across the child life course, accounting for confounders.

### Caveat

The findings are a preliminary review of the data available for PAM, without adjusting for data quality, confounding and heterogeneity within and between samples. The results should therefore be interpreted with caution.



**Figure 3: Prevalence of increased risk drinking among mothers and fathers**

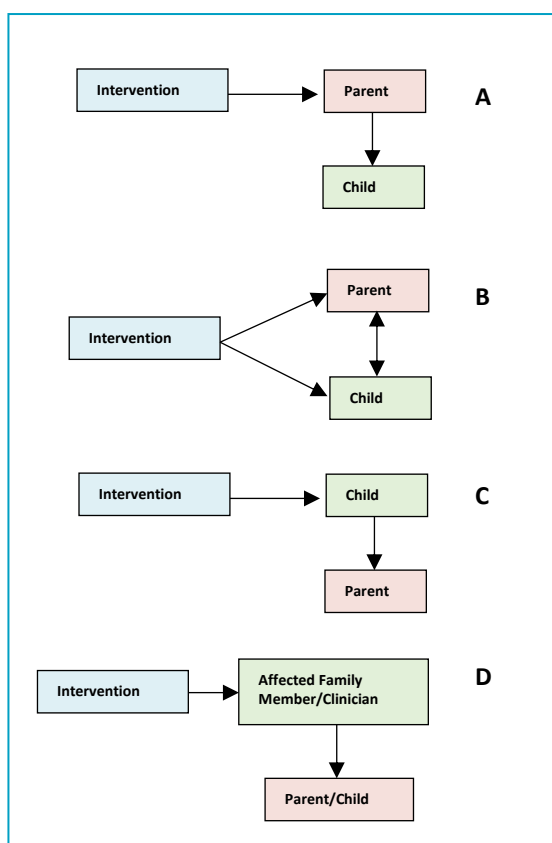
Each point represents the point prevalence of PAM for each data set. Estimates are unweighted and restricted to singleton births only. Dashed lines represent the periods with no available data. No data was available for fathers during the second trimester. BiB=Born in Bradford Cohort Study, MCS= Millennium Cohort Study, ALSPAC= Avon Longitudinal Study of Parents and Children.

## CHAPTER 3: INTERVENTIONS

This chapter presents a scoping review of comparative intervention studies for PAM and affected children. Searches were conducted between May and June 2018. Findings from systematic reviews and meta-analyses are emphasised over individual reports. A full systematic review of identified interventions was beyond this scoping review.

### Methods

Using a “Think-Family” framework (see Box 2 for definition),<sup>83</sup> interventions were classified into four broad categories (Figure 4): (A) interventions directed towards the parent, indirectly reducing harm in the child, (B) interventions directed at both parents and children, (C) interventions directed towards the child, indirectly addressing the parent behind the child, and (D) interventions directed to other affected family members or healthcare staff.

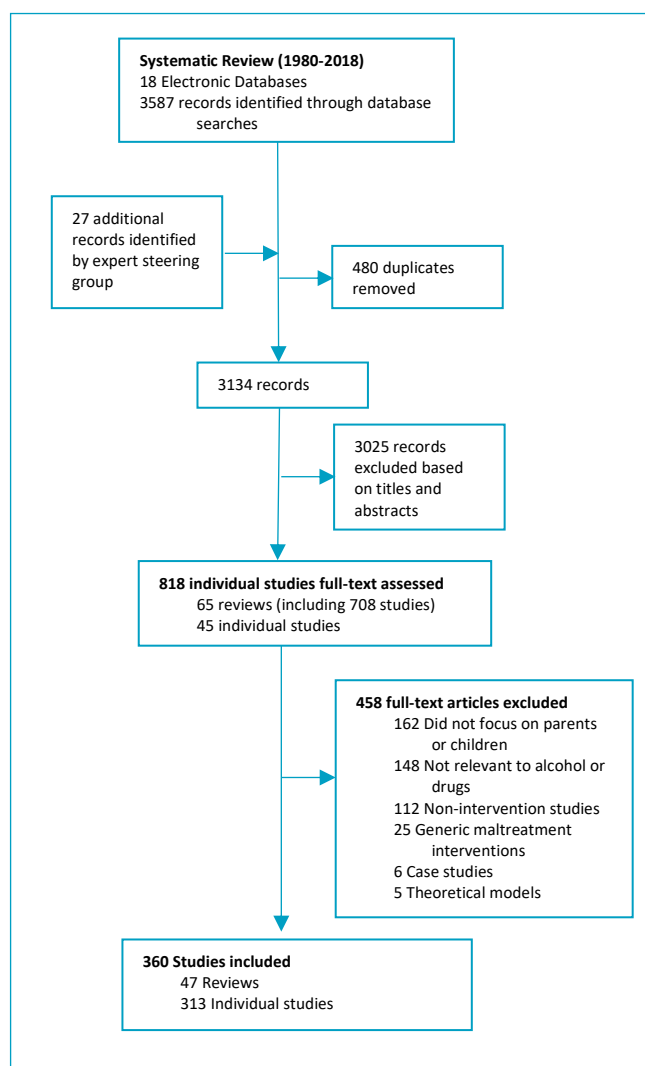


**Figure 4:** The “Think Family” Framework for child maltreatment adapted for interventions to reduce harm to the child of parental alcohol misuse .

### Data sources

Details of the full search strategy are provided in Appendix 2. Briefly, we used three strategies to identify relevant studies: (1) a systematic search of 18

electronic databases, (2) input from an expert steering group, and (3) unpublished reports requested from relevant organisations and researchers.



**Figure 5:** Flowchart of study selections for interventions of PAM.

### Inclusion criteria

We identified 3,614 references through database searches and steering group recommendations (Figure 5). Of these, 47 reviews (25 narrative reviews, 22 systematic reviews) and 313 individual studies (301 unique studies) met criteria for full-text review. We excluded studies if they: (1) targeted adults in general, without specific reference to parental drug or alcohol misuse, (2) focused on reducing alcohol consumption in children without addressing PAM, or (3) had no comparison group (at minimum, we accepted pre-post comparisons). To provide information on existing services and interventions, we separately identified qualitative and descriptive studies in the UK.

For all other studies, we defined effectiveness by the relative or absolute reduction of any alcohol or drug-related harms,<sup>84</sup> in favour of the intervention group relative to alternatives or treatment as usual (TAU). Aligning with recent reviews by PHE,<sup>9,11</sup> we also included interventions for parental drug misuse, as alcohol is a common factor.<sup>84</sup>

Abstracts and full-text articles meeting inclusion criteria were screened by one reviewer, and data were extracted using a standardised form. Any uncertainty over study inclusions was resolved through discussion with a second reviewer (R.G). Characteristics of included studies are reported in Appendices 5-6.

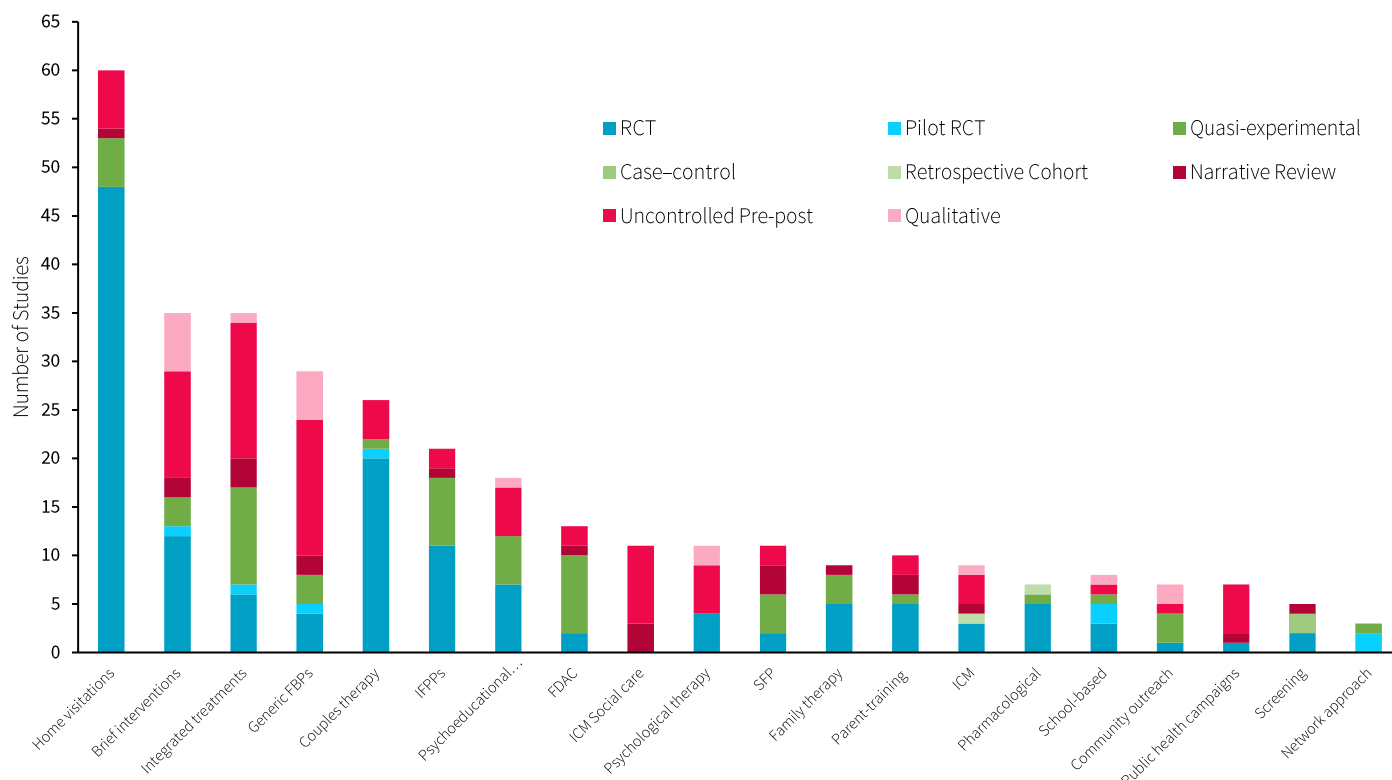
### Overview of included studies

Table 2 provides an overview of the included study characteristics. In total, 228 (63%) studies were from the USA and 66 (18%) were from England. A large minority of studies were RCTs (149, 41%) or uncontrolled pre-post designs (85, 24%), ranging from 20 to roughly 1000 participants. One retrospective cohort study conducted in England used administrative data involving 12,850 participants.<sup>85</sup> Of the 149 RCTs, 5 (3%) were from England. Two RCTs focused on parental drug and alcohol misuse,<sup>86-88</sup> two evaluated mothers' alcohol consumption during pregnancy without reference to misuse,<sup>89,90</sup> and one focused on affected family members only.<sup>87,88</sup>

Of the 47 reviews, 22 were systematic reviews (6 meta-analyses), ranging from empty reviews (no studies meeting inclusion criteria) to one review of 53 unique studies (range  $n=1$  to 26,264). There was substantial heterogeneity in terms of study designs and methodological quality (Figure 7).

	Number Of studies (%)
<b>Study Type</b>	
Randomised Controlled Trials	141 (39)
Pre-Post Uncontrolled*	85 (24)
Quasi-Experimental	56 (16)
Narrative Reviews	22 (6)
(Qualitative)*	19 (5)
Systematic Reviews	16 (4)
Pilot Randomised Controlled Trials	8 (2)
Meta-analyses	6 (2)
Rapid Reviews	3 (1)
Case-Controls	2 (1)
Retrospective Cohorts	2 (1)
<b>Directed to</b>	
Parent only	161 (45)
Parent and Child	118 (33)
Children only	37 (10)
Family Member only	26 (7)
Parent and Family Member	15 (4)
Clinician/Staff	3 (1)
<b>Country</b>	
USA	228 (63)
UK	71 (20)
England	66 (19)
Scotland	3 (1)
Ireland	2 (1)
Australia	15 (4)
Canada	13 (4)
Netherlands	6 (2)
India	5 (1)
South Africa	4 (1)
Sweden	3 (1)
Austria	2 (1)
Other countries	13 (4)
<b>Intervention Type</b>	
<b>Family-Based Interventions</b>	
Home-Visitation Programmes	63 (18)
Family-Based interventions	40 (11)
Integrated Treatment Services	40 (11)
Intensive Family Preservation Programmes	23 (7)
Family/Systemic Therapy	10 (3)
Parenting Programmes	10 (3)
<b>Intensive Case Management</b>	
Generic Intensive Case Management (incl. SFP)	20 (3)
Case Management in Social Care	13 (4)
Community Outreach	7 (2)
<b>Prevention &amp; Brief interventions</b>	
Brief Interventions	40 (11)
Psychoeducational Groups	18 (5)
School-Based Interventions	8 (2)
Public Health Campaigns	7 (2)
Screening	5 (1)
Family Network Approaches	3 (1)
<b>Psychological Therapies</b>	
Couples Therapy	28 (8)
Individual Psychological Therapy	13 (4)
<b>Criminal and Justice System interventions</b>	
Family Alcohol and Drug Courts	13 (4)
<b>Pharmacological Treatments</b>	
	9 (2)
*Did not meet inclusion criteria. Counts include reviews and qualitative studies. Numbers may not add up due to rounding. Uncontrolled pre-post designs refer to studies that compare pre-post scores of the intervention group only, without other controls.	
<b>Table 2. Overview of the 360 Included studies*</b>	



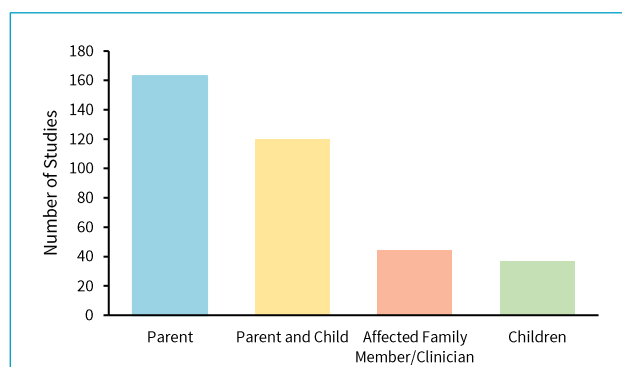


**Figure 7: Number of interventions types by study design**

Blue colours represent study designs of higher methodological quality. Green colours indicate designs of moderate methodological quality and red colours represent study designs of lowest methodological quality. Darker colours in each category indicates subcategories of higher quality designs whereas lighter colours indicate lower quality study designs. FBPs = Family-based Intervention programmes, IFPPs = Intensive Family Preservation Programmes, ICM = Intensive Case Management, FDAC=Family Drug Alcohol Courts, SFP= Strengthening Families Programme.

## Population

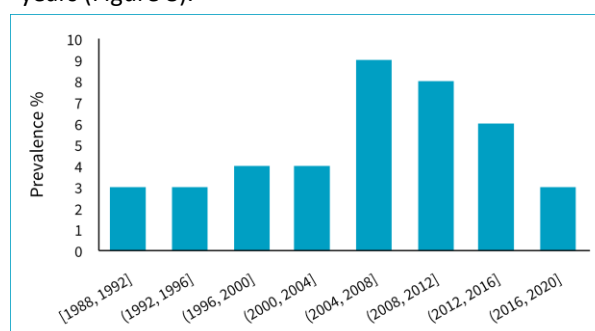
Of 360 studies, almost half of the interventions were directed towards parents (161, 45%; option A Figure 4). One-third of the studies (118, 33%) were directed to parents and children (mostly children aged <3 years; option B Figure 4), mainly through home visitation programmes (Figure 6; Table 2). Only 37 studies (10%; 15 studies in England) directly targeted affected children of PAM (option C Figure 4), and few studies evaluated interventions for older children. The lack of child-directed interventions highlight a research gap, especially for adolescents, who face increased health risks due to peer environments, risky behaviours and biological changes accompanying puberty.<sup>91-93</sup>



**Figure 6: Number of intervention studies according to 'think-family' groups A-D in Figure 4.**

## Interventions

We categorised interventions into 6 different strategies, including 20 subgroups (Figure 7). As presented in Figure 7, home visitation programmes (HVP) for young substance or alcohol misusing mothers was the most frequently evaluated intervention. In total, we found 48 RCTs of HVPs including 4 RCTs conducted in England (e.g. Parents Under Pressure, Building Blocks Nurse Partnership; Table 3). Intensive case management (ICM) was the second most studied strategy (e.g. Strengthening Families Program, Breaking the Cycle), followed by brief interventions (BI; e.g. primary care assessments, psychoeducation) and integrated treatment services (IT; e.g. residential substance misuse treatment, supplemented by parent training). Notably, since 2009, reports of intervention studies relevant to PAM have decreased, with mainly uncontrolled pre-post designs being published in later years (Figure 8).



**Figure 8: Proportion of the 360 included studies published between 1997 and 2018.**

Main Intervention	Evidence Reviewed	Main Population	Main Setting	Effect	Limitations	Summary	References
<b>A. Prevention Strategies &amp; Brief interventions</b>							
A1. Multimedia Health promotion programmes (e.g. Radio & TV advertisements, Information Pamphlets)	1 RCT 5 Pre-post* 1 Narrative review	Pregnant women	Media	Large effects associated with increased knowledge of the harmful effects of alcohol misuse to the foetus. No study reported significant reductions in women's drinking.	No study reported on child- or father-related outcomes. Studies were of poor quality, with only one 1 RCT of adequate randomisation and concealment.	Further high-quality RCTs needed to investigate the impact of public health interventions on reducing alcohol use child-related harms in pregnancy and in fathers.	94-100
A2. Brief Interventions in primary care (e.g. 5-Step Method, Generic Pressure to change approaches, Stepping Stones, The Dyadic Relapse Prevention, Network Approach)	13 RCTs 4 Systematic reviews 1 Rapid review 3 Quasi-experimental 11 Pre-post* 2 Narrative reviews 6 Qualitative*	Family members or parents affected by increased risk/hazardous drinking	Primary care, community and hospitals	Small to moderate effects on increased coping strategies, self-esteem, knowledge and decreased stress/distress and in engaging problem drinker into treatment, but no overall benefits compared to other BIs.	Only 1 RCT conducted in the UK. No outcomes identified relevant to children or adolescents. No overall differences discerned between different BIs at long-term follow-ups (≥12 months).	Preliminary evidence shows that BIs, regardless of type, initially improve psychological coping for affected family members of PAM and may support initiation of treatment for problem drinkers. RCTs needed to evaluate effects on children.	87,88,101-138
A3. Primary Care Assessment and Management (e.g. The Hague Protocol, Safe Environment for Every Kid, RGCP toolkit)	2 RCTs 2 Case-control 1 Rapid review	Parents and children	Primary care and A & E	Large effects in reducing child maltreatment and increased early intervention for children affected by parental health problems including PAM. Collection of pre-post studies also show feasibility of implementing "Think-Family" approaches in routine practice.	Evidence for effectiveness based on only two RCTs from the USA and uncontrolled pre-post designs.	Routine child maltreatment assessments including SEEK, "Think-Family" approaches, and recording whether adults have children are promising. UK RCTs needed to evaluate appropriate use of assessments and recording for monitoring, identifying and risk managing PAM and other family members.	139-143
A4. School-Based Interventions (e.g. STAR-project, Teen Club, Stepping Stones, Images within, Friends in need, Stress Management & Alcohol Awareness Program')	5 RCTs 1 Quasi-experimental 1 Pre-post* 1 Qualitative*	Children affected by parental drug and alcohol misuse	Schools and community	Small improvement effects in programme knowledge and emotion-focused coping immediately post-intervention. No impact on validated mental health measures.	No reported long-term effects (>12 months). Mostly targeting older children (>8-10 years old). No UK interventions identified.	Evidence for school-based interventions are mixed and in its early development, with a small number of programs reporting of positive outcomes. Further research for PAM prevention programs for children in English schools is needed.	112,144-148
A5. Psychoeducational Groups (e.g. Stones', 'Psychoanalytic Mother-Infant Therapy Group', 'Behavioural Exchange Systems Training')	7 RCTs 5 Quasi-experimental 5 Pre-post* 1 Qualitative*	Parents and children	Primary care and community	Small to moderate effects for child and parent outcomes relative to waiting lists only, but no overall benefits compared to other BIs.	No overall health improvement compared to other BIs at follow-up. Only one study conducted in England.	Psychoeducational groups appear to produce similar effects in children's coping and in mother's reduction of alcohol consumption as standard and alternative BIs.	149-166
A6. Online Interventions & Help Lines		Parents and children	Online and community	N/A	No identified evaluative studies (excluding qualitative studies).	Online interventions need RCTs and qualitative studies to determine their relative effects compared with other interventions in at-risk children and parents affected by PAM.	N/A
<b>B. Psychological Therapies</b>							
B1. Individual Psychological Therapy (e.g. Rational Emotive Behaviour Therapy, Cognitive Behavioural Therapy)	4 RCTs 2 Systematic reviews 5 Pre-Post* 2 Qualitative*	Parents and pregnant women	Mental health services	Inconclusive	Inconsistent results across reviews and individual's studies. Most studies focused on pregnant women and no study reported on child outcomes following treatment.	High-quality RCTs needed for integrated individual psychological interventions with long-term follow-up for children and families affected by PAM.	167-179
B2. Couples Therapy (e.g. Behavioural Couples Therapy, Alcohol-focused Behavioural Couples Therapy)	21 RCTs 1 Meta-analysis 1 Systematic review 1 Quasi-experimental 4 Pre-post*	Parenting couples and children	Primary and secondary care	Moderate to strong evidence of reduced drinking and improved marital adjustment/family functioning, maintained up to 12 months follow-up ( $d=0.36-0.54$ ). Weak evidence of improved outcomes for children.	No UK tested interventions targeting parents, and few child-related outcomes reported.	UK RCTs needed to replicate American RCTs for behavioural couples' therapy, with a stronger focus on child outcomes and service integration.	180-207
<i>(Table continues on next page)</i>							

Main Intervention	Evidence Reviewed	Main Population	Setting	Effect	Limitations	Summary	References
<i>(Continued from the previous page)</i>							
<b>C. Family-Based Interventions</b>							
C1. Family-Based Interventions (e.g. Strengthening Families Programme, Focus on Families, Family Competence Programme, Families Facing the Future, Community Reinforcement and Family Training)	7 RCTs 1 Meta-analysis 1 Systematic review 7 Quasi-experimental 17 Pre-post* 3 Narrative reviews 5 Qualitative*	Children and parents affected by increased risk drinking/alcohol dependence	Voluntary sectors and secondary health services	Small to moderate effects in: reducing older children's and parent's substance use; increased parental skills, self-efficacy and social skills in children. Moderate improvements in family functioning.	No UK RCTs. International RCTs are of low quality with high attrition and few reporting adequate concealment. Evidence from UK settings is based on small uncontrolled pre-post studies, many without quantitative analysis or solely based on qualitative interviews. Few quantitative studies report on direct child outcomes.	Family-Based Intervention show promising small to moderate effects in reducing alcohol-related harms. UK RCTs needed, with statistical power to detect small effects.	36,85,208-245
C2. Home Visitation Programmes (e.g. Parents Under Pressure, Family Nurse Partnership, Healthy Start Program, Early Start, Parents as Teachers, Focus on Families)	48 RCTs 1 Meta-analysis 2 Systematic reviews 6 Quasi-experimental 6 Pre-post* 1 Narrative review	Young/ disadvantaged substance misusing mothers	Primary and secondary care, voluntary sector	Inconsistent or small effects in reducing drug or alcohol misuse in young mothers, with up to 15-years follow-up.	Few studies target alcohol or drug misusing parents and do not assess child outcomes after the antenatal period. Only 1 RCT conducted in England focusing on PAM (Parent Under Pressure; positive outcomes).	Insufficient evidence to recommend the routine use of home visits for drug or alcohol misusing pregnant or postpartum women. Further large, high-quality RCTs are needed.	89,90,246-307
C3. Parenting programs (e.g. Preparing for the Drug-Free Years Programme)	5 RCTs 1 Quasi-experimental 2 Pre-post* 2 Narrative reviews	Parents and children	Primary and secondary care, voluntary sectors	Small to moderate effects on increased parenting skills among substance and alcohol misusing parents. Generally, not associated with decreased alcohol or substance misuse compared to TAU or alternative BIs.	No UK study identified. Most studies relied on parent reports of child outcomes. Few long-term outcomes reported (e.g. >12-months)	Parenting programmes are associated with improved parenting for families affected by PAM but generally not associated with decreased alcohol or substance misuse compared with TAU. UK RCTs focusing on service integration needed.	308-317
C4. Family Therapy (e.g. Multi-Systemic Family Therapy, MST-Building Stronger Families)	5 RCTs 1 Meta-analysis 3 Quasi-experimental 1 Narrative Review	Parents and children	Primary and secondary care, voluntary sectors	Moderate effects in reducing parental drug and alcohol misuse among the severe spectrum of PAM, including dependence.	Most RCTs from the USA with large between-study heterogeneity in terms of content and target population. Limited child outcomes reported.	Family therapy offers a viable and potentially effective option in reducing PAM and related-harms among children. UK RCTs needed to assess effects in English settings.	318-327
C3. Integrated Treatment Services (e.g. Substance misuse outpatient and inpatient services + parenting input)	7 RCTs 4 Systematic reviews 1 Meta-analysis 10 Quasi-experimental 14 Pre-post* 3 Narrative reviews 1 Qualitative*	High-risk substance misusing mothers	Hospitals and secondary health Services	Small to moderate improvement effects on parenting skills and reduced alcohol misuse, but generally not more effective than non-integrated programmes.	Studies mainly of poor methodological quality. Only one uncontrolled pre-post design conducted in England. Positive outcomes highly dependent on continuity of care; environmental stress and/or psychiatric problems. Few studies reported on child outcomes.	Integrated treatment services are associated with consistent reductions in alcohol and drug-related harms among parents and children compared to waiting lists, but generally, do not produce better abstinence outcomes than alcohol treatment alone. UK RCTs needed to assess effects in English settings, focusing on child outcomes.	328-363
<b>D. Intensive Case-Management</b>							
D1. Intensive Case Management Programmes (e.g. New Choices Program, Sobriety Treatment and Recovery Teams)	3 RCTs 1 Retrospective Cohort 3 Pre-post* 1 Narrative Reviews 1 Qualitative	Parents and children	Voluntary sectors and secondary care	Modest effects in improving parents' treatment engagement.	Effects limited to studies with high risk of bias. Studies applied narrow baseline assessments of alcohol, using non-validated measures. Evaluation studies mostly target mothers. No UK studies identified.	Benefits uncertain. UK RCTs needed focusing on family functioning, child outcomes and validated outcome measures.	236,364-371
D2. Intensive Family Preservation Programmes	11 RCTs 2 Meta-analyses 8 Quasi-experimental 1 Narrative review 2 Pre-post*	Parents and children	Children's social care, voluntary sectors and secondary care	Moderate effects on improved family functioning ( $d=0.486$ ), but are generally not effective in preventing out-of-home child placements.	Effects limited to higher risk bias studies. Few effect sizes related to alcohol misuse, psychiatric symptoms or decreased child maltreatment. No UK studies identified.	Benefits uncertain. UK RCTs needed focusing on family functioning and child outcomes.	372-394
D3. Children's Social Care Case Management (e.g. Social worker child care placements or Child Welfare input, Children looked after)	2 Rapid reviews 8 Pre-post* 3 Narrative reviews	Substance misusing mothers with high levels of socio-economic comorbidities	Social care	Inconclusive. UK observational studies suggest that ICM in social care is associated with high risks of failure (possibly due to indication bias), with a lack of early intervention, and children from out-home placements reunified with carers still affected by PAM.	No comparative studies investigating the effectiveness of case management in social care for reducing out-of-home placement of children affected by PAM. Evidence limited to uncontrolled pre-post designs and free-text ascertainment of outcomes.	ICM in social care to prevent out-of-home child placements urgently need RCTs to evaluate outcomes of different risk assessment strategies and ITs compared with usual care or with other services (incl. mental health and/or primary care multidisciplinary teams).	395-407
D4. Community Outreach (e.g. Arbelour Edinburgh Outreach Project, The Families in Transition, Family First)	1 RCT 3 Quasi-experimental 1 Pre-post 2 Qualitative*	High-risk parents and vulnerable children	Community	Inconsistent results.	Only 1 RCT identified. large methodological flaws across studies and substantial heterogeneity in terms of intervention content and population studied. No UK identified study.	Mixed designs RCTs using qualitative and feasibility outcomes needed to assess relevance to PAM and child outcomes.	408-414
(Table continues on next page)							

Main Intervention	Evidence Reviewed	Main Population	Setting	Effect	Limitations	Summary	References
<b>E. Criminal and Justice System</b>							
E1. Family Treatment Drug Courts (e.g. Family Alcohol and Drug Court, Engaging Moms Program, Dependency Drug Courts)	2 RCTs 8 Quasi-experimental 2 Pre-post* 1 Narrative review	High-risk parents and children	Justice system and social care	Inconclusive. RCTs show overall no reductions in decreased PAM. Quasi-experimental, qualitative and pre-post studies indicate small to moderate reductions in PAM and increased child reunification.	Studies mainly focusing on reunification or complete PAM abstinence. Few child outcomes reported. Small sample sizes and high attrition in UK studies. No UK RCTs identified.	FDAC represents the only evaluated court-based support system for PAM and affected children. FDAC’s effectiveness for increased child reunification and decrease PAM are inconclusive. Majority of international studies report on positive findings but with substantial design flaws. RCTs are required.	415-427
E2. Police	No studies identified.	N/A	Police, justice system and social care	N/A		Interventions in police and criminal settings remain under-researched despite high risk of encountering alcohol misusing parents. Observational studies using administrative data are needed to quantify the extent of contacts with PAM, and reactive strategies for further evaluation of RCTs.	
<b>F. Pharmacological Treatments</b>							
F1. Agonist treatment for addiction (e.g. benzodiazepines in inpatient settings)	5 RCTs 2 Systematic reviews 1 Quasi-experimental 1 Retrospective cohort	Substance misusing Pregnant women	Primary care and secondary care	Inconclusive. Limited evidence investigating the effects of pharmacological treatments and its benefits for pregnant women, foetus or affected children living with PAM.	We found no UK study investigating the effectiveness of pharmacological treatments to reduce PAM nor any studies exploring the effects on children following parent’s administration of medication.	Established pharmacological guidelines exist for treating alcohol misusing adults and young people. However, there is limited evidence on how pharmacological treatments affect family functioning, parenting capacity, children or the foetus in pregnant women. RCTs needed to address these issues.	59,121,173,219,223 ,224,282,343,346,3 53,354,357,379,409 ,428
<b>G. Upcoming Interventions</b>							
G1. Trial Databases	9 RCTs	Parents & Children	Social care, voluntary sectors and secondary care	Nine registered UK RCTs between 2014 and 2017 Four studies are family-based and directed towards children and parents.	Only two of the upcoming RCTs replicate an existing program, limiting translation of internationally promising intervention’s effects in English settings.	See Appendix 6.	See Appendix 6.
*Pre-post= uncontrolled pre-post study comparing baseline measures with outcomes post-intervention. Qualitative studies represent UK studies only. RCT= Randomised Controlled Trial, NR=Not reported, N/A = Not applicable.							
<b>Table 3: Summary of included interventions, conclusions and evidence gaps.</b>							

## Prevention strategies: health promotion, assessments and brief interventions

Health promotions, assessments/screenings and brief interventions are often combined prevention strategies used across settings in England. Here, we focus on interventions relevant to PAM and children.

### Multimedia Health promotion programmes

We found one review,<sup>96</sup> one RCT,<sup>100</sup> and five uncontrolled pre-post studies,<sup>94,95,97-99</sup> reporting on multimedia health promotion programmes relevant to PAM. All studies targeted pregnant women and investigated the impact of multimedia campaigns such as posters, information leaflets or educational DVDs. Five of the identified studies,<sup>94,95,97-99</sup> provided positive findings in increasing women's awareness of alcohol-related harms to the foetus. Yet, no study reported significant reductions in mothers' drinking, and none reported on child or father related-outcomes. The review also emphasised an overall lack of robust evidence for health promotion strategies targeting parents and children, highlighting an area in need of further research.

### Brief interventions (BI)

Although BIs vary in terms of content and duration, they commonly include three key steps: (1) screening/assessment, (2) a brief intervention, ranging from brief advice to counselling by a trained practitioner, and (3) depending on severity, a referral to specialist treatment.<sup>1</sup>

Despite their wide implementation for adults,<sup>6,8,429</sup> we found few BI studies for PAM and affected children. Of 8 reviews, including 10 RCTs, 3 quasi-experimental designs and 10 uncontrolled pre-post designs,<sup>83,106,110,112,114,126,131,133</sup> results were overall inconclusive. For example, the 5-Step method, an English brief manualised psychosocial intervention, has shown significant improvements in increasing coping skills of affected family members immediately post-intervention in uncontrolled pre-post designs.<sup>109,119,127,136</sup> However, when evaluated in a subsequent UK cluster RCT (+ linked follow-up study),<sup>87,88</sup> the 5-Step intervention showed no significant improvements at 12-months follow-up compared to a less intensive BI. Though, both groups reported significant health improvements at 12-months.

Two RCTs from Australia,<sup>101,103</sup> evaluated the 'pressure to change therapy' including 4-5 weeks face-to-face sessions of teaching family members how to influence problem drinkers to reduce their drinking. The first RCT revealed that a significant proportion of problem drinkers reduced their drinking at 3-months follow-up relative to waiting lists.<sup>101</sup> Yet, in the second RCT, the pressure to change therapy group showed no overall reductions in

### Box 2. Think-Family

"Think child, think parent, think family" refers to strategies that consider the effects on the whole family, regardless of which family member the strategy is directed to (see Figure 4). This may include providing a more integrated service to families with complex needs such as supervised childcare whilst the parent is being treated for alcohol misuse. But this may also include linkage of health care records between family members, allowing practitioners to more readily identify children when presented with an alcohol misusing parent or vice versa; examine parents records when presented with signs of child maltreatment or behavioural problems.<sup>430</sup>

drinking for the problem drinker, compared with three other intervention arms (regular counselling sessions, self-help only and TAU).<sup>103</sup>

The only study for children affected by PAM was a Swedish RCT.<sup>115</sup> The study compared a manualised, alcohol-focused BI, with a coping skills intervention and a combined intervention group for adult children who lived in a household with PAM. However, no differences were found in mental health or coping skills at 12-months follow-up across the three arms, although the adult children in the alcohol-specific and combined intervention arms showed significantly lower levels of their own alcohol consumption (e.g. reduced AUDIT scores).

In summary, there is weak evidence that BIs improve psychological coping for affected family members of PAM, with some evidence that BIs may increase treatment engagement of problem drinkers. Only one study targeted children, few addressed relative benefits, and only one RCT was conducted in England.

### Primary care assessments

One rapid review,<sup>83</sup> two RCTs from USA,<sup>141,142</sup> and two case-control studies,<sup>139,140</sup> focused on the efficacy of assessment strategies for identifying children with parental health problems including PAM. The RCTs reported consistent evidence of reduced child-related harms. Both RCTs investigated the impact of the Safe Environment for Every Kid (SEEK) screening approach,<sup>141,142</sup> a universal training programme for paediatric primary care clinicians to better identify child neglect and maltreatment, combined with on-site support by social workers. Results showed that children seen by SEEK clinicians were significantly less likely to show indicators of maltreatment and significantly more likely to receive early intervention at 12- and 18-months follow-up, compared to children who received primary care as usual.

Further, two case-control designs explored the predictive reliability of the 'Hague Protocol', another clinician training strategy for detecting child maltreatment by screening parents at emergency departments. The



studies found that the Hague protocol increased detection of children at risk of abuse, compared to controls.<sup>139,140</sup>

Finally, a rapid review,<sup>83</sup> including 53 studies of “Think-Family” approaches (Box 2) in primary care concluded that routine assessments of children and parents for child maltreatment, including PAM, is feasible and should be implemented as routine practice.

We found no UK comparative study for primary care assessments of PAM or affected children. Though, extensive clinical guidance is provided by the RCGP/NSPCC Safeguarding Children Toolkit for General Practices,<sup>430</sup> the NICE Guidance CG89,<sup>14</sup> and an NHS developed toolkit for PAM.<sup>431</sup> These include generic guidance on maltreatment assessments, safeguarding procedures and Think-Family approaches. However, specific advice for PAM in primary care could be strengthened, including how to assess lower risks of PAM or child related behaviours and guidance on when safeguarding should be implemented. This is a significant gap, as reports show that alcohol misusing adults are identified at GPs when it’s too late for early intervention and specialist treatment or/and safeguarding are required.<sup>1,2,432</sup>

In brief, routine child maltreatment assessments such as SEEK are considered to be feasible in American paediatric primary care settings. Preliminary evidence also shows that SEEK approaches reduce child maltreatment (including children affected by PAM) and are associated with earlier intervention compared with TAU. In England, RCTs and qualitative studies are needed to assess effective assessment strategies for identifying, monitoring and managing families affected by PAM. Recording parental status of adults and linkage of household members across services is a realistic first step towards this goal.

### School-based interventions

Five RCTs (incl. two pilot RCTs),<sup>112,144,146-148 144,146-148</sup> one quasi-experimental study,<sup>433</sup> and one pre-post study,<sup>112</sup> of school-based interventions showed inconsistent results. All of the interventions aimed at identifying and improving the psychosocial health of children affected by PAM, and targeted 4<sup>th</sup>-6<sup>th</sup>-grade students (aged 8-15 years) reporting of PAM to school staff. For instance, one pilot RCT,<sup>147</sup> and a larger multi-centre RCT,<sup>148</sup> investigated the Stress Management and Alcohol Awareness Program (SMAAP). SMAAP involved a trained adult who provided children with 6-12 sessions of manual-based one-to-one teaching of a resiliency skills-based curriculum. Both RCTs produced significant improvements in programme knowledge and emotion-focused coping immediately post-intervention, relative to children receiving a delayed intervention 6-months later.

The remaining three RCTs,<sup>112,144,146</sup> and the quasi-experimental study,<sup>433</sup> focused on school-based support

groups (SBSG), and art based therapy in classrooms (The Images Within), respectively. Of these, only the art-based intervention reported significant improvements in children’s coping immediately post-intervention, compared to delayed interventions.

Overall, findings on school-based interventions are mixed and in early development, with a small number of programmes from USA reporting positive outcomes (no UK study identified).<sup>434-436</sup> These findings align with the inconsistent effects reported in reviews of generic school-based interventions for substance misusing children,<sup>434-436</sup> including results from an English upcoming RCT (the SIPS JR-HIGH trial).<sup>437</sup> Further research into PAM prevention programmes in schools is warranted.

### Psychoeducational group (PG)

Six RCTs, five quasi-experimental and five uncontrolled pre-post studies reported on PGs for alcohol and drug-misusing mothers, affected partners and children.<sup>149-151,153,154,157-</sup>

<sup>161,163-166</sup> PG studies reported consistently positive findings in both child and parent outcomes relative to waiting lists only, but with no overall benefits compared to alternatives (e.g. BIs). For example, two RCTs from the USA investigated the effectiveness of Relational Psychotherapy Mother Groups (RPMG) in conjunction with methadone treatment, compared with methadone treatment alone or recovery-based training.<sup>159,160</sup> Mothers in the RPMG program reported significantly lower scores for child maltreatment and substance abuse (incl. PAM) immediately post-intervention, compared to control groups. By 6 months post-intervention, however, benefits conferred by RPMG had disappeared and in some instances reversed, compared to those receiving recovery training.

Another RCT from Sweden focused on PGs for partners of alcoholics and found significant improvements in coping behaviours and mental health outcomes at 12- and 24-months follow-up, compared to baseline measures.<sup>151,165</sup> However, the PG group did not report better-coping outcomes than those allocated to a single alcohol information session or compared to a 4-session individual coping skills programme.

Finally, one RCT,<sup>61</sup> and three quasi-experimental studies explored the impact of resiliency-based support groups for children, partners and substance misusing mothers, respectively,<sup>158,161</sup> (one conducted in England).<sup>163</sup> All studies reported significant but modest improvements in children’s, mothers and partners ability to cope at 12-months follow-up, compared to waiting lists. Using an interaction model, one study also found that mothers improvement was the strongest predictor of children’s health improvement.<sup>161</sup> Yet, few studies presented direct child reports and data were limited to parental observations.

In short, psychoeducational groups appear to improve children's and mothers coping and reduce alcohol consumption at follow-up, but with no overall benefit compared with alternative BIs. When including qualitative studies, three PG studies were conducted in England.<sup>153,154,166</sup>

### Online interventions and helplines

Despite recently implemented online interventions for PAM in the UK (e.g. Talk to Frank),<sup>438</sup> we found no evaluative study of online interventions or of helplines for children or parents affected by PAM (excl. qualitative studies). This is surprising, as the internet, smart-phones and social media act as a primary communication mean for children and adolescents.<sup>439</sup> Evaluative studies of online interventions and helplines are needed to compare effectiveness with other BIs and to give confidence that current interventions are appropriately designed to support children affected by PAM.

### Psychological Therapies

Psychological therapies have shown to be effective in reducing alcohol misuse in adults, including 12 weekly 60-minute sessions of cognitive behavioural therapy (CBT), motivational enhancement therapy or counselling therapy.<sup>4,5</sup> This section therefore focus specifically on psychological interventions for PAM and affected children.

#### Individual psychological therapies

We found two Cochrane reviews,<sup>173,179</sup> and four RCTs,<sup>170,171,175,176</sup> on psychosocial interventions aimed at reducing alcohol-related harms among pregnant women and babies. Of the two Cochrane reviews,<sup>173,179</sup> one found no RCTs on psychosocial interventions for women before or during pregnancy.<sup>173</sup> The other review found four RCTs (n=715 pregnant women; no UK study) of educational interventions (e.g. a 10-minute talk) or brief motivational interviews consisting of up to 1 hour.<sup>113</sup> Only one of the four RCTs reported significant reductions in drinking at follow-up compared to treatment as usual, with non-significant differences across other outcomes. All RCTs were classified as high or unclear risk of bias on most methodological domains.

We found one additional RCT,<sup>229</sup> involving 24 weekly individual sessions of CBT and contingency management for cocaine-dependent and alcohol misusing women who were either pregnant (n = 64) or had custody of a young child (n=81). The study compared the intervention with three other interventions; CBT alone; a community reinforcement approach; CBT with contingency management, and; vouchers only. Overall, mothers in all intervention groups showed significantly better outcomes than the vouchers only group at 12-months follow-up, however, no significant

differences were found between groups on outcomes related to abstinence and negative urine tests.

Overall, the effectiveness of psychosocial interventions in reducing PAM was inconclusive. RCTs were of low quality and no identified study reported on child outcomes or were conducted in the UK. High-quality RCTs are needed to determine the long-term effects of individual psychological interventions for children and families affected by PAM.

#### Behavioural Couples Therapy (BCT)

Two systematic reviews (1 meta-analysis),<sup>189,204</sup> 20 RCTs (1 pilot RCT),<sup>181-188,190-195,197-199,201,202,205-207</sup> and one quasi-experimental study,<sup>180</sup> reported on the effects of BCT for parenting couples affected by PAM and/or drug misuse. The studies demonstrated consistent positive results in reducing alcohol and drug-related harm among partners and parents. For example, the meta-analysis involved 12 RCTs and 754 participants and found that BCT was more effective than individual psychological treatments in reducing couple's alcohol and drug misuse (Cohen's  $d=0.54$ ) and significantly increased relationship satisfaction at 12-months follow-up ( $d=0.57$ ).<sup>204</sup> Results also suggested that BCT out-performed individual CBT sessions ( $d=0.42$ ).<sup>204</sup>

Yet, there was limited evidence of benefits for children affected by PAM, with only one RCT focusing on child-related outcomes. This trial,<sup>190</sup> explored the effectiveness of BCT in improving parent-reported psychosocial functioning in children of substance abusing fathers, compared with two other intervention groups (individual-based treatment and a couples-based psychoeducational attention control group). Children whose fathers that received the BCT reported significant improvements in psychosocial functioning at 12-months follow-up, relative to control groups. The child outcomes, however, were ascertained from parent reports only. We found no BCT study conducted in the UK.

In summary, trials on BCT provide consistent positive effects in reducing alcohol-related harm among problem drinkers and parenting couples, with one RCT showing improved outcomes among affected children. Replication of BCT trials in the UK is needed, with a strong focus on long-term child-reported outcomes.

### Family-based interventions

We found 124 studies evaluating different types of families-based interventions (Box 3). We review branded interventions separately.

#### Community Reinforcement and Family Training (CRAFT) and Minorities

Three RCTs,<sup>219,223-225,229</sup> and one quasi-experimental studies,<sup>208,212,230</sup> investigated the efficacy of CRAFT, and two

quasi-experimental studies explored family-based interventions focusing on minorities.<sup>202,206</sup> All studies reported consistent positive outcomes compared to controls or TAU. CRAFT is a cognitive-behavioural programme aimed at improving well-being among affected family members' and developing skills for engaging substance-abusing parents into treatment. Compared to Al-Anon facilitation treatments, all four CRAFT studies reported significant improvements in family functioning and in engaging initially unmotivated problem drinkers into treatment at 6-months and 12-months follow-up, respectively. However, beyond treatment engagement, outcomes on clinical, child or family-related outcomes were limited to short-term outcomes or not reported at all.

The remaining two quasi-experimental studies<sup>208,212</sup> focused on the efficacy of family enhanced interventions for minority populations, the "Safe Haven Program" and the "Shadow Project", involving parenting training, counselling and children's storytelling. Both interventions aimed to engage the whole family (children and parents) to treat the alcohol and drug misusing parent, with significant reductions in drug use and increased parenting efficacy at 11-months and 12-months follow-up, compared with no treatment. No study was conducted in the UK.

### Family-based interventions in the UK

We found 11 uncontrolled pre-post design,<sup>85,211,214-218,220,222,226,227,231,232,235</sup> with eight studies reporting on UK family-based intervention studies, showing overall moderate to large effects (when a statistical analysis was completed). For instance, two studies reported on outcomes from national family intervention projects implemented across 159 local authorities.<sup>85,234</sup> At six years follow-up, reports showed trends of overall reductions in all family domains of health problems including drug and alcohol misuse (40% reduction in 3,675 families). However, no statistical analysis compared pre-post measures or accounted for confounders, limiting results to descriptive statistics only.

Another uncontrolled pre-post study investigated the impact of the Moving Parents and Children Together Programme (M-PACT),<sup>222</sup> and two additional charity funded reports investigated Addaction's "Breaking the Cycle" (BtC) intervention.<sup>216,227</sup> The M-PACT evaluation included 82 children (children aged 8–17 years) and 75 family members including at least one substance misusing parent, with 8 weekly-sessions of psychoeducation on addiction, coping and communication. All three studies reported positive experiences by families at 3-months follow-up but relied solely on qualitative interviews, without quantitative pre-post measures or analysis. The BtC study also showed positive findings at follow-up but was limited to a qualitative evaluation.

### Box 3. Family-Based Interventions

Family-based interventions involve at least one family member in addition to the problematic parent. Interventions range from parenting skills interventions aimed at improving communication within the family, HVPs, and psychological family therapy led by a trained practitioner, to branded interventions such as the Strengthening Families Programme (SFP). SFP is a multicomponent, 14 session family-skills intervention where children and parents first receive individual support. The family later become integrated into joined sessions of playtime, communication training, family meetings and planning.

### Strengthening Families Programme (SFP)

Two RCTs,<sup>136,137</sup> three quasi-experimental studies,<sup>238,244,245</sup> and one English uncontrolled pre-post design study,<sup>236</sup> evaluated different SFPs (Box 3) and showed inconsistent findings in overall benefits for children (ages 8-14 years) and substance misusing parents. The three quasi-experimental studies,<sup>238,244,245</sup> reported significant improvements across all outcome measures in favour of the SFP (e.g. family functioning, parenting skills, children's social behaviour), compared to controls immediately post-intervention. However, similar benefits were not conferred by the RCTs. Here, the most comprehensive trial compared four treatment arms ( $n$  families= 715):<sup>238</sup> (1) parents receiving training in parenting skills, (2) children receiving training in social skills/coping, (3) the entire family receiving training in family skills, and (4) minimal treatment. Groups received 7-9 weekly sessions of corresponding interventions and all groups reported significantly improved outcomes across all domains including reductions in PAM immediately post-intervention. Yet, only one outcome significantly differed across treatment arms (child reported negative peer associations), and two other outcomes (family supervision and bonding, and child's positive adjustment) showed marginally significant group differences.

In England, SFP and three other interventions (Triple P, Incredible Years, and SFSC;  $n$ = 6143 parents) were evaluated as part of the Department of Education's Parenting Early Intervention Programme between 2008 and 2011.<sup>440</sup> All interventions showed significant improvements on primary outcomes compared to baseline measures at 12-months follow-up, but few differences were discerned between different programmes. No outcomes on PAM were reported, and only 53.5% of originally enrolled parents provided data at follow-up.

Overall, the effectiveness of family-based approaches including SFP remains uncertain. Most studies report consistent but modest improvements in affected family members' health and in engaging problem drinkers into treatment compared to waiting lists. However, positive

results are limited to quasi-experimental studies, qualitative and uncontrolled pre-post studies, precluding meaningful interpretation.

### Home visitation programmes (HVP)

HVPs represents the most evaluated PAM intervention relevant to pregnant women and younger children. We found 48 RCTs, 6 quasi-experimental studies and four reviews (see Table 3 for references). Despite this volume of research, reviews of HVPs report inconclusive findings and limited data on PAM. A Cochrane systematic review,<sup>304</sup> investigated the effects of HVPs during and pre-post pregnancy among drug and alcohol misusing mothers ( $n=803$ ; 7 RCTs) and found no overall significant differences on outcomes relevant to substance and alcohol misuse compared with controls. For example, one comprehensive American RCT,<sup>292,293,138,139</sup> investigated the effectiveness of nurse-led HVP ( $n=1139$ ) involving on average 7 visits during pregnancy. At 6 and 9-years follow-up, no significant differences were found on all primary outcomes relative to treatment as usual, including mother's substance and alcohol misuse, children's and mother's mental health, outcomes of subsequent pregnancies, and educational child outcomes. However, nurse-visited children reported higher scores of intellectual functioning and receptive language, and mothers reported reduced overall health problems.

In England, two large multicentre HVP RCTs have been conducted. One RCT, the Building Blocks Trial,<sup>441</sup> evaluated a modified version of the Family Nurse Partnership (FNP; incl. 64 home visits) for teenage mothers aged <20 years. The trial concluded that there was no evidence to support the continuation of the English FNP, as they found no significant primary outcomes at 2-years follow-up post-birth compared to TAU (*incl. no mean difference on alcohol and drug problem scores as per the CRAFT questionnaire: -0.03,  $p=0.58$* ). Other HVP studies that focus on young at-risk mothers show mixed but mainly positive outcomes up to 15 years follow-up, including the Family Nurse Partnership (FNP) in USA,<sup>289,291</sup> and the Early Start programme in New Zealand.<sup>299,308 265</sup>

More recently, a second English multicentre HVP RCT,<sup>248</sup> explored the impact of an intensive one-to-one parenting program ("Parents Under Pressure") focusing on substance and alcohol misusing mothers. The intervention consisted of 20 weeks of home visitations by a trained practitioner and specifically targeted problematic mothers with children under two years of age. Results revealed significantly reduced child abuse scores at 12-months follow-up compared to TAU (BIs delivered by family centres across England). However, the intervention showed no evidence for reduced maternal stress, psychopathology or problem scores among children relative to the TAU. The intervention was estimated to cost £34,095 per QALY gained and was

deemed non-cost-effective (NICE guidelines recommended: 20,000 to £30,000 per QALY gained).<sup>442</sup>

In summary, large multicentre trials from USA combined with two English trials provide inconsistent evidence for HVPs. Further English HVP studies are needed with a specific focus on PAM and child outcomes beyond pregnancy. Long-term parental and child outcomes from NHS funded programmes, such as the FNP, could be evaluated using linked administrative health data.<sup>443</sup> Such data could strengthen the evidence base of FNP and potentially associated reductions in alcohol-related harms among children, including educational outcomes.

### Parenting programmes (PPs)

In comparison to HVPs, PPs not only target pregnant women or young mothers and can be delivered in any setting up to adolescence. We found five RCTs,<sup>310,311,314-317</sup> two reviews,<sup>308,312</sup> two pre-post designs<sup>309,313</sup> and one quasi-experimental study of PPs.<sup>314</sup> The studies reported generally consistent effects on improved parenting outcomes but with no significant reductions in parental alcohol and substance misuse. For example, one pilot RCT,<sup>316</sup> investigated the Mothers and Toddlers program (MTP), a 12-session psychosocial parenting intervention aimed to improve maternal reflective functioning for substance misusing mothers. At 6-weeks follow-up, mothers in the MTP group reported significantly higher reflective functioning, sensitivity to child cues, and responses to child distress compared to treatment as usual. However, relative to TAU, the MTP group did not report improved child behaviours or reduced maternal substance misuse. These results align with the outcomes of the four other RCTs on PPs.<sup>304,309,311,437</sup> These trials showed improved parenting among mothers but found no evidence for reduced substance or alcohol misuse at follow-up, compared with TAU or couples therapy (BTC was used as a comparator in two trials).<sup>310,315,317,444</sup>

Taken together, RCTs suggest that PPs delivered across settings are effective in increasing parenting skills for substance and alcohol misusing parents, but not associated with decreased alcohol or substance misuse compared to TAU or alternative interventions. No study had been conducted in the UK and most studies relied on parent reports of child outcomes.

### Family Therapy

Five RCTs, one meta-analysis and three quasi-experimental studies evaluated the effectiveness of family therapy for reducing parental drug and alcohol misuse.<sup>318-327</sup> The meta-analysis,<sup>327</sup> included 15 RCTs ( $n=3,500$ ) consisting of children, misusing parents and couples. Parents who received family-couples therapy illustrated overall significantly lower drug and alcohol misuse at follow-up

(range: 4 weeks to 4 years follow-up) relative to TAU or other alternative interventions ( $d=0.48$ ,  $SE=0.07$ ). In six studies, family therapy also produced significantly better outcomes compared with groups who received individual counselling ( $d=0.55$ ,  $SE=0.09$ ).<sup>327</sup>

Of the five additional RCTs<sup>303,304,318,322</sup> and three quasi-experimental studies focusing on family therapy,<sup>299,300,302</sup> four trials and all quasi-experimental studies reported significant reductions in parent's alcohol and drugs misuse at follow-up relative to controls. For example, one quasi-experimental study investigated the effectiveness of the Multisystemic Therapy-Building Stronger Families programme (MST-BSF,  $n=25$ ),<sup>324</sup> aimed at reducing child maltreatment and parental drug and alcohol misuse, compared to comprehensive community treatment. Results revealed that mothers in MST-BSF group were three times less likely to record incidents of child maltreatment at 24-months follow-up, compared to controls. However, we found no study conducted in the UK relevant to family therapy and PAM.

These findings suggest that family therapy offers a viable and effective intervention for reducing PAM and related-harms among children. Yet, the evidence is based on solely international studies and effects may not translate to English contexts. Replication of English family therapy studies of PAM is recommended.

### Integrated treatments (IT)

Evidence from five systematic reviews,<sup>353,354</sup> including one meta-analysis (21 studies),<sup>346</sup> seven RCTs (including 1 pilot RCT)<sup>332,336,355-357,361</sup> and nine quasi-experimental studies,<sup>329,330,334,335,344,358,360,362,445</sup> found that ITs (e.g. alcohol treatment + psychoeducational or parenting skills groups) consistently produced small but significant reductions in alcohol and drug-related harms among parents and children, compared to waiting lists (range effect sizes: 0.18-1.41). Yet, beyond the comparison of waiting lists, the effects of ITs were inconsistent. For example, in a subgroup analysis, the meta-analysis concluded that there were no overall benefits of ITs compared to other active treatments including substance misuse treatment alone (range  $d = -0.09$ , 0.22; 10 studies). These results are consistent with findings of previous reviews, where ITs generally do not produce better results than stand-alone treatments.<sup>51,338,343</sup>

Still, IT studies varied substantially in content, duration and target population. For example, one systematic review of 18 studies (11 RCTs),<sup>347</sup> reported that ITs with more comprehensive services with included parenting interventions are more likely to report positive parent and child outcomes than less comprehensive ITs or treatment alone. Most notably, a US multicentre RCT ( $n=612$ , 5 practices) investigated the Starting Early Starting Smart

Integrated Services Model,<sup>349</sup> which included integrated parenting and psychosocial treatment pathways in paediatric clinics and in out/in-patient substance misuse settings. Results revealed that mothers and children in the IT groups showed significantly higher utilisation and completion rates of treatments at 18-months follow-up, compared to stand-alone inpatient treatments of drug and alcohol problems.

We found only one pre-post design of an IT intervention conducted in England, reporting on the London Teheran community project for families affected by substance misuse.<sup>328</sup> Whilst results were positive, the high attrition (69% lost to follow-up, 97/140 participants) and the lack of a concurrent comparator group precluded meaningful interpretation. Further, despite the availability of routine NDTMS data in England, observational data on alcohol and drug treatment outcomes for parents and children were lacking. We found no report utilising the NDTMS, including the most recent review by PHE,<sup>446</sup> that reported on outcomes relevant to parents and affected children. Additionally, no NDTMS data have been reported with adequate sensitivity to attribute outcomes to specific treatment types (e.g. ITs).

Overall, ITs are associated with consistent significant reductions in alcohol and drug-related harms among parents and children compared to waiting lists, but on average do not produce better outcomes than alcohol treatment alone. No reliable IT study has been conducted in England, and few international studies report on child outcomes. In England, an observational study based on NDTMS data and linkage across other services could facilitate comparisons of longer-term PAM outcomes, relative to alternative treatments. Yet, this can only be achieved if parental status and specific treatment types are routinely recorded in the NDTMS.

### Intensive Case Management (ICM)

ICM was the second most evaluated intervention for PAM. We found 15 RCTs, 15 quasi-experimental studies, 14 uncontrolled pre-post designs, 4 reviews, 2 meta-analyses and 1 retrospective cohort study reporting on ICM relevant to PAM and children.<sup>236,364-394</sup> Of these, 22 studies looked at intensive family preservation programs exclusively, and we therefore review them separately in the next section. Of the remaining six studies,<sup>236,364-371</sup> four reported significant outcomes at follow-up, including two RCTs. The first RCT reported higher engagement in alcohol and drug treatment for ICM mothers at 15-months,<sup>368</sup> and 36-months follow-up<sup>366</sup> compared to TAU and a less intensive case management approach. The other RCT,<sup>367</sup> reported significantly improved child care and increased resources (e.g. access to child care and social support) at 4-months follow-up, compared to routine case management. Yet, the



ICM group showed no significant improvements in engaging parents into alcohol and drug treatments at 4-month follow-up, compared to controls. The trial also suffered from high attrition (30%-50% lost to follow-up). Of the three remaining pre-post designs,<sup>364,365,370</sup> two studies reported significantly improved parenting and alcohol and drug treatment adherence at follow-up compared to baseline measures. The other two pre-post studies reported mixed or inconclusive results.

### **Intensive Family Preservation Programmes**

Few ICM interventions in social care have received as much public attention as intensive family preservation programmes (IFPPs). IFPPs are commonly ICM-based and target high-risk alcohol and drug affected families with the aim to prevent out-of-home child placements.

Three reviews,<sup>372,383,387</sup> based on 12 RCTs, 15 quasi-experimental and 11 uncontrolled pre-post studies of IFPPs provide moderate effects and consistent improvements in family functioning for families affected PAM, but with generally no evidence in reduced out-of-home placements. For example, two meta-analyses (MA) and one review,<sup>242,383,447</sup> report large effect sizes for different IFPP studies in USA (MA 1:  $d=0.486$ , 20 studies, 31,369 participants; MA 2: range  $d=-0.10$  to  $0.77$ , 5 studies, 31,319 participants).<sup>372,387</sup> However, in a subgroup analysis of RCTs only, the most comprehensive meta-analysis (13 RCTs) showed significantly reduced improvements in family functioning at 12-months compared to controls ( $n=3996$ ;  $d=-0.084$ , 95% CI:  $-0.115$  to  $-0.053$ ),<sup>372</sup> although still statistically significant. The meta-analyses also demonstrated that IFPPs are generally not effective in preventing out-of-home child placements ( $d=0.003$ ; 95% CI:  $-0.008$  to  $0.015$ ) and less effective for older children or in families with higher levels of abuse or neglect (based on RCTs and quasi-experimental studies).<sup>372,387</sup> All reviews highlighted that studies, including RCTs, were limited by methodological flaws including weak or absent comparators, low treatment fidelity, high attrition, and few outcomes relevant to children and fathers, overall making results of IFPPs inconclusive.<sup>387</sup>

In England, the Troubled families programme (TFP) was commissioned in 2012 with features similar to IFPP.<sup>448</sup> The TFP provide ICM support to at-risk families with complex social, economic and educational difficulties – including PAM, unemployment, physical and other substance misuse issues.<sup>448</sup> Based on observational comparisons, this evaluation reported positive outcomes on programme completion and employment rates at 12-months post-enrolment. However, the evaluation suffered from limited data quality, poor reporting of outcomes, high attrition and lacked an appropriate comparator group.<sup>449</sup>

### **Box 4. Intensive Case Management (ICM) & Family Drug and Alcohol Court (FDAC)**

ICM aims to increase access to support across services and is commonly implemented in social care settings for families with multiple psychosocial difficulties. This may include supporting affected families with housing issues, child abuse, neglect and domestic abuse.

FDAC is a court-based intervention for families affected by PAM, where local authorities have intervened due to risks of child harm. Parents are often required to show evidence for abstinence (e.g. 52 weeks) to keep the care of their child. Here, FDAC provides intensive multi-disciplinary care coordinated support to affected families, as a means to increase chances of child reunification. The intervention varies in length and content depending on the court and can last up to several months.

Following modifications, a new program was commissioned in 2015 with a full evaluation expected in 2020. So far, of the 185,420 families who enrolled into the programme in December 2016, 23.6% reported having achieved “significant and sustained progress” in March 2017.<sup>448</sup>

Overall, ICM programmes in the USA show consistently positive effects on improved family functioning and treatment engagement for PAM, but evaluations are limited by high risk of bias studies. Serious methodological flaws have also been associated with the evaluation of the TFP in England.

High-quality RCTs are needed to provide evidence of IFPP’s effectiveness in English settings. Investments into the TFP should also be made to avoid previous methodological limitations, including improved data quality, strategies to reduce attrition and facilitation of linkage of family outcomes across other services.

### **ICM in children’s social care for out of home placements**

Two rapid reviews, three narrative reviews and eight pre-post designs demonstrate an absence of robust comparative English studies focusing on ICM in social care.<sup>395-407</sup> The few comprehensive studies, reported mainly negative results in preventing out-of-home placements for children affected by PAM. For example, we found six UK-based uncontrolled pre-post studies,<sup>395,396,399-402,406,407</sup> involving children referred to social care following concerns about PAM and drug misuse. The largest study followed 290 children who lived with at least one alcohol or/and drug misusing parent up to two years following children’s initial referral to social services.<sup>402</sup> At two years follow-up, nearly half of the 133 children (46%) were still living with their drug-using parent, 75 children (26%) were living with the wider family and 78 children (27%) had been placed into formal out-of-home care. The study also found that care proceedings were initiated quicker when parental drug misuse was the main concern (nine months, on average),

whereas proceedings for concerns about alcohol took significantly longer time (62% of the proceedings started after nine months).

Another retrospective observational study in the UK,<sup>399</sup> followed 180 children in out-home placements across six local authorities. The study found that 50% of children returned to homes where PAM was still a significant issue and where children were associated with further maltreatment. Finally, one prospective observational study followed 105 children after concerns of maltreatment including PAM. At 18-months follow-up, roughly 40% of children were still living at home with their problematic parent(s) and over half (57%) experienced further maltreatment or neglect.<sup>395</sup> Similar findings were reported in another UK study.<sup>407</sup> All studies were, however, based on small samples, lacked a control group and with many outcomes ascertained from free-text extraction of social workers case notes.

The reviews,<sup>397,398,403-405,450</sup> highlighted that poorer ICM outcomes in social care commonly are associated with: (1) interventions that are provided too late, when children are older and already have experienced significant harm or when family circumstances have deteriorated, (2) higher severity of parental substance misuse and lower socioeconomic status, and (3) families who receive less additional support outside of social care.

In summary, we found no comparative studies relevant to ICM in social care and PAM. Observational studies conducted in England, however, suggest that ICM in social care are associated with high risks of poor child outcomes, in some instances resulting in reunification with parents who continue to misuse alcohol. Further, we found no evidence for effective strategies focusing on joint working in social care to improve parental functioning and children's coping. Given the elevated and increasing rate of child out-of-home placement in England (recently dubbed 'a care crisis'),<sup>451</sup> effective interventions in social care for children affected by PAM is urgently needed.

### Community outreach

The evidence base for community outreach interventions was limited to one RCT,<sup>408</sup> three quasi-experimental designs<sup>409,412,413</sup> and one pre-post design,<sup>414</sup> with overall mixed results and significant methodological flaws. The RCT evaluated the effectiveness of the American Families First Intervention compared to a BI.<sup>408</sup> The intervention included 14 social-cognitive behavioural sessions and targeted diverse alcohol misusing and HIV infected mothers who presented to various community outreach organisations. At 9-months follow-up, no treatment arm showed significant reductions in alcohol or drug misuse compared to baseline measures, and no child related-outcomes were reported.

The three remaining quasi-experimental designs targeted high-risk mothers affected by HIV, homelessness and severe drug misuse, and showed no significant improvements in substance misuse at follow-up (including PAM), compared to TAU.<sup>403,406,407</sup> For example, one study,<sup>412</sup> targeted children at-risk for out-of-home placements due to parental methamphetamine and comorbid substance misuse (including alcohol). The programme required families to participate in intensive community day treatments for 20 hours per week including case management, bonding and attachment services. Families were also given emergency housing and child care. At 18-months follow-up, children in the treatment group (n=196) reported significantly lower rates of maltreatment and out of home placements compared to children in the comparison group (n=366). However, no outcomes relevant to PAM were reported. We found no comparative community outreach study conducted in the UK.

Overall, the effects of community outreach interventions relevant to PAM and child outcomes are limited and warrant further research.

## Criminal and justice system

### Family Drug and Alcohol Court (FDAC)

We found one review,<sup>426</sup> two RCTs,<sup>419,421</sup> eight quasi-experimental studies (Box 4),<sup>415,416,418,423-427</sup> and two pre-post studies,<sup>417,422</sup> of court based interventions for PAM, with overall inconclusive results. Interventions included the Family Treatment Drug Court (FTDC) and Family Treatment Drug Court plus additional services (FTDC Plus) from the USA, and the UK-based Family Drug and Alcohol Court (FDAC).

The review involved seven quasi-experimental studies, including five studies comparing drug treatment courts to TAU, and two studies comparing the UK FDAC with alternative family-based interventions.<sup>426</sup> Of these, three studies reported significantly higher child reunification and treatment completion rates at 12-months follow-up compared to TAU. However, the review concluded that results were inconclusive due to studies methodological flaws such as non-equivalent comparison groups consisting of samples collected for other purposes. Also, some studies reported longer times to child reunification following treatment due to the lengthy duration of FDAC.

The two RCTs,<sup>413,415</sup> and one quasi-experimental study,<sup>420</sup> investigated the impact of the Engaging Moms Program (EMP; n range: 62-103), a 12 to a 15-month program of family support in addition to the standard FDAC content. Of these, one RCT,<sup>413</sup> and quasi-experimental study,<sup>420</sup> showed that a brief 8-week EMP intervention resulted in significantly higher treatment engagement of problematic parents at 3-months follow-up, compared to regular community support. However, there were no

significant differences in completion rates of treatments. The second RCT included more comprehensive outcomes,<sup>421</sup> and compared a 12-15 month's EMP intervention with a standard FDAC group. Results revealed marginally higher child reunification (52% vs. 39%) at 18 months follow-up in favour of EMP, but no significant differences were discerned on all other outcomes including substance misuse, family and individual psychosocial functioning.

In England, FDAC was introduced in 2008 and had over 12,700 applications brought to court between 2015 and 2016. Since then, one quasi-experimental study with two linked publications have explored FDAC's effectiveness in increasing child reunification.<sup>423-425</sup> The study followed 139 mothers and 201 children for four years and found that 35% of children (71/201) had been reunified with their mothers at the end of the follow-up, compared with 28% of children in the comparison group (42/149 children). At five years follow-up, a significantly higher proportion of FDAC mothers had also sustained from substance misuse, compared to a subgroup of mothers in regular care proceeding (58% vs. 24%). Despite encouraging results, results were limited to small sample sizes without randomisation or adjustment for confounders. Further work is needed before conclusions can be made relevant to the effectiveness of FDAC.

Overall, FDAC studies show inconclusive effects in improving child reunification and reducing PAM. Nevertheless, FDAC represents the only evaluated court-based support system for PAM and affected children. More robust and larger evaluations of family court interventions are recommended.

## Police

We found no intervention study for PAM that focused on police or criminal justice settings (except FDAC). Police are central to identifying parents and family members affected by PAM. For example, a recent report by HM Prison and Probation service showed that alcohol misuse is amongst the strongest "dynamic" predictor for violent reoffending among women.<sup>452</sup> A new "Women reoffending strategy" has also been published on this topic,<sup>453</sup> but with little relevance to affected children.

Epidemiological investigations of administrative police data are needed to provide insights into the proportions of PAM who present to police, along with its associated risk and protective factors for affected children at home.

## Pharmacological Interventions

The British Association for Psychopharmacology (BAP),<sup>454</sup> and NICE guidelines 115,<sup>4,5</sup> provide recommendations for managing alcohol misuse, including during pregnancy. BAP and NICE recommend administering benzodiazepines for severe cases of alcohol misuse, preferably managed in inpatient settings under specialist supervision.

With relevance to PAM, we found two Cochrane systematic reviews investigating the effectiveness of pharmacological treatments in pregnant women and young substance misusing mothers. The first review,<sup>428</sup> focused specifically on alcohol misuse in pregnant women and found no studies that met the inclusion criteria. The second review,<sup>455</sup> focused on opiate-dependent pregnant women, with little relevance to alcohol misuse.

Overall, there is evidence of effective pharmacological treatments for adults and young people. However, we found no UK study investigating the effectiveness of pharmacological treatments to reduce PAM nor any studies exploring the impact parental treatment may have on children. Research is required to determine the benefits and harms of pharmacological treatments on child outcomes, family functioning and parenting capacity.

## Upcoming interventions

Our search of trial databases revealed nine RCTs registered in the UK between 2014 and 2017 (7 in England; Appendix 6). Of these, four are family-based and directed towards children and parents (two studies focus on parents under pressure programs; one reviewed above); two are brief interventions focusing on affected children in social care settings; two are school-based intervention focusing on children, and; one is an integrated treatment intervention focusing on socially disadvantaged pregnant women. Positively, 7 out of 9 trials involve children affected by parental drug and alcohol misuse, and two focus on social care settings, areas previously overlooked. Seven trials are government funded (4 NIHR) and three are funded by charities.

## Caveat

A systematic review of interventions was beyond the scope of this review, including assessments of populations, interventions, overall quality, biases inherent within study designs and analyses. The findings should be interpreted with caution.

## CONCLUSIONS

This scoping review included published research, administrative data, cohort studies and expert feedback to seek answers on: (1) How do families who are affected by PAM present to services? and, (2) What strategies to reduce PAM and its consequences for children could be integrated into existing services?

The conclusions should be considered in conjunction with the substantial evidence base on alcohol misuse in adults,<sup>1-8</sup> and the caveats inherent within this review (see pp. 15 and pp. 30).

### Prevalence and service presentations

We included 22 data sources to synthesise the prevalence of PAM among parents and children across different services, including GPs, hospitals, mental health and community services (Table 1). In birth cohort studies, we found that between 14% and 26% of fathers drink at levels classified as increased risk drinkers, and between 5% and 18% of mothers drink at levels classified as increased risk drinkers. To our knowledge, this is the first longitudinal analysis of PAM in England using birth cohort studies. Further longitudinal research, using linked administrative data and cohort studies are required to investigate the timing and manifestations of PAM and its impact on children.

In comparison to cohort studies, PAM was substantially under-recorded in all service estimates across children's health and social care. Using linked mother-child pairs for hospital data in England, we found that between 2.1% and 9.8% of all mothers giving birth in 2011 had at least one alcohol or drug-related admission up to 5 years before and 5 years after the child's birth. Using three large GP databases, we found that at least 1 in 17 children lives with a mother with recorded alcohol misuse up to 5 years before and 5 years after birth. Of the identified datasets, no child mental health service provided estimates on PAM, nor any social care service beyond routinely recorded casefiles, and only one service (SLAM substance misuse service) provided estimates of fathers.

Several potential reasons for under-recording should be recognised in our findings. These include a lack of linked data between family members in health and social care records, failure to record parental status for presenting adults, under-recording of alcohol misuse throughout healthcare,<sup>1,2,432</sup> and failure to consider and ask about PAM when children present with emotional and behavioural problems.<sup>454</sup> Additionally, the fear of disclosing PAM and of having dependent children due to consequences such as losing one's child or stigma is another barrier contributing to underreporting and missed intervention

opportunities.<sup>104,455,456</sup> This topic was particularly endorsed by our steering group.

All services that encounter alcohol or drug misuse should consider the effects on the family and routinely ask about parental responsibilities and children at home. Parental or relevant carer status should be routinely recorded in adults' health and social care records. Services should also be able to share this information and involve other health care agencies for the child and the parent. They should implement safeguarding procedures if there are immediate concerns about the child's safety. However, further evaluation is needed to explore the benefits and risks of recording and responding to PAM (incl. safeguarding procedures); and how to appropriately use linked family member's records directly in practice (*primary/secondary care, social care and school records*) and research.

### Interventions

We conducted a scoping review to define the breadth of evaluated interventions for PAM and affected children. We found 360 studies, categorised into 20 intervention types (Table 3). These show overall weak to moderate improvements in reducing PAM and child-related harms. However, a large proportion of evidence is derived from uncontrolled studies as opposed to effectiveness studies, with large variations in estimates and intervention content. Few robust or well-funded interventions have been conducted in the UK (we found 2 RCTs with relevance to PAM) and few interventions specifically focus on children.

Nevertheless, some interventions are consistently linked to reductions in PAM and child-related harms. These include behavioural couples' therapy, family/systemic therapy, child maltreatment assessments based on Think-Family approaches in primary care, parenting skills interventions, psychoeducational groups and family-based interventions. Interventions with inconclusive evidence were home visitation programmes targeting pregnant women or young mothers, intensive case management including family preservation programmes, family drug and alcohol courts and integrated treatment services.

Finally, we found little or no current evidence for PAM interventions and affected children relevant to social care settings (including interventions aimed at reducing out-of-home child placements), police and other criminal justice systems (excluding drug courts), online or telephone-based interventions, community outreach interventions, pharmacological interventions for pregnant women and its effects on children following parental treatment. Nonetheless, trial databases reveal that nine upcoming RCTs have been registered in the UK in the last three years,

including some interventions addressing previously overlooked areas (e.g. social care).

Taken together, most comprehensive interventions need replication in UK settings, with focus on local service contexts and children in their own right. Here, the RCGP toolkit, including GP assessments of suspected child maltreatment, provides a useful framework for developing primary care interventions for PAM. Research into effective implementation strategies is also required, as reports show that evidence-based interventions for adults are often not implemented, resulting in negative implications for affected children. Potential areas for further investigation include joined up health care responses across secondary and primary care services.

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## **APPENDICES**

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**Appendix 1. Abbreviations**

**Appendix 2. Review Protocol & Search Strategy (PROSPERO format - Unregistered)**

**Appendix 3. Characteristics of included data sources and indicators for estimating prevalence of PAM across datasets**

**Appendix 4. Characteristics of included data sources and indicators for estimating prevalence of PAM across birth cohort studies**

**Appendix 5. Characteristics of included intervention studies**

**Appendix 6. Characteristics of upcoming UK RCTs for PAM identified in trial databases**

**Appendix 7. Alcohol classifications and cut-off scores used to calculate severity categories for different measures**

**Appendix 8. Public Health England's Narrow Measure of ICD-10 Codes for analysis in HES-APC**

**Appendix 9. Drug and alcohol-related ICD-10 Codes for analysis in HES-APC (Excluding PHE narrow measure; Appendix 7)**

**Appendix 10. Alcohol-related Read Codes for analysis in CPRD**

## Appendix 1. Abbreviations

Abbreviation	Description
AUD	Alcohol Use Disorder
AUDIT	Alcohol Use Disorders Identification Test
BI	Brief Interventions
BiB	Born in Bradford Cohort Study
CBT	Cognitive Behavioural Therapy
CI	Confidence Interval
CIN	Children in Need
CPRD	Clinical Practice Research Datalink
CRPU	Children's Policy Research Unit
CRIS	Clinical Research Information System
CYP IAPT	Children and Young People's Improving Access to Psychological Therapies
DHSC	Department of Health and Social Care
FASD	Foetal Alcohol Spectrum Disorder
FNP	Family Nurse PartnerShip
GP	General Practitioner
GRADE	Grading of Recommendations Assessment, Development and Evaluation
HES-APC	Hospital Episode Statistics Admitted Patient Care
ICD-10	International Statistical Classification of Diseases and Related Health Problems 10th Revision
IRISi	Identification and Referral to Improve Safety
MCS	Millennium Cohort Study
MHSDS	Mental Health Services Data Set
NACOA	National Association for Children of Alcoholics
NICE	National Institute for Health and Care Excellence
NPD	National Pupil Database
NSPCC	National Society for the Prevention of Cruelty to Children
PAM	Parental Alcohol Misuse
PHE	Public Health England
PROSPERO	International prospective register of systematic reviews
RGCP	Royal College of General Practitioners Surveillance Network
SLAM	South London and Maudsley NHS Foundation Trust services
UK	United Kingdom
WECC	The Wales Electronic Cohort for Children



## Appendix 2. Review Protocol & Search Strategy (PROSPERO format unregistered)

### Review title

Interventions for reducing parental alcohol misuse and related-harms among children in the UK: A Scoping Review.

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### Conflicts of interest.

None.

### Objective

To systematically review interventions aimed at reducing alcohol consumption in parents and the alcohol-related harms among children.

### Inclusion

**Study types:** Unpublished and published cross-sectional, cohort, quasi-experimental or randomised controlled trials.

**Condition:** Parental alcohol misuse classified in line with ICD-8/10 or DSM-3/5 criteria or according to relevant UK alcohol guidelines or instrument cut-off score (e.g., AUDIT, CAGE).

**Population:** Parents who misuse alcohol and corresponding children regardless of natural status of the parent. We will refer to a parent as any individual who reports on having a child including foster or adoptive parents and regardless of the living situation. A child will be defined as any individual under the age of 19 years.

**Intervention:** Any well-defined strategy aimed at reducing alcohol misuse among parents and the related harms among children, delivered individually or by group through any means (e.g. face-to-face, internet, skype or telephone etc.), regardless of setting, duration and number of treatment sessions. Interventions may include but not limited to: behavioural therapy, residential rehabilitation, motivational interviewing, cognitive behavioural therapy, psychodynamic therapy, parental skill training, case management, brief online alcohol interventions, home visits, supported housing, family therapy.

**Comparator:** No comparator needed.

**Outcome:** Change in: alcohol intake, drinking status, health-related quality of life or functional status, laboratory markers related to alcohol use, utilisation of health care resources, or drug related-harms as described in Nutt 2010,<sup>84</sup> following treatment. Definitions of alcohol misuse per severity type and alcohol-related harms among children are depicted in Box 1 and Appendix 7.

#### **Exclusion**

Studies that neglect to include parents or affected children studies with mixed populations of parents and non-parents, primary preventions where participants are not identified as alcohol misusers, case studies, qualitative studies and study protocols.

#### **Primary outcome(s).**

See attachments.

#### **Search strategy**

##### **1. Sources:**

We will search the following sources from 1980 to inception:

**Electronic databases:** MEDLINE, EMBASE, PsychINFO (Ovid); PubMed, CINAHL; British Education Index; Child Development & Adolescent Studies; AMED; Global Health Archives; Web of Science, SCOPUS, ERIC, Proquest Central, Science Citation Index, Cochrane library (Wiley), DARE.

**Trial registers:** EU-CTR, ISRCTN, ClinicalTrials.gov

**Grey literature:** Google Scholar, Open Grey, ProQuest Dissertations & Theses Global and web links from child and adolescent organisational websites including WHO Global Health Library.

#### **References of screened literature reviews and/or annotated bibliographies.**

**Journals:** Pediatrics, Journal of Child Psychology and Psychiatry and Allied Disciplines, Child Development, Child Development Perspectives, Journal of Adolescent Health, JAMA Paediatrics,

**Expert recommendations:** Prominent researchers, policy experts and clinicians within the field using a selected steering group.

##### **2. Search terms:**

The following search terms will be applied across sources using the PICO structure and combined using Boolean operators and MESH terms:

*(Child\* OR adolescent\* OR youth\* OR young\* OR teen\* OR parent OR parents OR parenting OR parental OR famil\*).[ti,ab]*

AND ("Intervention Studies" (MeSH exploded) OR interven\* OR treatment\* OR therapy\* OR "care service\*" OR prevent\* OR educat\* OR promot\* OR programme\* OR counsel\* OR campaign\* OR policy OR policies OR legislation OR evaluat\* OR effectiv\* OR compar\*). [ti,ab]

*AND (alcohol\* OR "alcohol\$related\*" OR "alcohol expos\*" OR drink\* OR alcohol\* OR liquor\* OR beer\* OR wine\* OR spirits OR drunk\* OR binge OR ethanol OR "alcoholic beverage"\* OR "alcohol\$ drink\$" OR Substance-related disorders (MeSH exploded) OR drug\* OR "alcohol\* related birth defect\*" OR "fetal\* alcohol\*" OR fae OR fas OR fasd OR "fetal alcohol syndrome\*" OR "fetal alcohol spectrum disorder\*" OR "foetal\* alcohol\* effect" OR "foetal\* alcohol syndrome\*" [ab, hw, ti, tn, ot, dm, mf, dv, kw, fx, bt, id, cc, nm, kf, px, rx, an, ui, sy, tc, tm]*

### **3. Limitations:**

All searches will be limited to studies published in English or Swedish, and we will follow the PRISMA and MOOSE guidelines for systematic reviews and meta-analysis.

#### **Data extraction (selection and coding).**

##### ***Screening and selection of studies:***

Search results will be imported into Endnote 7 for storing and removal of duplicates and exported to Covidence systematic review online software ([www.covidence.org](http://www.covidence.org)) for screening. Using a piloted worksheet detailing inclusion criteria and guidance notes, titles and abstracts will be screened by one reviewer. Uncertainty over the inclusion of a paper will be resolved through discussion with a second reviewer.

Eligible literature and corresponding reference lists will subsequently be retrieved and reviewed full text by one reviewer to determine their suitability for inclusion. All retrieved articles will be saved in Covidence for further data extraction, while excluded studies will be coded to indicate the reason for their exclusion.

##### ***Data extraction***

Using Covidence native extraction form, study titles, authors, study type, country of origin, year of publication, design, type of disorder and classifications, key population and brief intervention content will be extracted.

To maximise independence of intervention studies, only the most comprehensive study will be included when studies are based on the same sample. Results from intention-to-treat analysis (ITT) or modified ITT will be preferred over other results.

##### ***Risk of bias (quality) assessment.***

As in most scoping reviews, we will not conduct a formal quality assessment of each individual study. However, we will emphasise findings from high-quality RCTs and systematic reviews over individuals' studies and seek guidance using the GRADE (see below). Any instances of publication bias will be discussed further in the review along with their implications.

#### **Strategy for data synthesis**

We will provide a narrative synthesis of all included studies including results from overall primary outcomes across each intervention category and its associated quality of evidence. The main review findings will be presented in a transparent and simple tabular format using a 'Summary of findings' table. This will provide key information concerning the quality of evidence, the magnitude of effect of the interventions examined and a summary of the available data for different outcomes.

#### **GRADE**

Data from RCTs starts at the highest level of evidence, studies are subsequently lowered by levels for the following reasons:

- Serious (reduced by one level) or very serious (reduced by two levels) study limitation for risk of bias.
- Serious (reduced by one level) or very serious (reduced by two levels) inconsistency between study results.
- Some (reduced by one level) or major (reduced by two levels) uncertainty about directness (the correspondence between the population, the intervention, or the outcomes measured in the studies actually found, and those under consideration in our review).
- Serious (reduced by one level) or very serious (reduced by two levels) imprecision of the pooled estimate.
- Strong suspicion of publication bias (reduced by one level)

#### **Type and method of review.**

Scoping review

**Health area of review**

Adolescent and Child health

**Country**

England

**Other registration details.**

None.

**Reference and/or URL for published protocol.**

N/A

**Do you intend to publish the review on completion?**

Yes.

**Dissemination plans.**

Results will be reported to relevant stakeholder groups and in a peer-reviewed journal article. Lay term summaries of the review findings will be published on blogs.

**Keywords.****Details of any existing review of the same topic by the same authors.**

N/A

**Current review status**

Ongoing

**Any additional information.**

None.

**Details of final report/publication(s)**

N/A

### Appendix 3. Characteristics of included data sources and indicators for estimating prevalence of PAM across services

Reference	Data Source	Applies to	Period	No. Cases	Sample Size	Indicator Definition
<b>General Practices</b>						
CPRU, 2018	CPRD	Mothers	1990-2015	18179	307202	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	1996 (+/- 5 years)	692	10483	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	1997 (+/- 5 years)	668	12193	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	1998 (+/- 5 years)	667	13529	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	1999 (+/- 5 years)	614	14743	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2000 (+/- 5 years)	586	16084	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2001 (+/- 5 years)	622	17708	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2002 (+/- 5 years)	612	18862	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2003 (+/- 5 years)	671	21315	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2004 (+/- 5 years)	776	23337	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2005 (+/- 5 years)	831	24832	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2006 (+/- 5 years)	1017	26662	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2007 (+/- 5 years)	1122	27483	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2008 (+/- 5 years)	1243	29275	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2009 (+/- 5 years)	1347	29811	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2010 (+/- 5 years)	1398	29692	≥1 Read code indicative of alcohol misuse
CPRU, 2018	CPRD	Mothers	2011 (+/- 5 years)	1249	29043	≥1 Read code indicative of alcohol misuse
Davies-Kershaw, 2018	RGCP	Pregnant women	2005-2017	25823	438552	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2005 (+ 6 months/- 3 years)	1401	22178	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2006 (+ 6 months/- 3 years)	1638	23011	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2007 (+ 6 months/- 3 years)	1656	22022	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2008 (+ 6 months/- 3 years)	1769	21065	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2009 (+ 6 months/- 3 years)	1818	20804	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2010 (+ 6 months/- 3 years)	1897	20512	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2011 (+ 6 months/- 3 years)	1960	20461	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2012 (+ 6 months/- 3 years)	2020	20668	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2013 (+ 6 months/- 3 years)	2263	20199	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2014 (+ 6 months /- 3 years)	2352	20270	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2013 (+ 6 months/- 3 years)	2263	20199	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2015 (+ 6 months /- 3 years)	2458	19976	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2016 (+ 6 months /- 3 years)	2287	19298	≥1 Read code indicative of Hazardous drinking or Alcoholism
Davies-Kershaw, 2018	RGCP	Pregnant women	2017 (+ 6 months /- 3 years)	2304	18272	≥1 Read code indicative of Hazardous drinking or Alcoholism
Wijlaars, 2014 / CPRU, 2018	THIN	Family-dyads	1994-2009	811	84908	≥1 Read code indicative of Alcohol abuse
Wijlaars, 2014 / CPRU, 2018	THIN	Family-dyads	1994-2010	806	84908	≥1 Read code indicative of Illicit drug use

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Reference	Data Source	Applies to	Period	No. Cases	Sample Size	Indicator Definition
<b>General Practices</b>						
<b>Other Community Services</b>						
FNP, 2018	FNP	Mothers	2007-2017	918	84639	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2007	76	2378	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2008	37	1023	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2009	139	4887	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2010	144	7677	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2011	66	4540	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2012	139	10110	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2013	88	11446	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2014	82	11043	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2015	90	15120	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2016	42	10754	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
FNP, 2018	FNP	Mothers	2017	15	5661	≥1 units/week during pregnancy and ≥15 units/week after birth (Unit x drinking frequency calculation)
IRISi, 2018	IRISi	Mothers	2014-2018	161	2662	Reported of problems with alcohol
IRISi, 2018	IRISi	Mothers	2014-2018	116	2658	Reported of problems with drugs
<b>Helplines</b>						
Barron, 2017	Nacoa	Children	2001-2016	88249	226280	Caller is child of an alcoholic
Barron, 2017	Nacoa	Children	2001-2005	13549	41059	Caller is child of an alcoholic
Barron, 2017	Nacoa	Children	2006-2010	47251	121155	Caller is child of an alcoholic
Barron, 2017	Nacoa	Children	2011-2015	42374	83086	Caller is child of an alcoholic
Barron, 2017	Nacoa	Children	2014	9612	16572	Caller is child of an alcoholic
Barron, 2017	Nacoa	Children	2015	19726	32338	Caller is child of an alcoholic
NACOA, 2018	Nacoa	Children	2017-2018	4860	5928	Caller is child of an alcoholic
NSPCC, 2017	NSPCC Helpline	Any Adult	2013-2017	35,207	178216	Caller reported concerns of parental substance misuse
NSPCC, 2017	NSPCC Helpline	Any Adult	2013-2015	17126	123,351	Caller reported concerns of parental substance misuse

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Reference	Data Source	Applies to	Period	No. Cases	Sample Size	Indicator Definition
NSPCC, 2018	NSPCC Helpline	Any Adult	2015-2016	7874	54,865	Caller reported concerns of parental substance misuse
NSPCC, 2018	NSPCC Helpline	Any Adult	2016-2017	10207	66,218	Caller reported concerns of parental substance misuse
NSPCC, 2009	ChildLine	Children	2003-2004	4,445	141818	Child reporting concerns about PAM
NSPCC, 2009	ChildLine	Children	2008-2009	4,028	156,729	Child reporting concerns about PAM
NSPCC, 2015	ChildLine	Children	2012-2013	3,930	289847	Child reporting concerns about PAM
NSPCC, 2018	ChildLine	Children	2016-2017	1397	295202	Child reporting concerns of parental substance misuse
<b>Hospitals</b>						
CPRU, 2018	HES-APC	Mothers	2011 (+/- 5 years)	13170	632622	Alcohol-related hospital admissions (ICD-10)
CPRU, 2018	HES-APC	Mothers	2006-2011 (5 years pre-birth)	6115	632622	Alcohol-related hospital admissions (ICD-10)
CPRU, 2018	HES-APC	Mothers	2011-2016 (5 years post-birth)	7873	632622	Alcohol-related hospital admissions (ICD-10)
CPRU, 2018	HES-APC	Mothers	2011 (+/- 5 years)	61703	632622	Drug-related hospital admissions (ICD-10)
CPRU, 2018	HES-APC	Mothers	2006-2011 (5 years pre-birth)	26191	632622	Drug-related hospital admissions (ICD-10)
CPRU, 2018	HES-APC	Mothers	2011-2016 (5 years post-birth)	42196	632622	Drug-related hospital admissions (ICD-10)
Paranjothy, 2018	WECC	Children	1990-2011	9499	253717	Living with household member with an ICD-10 alcohol-related admission
Gonzalez-Izquierdo, 2015/CPRU, 2018	UCLH NHS	Mother & Father	2011-2012	20	339	≥1 Drug problem noted by clinician in A&E and safeguarding notifications made to social services (e.g. "Father brought to ED after night out with child's mother in which he was involved in a fight and took cocaine")
Gonzalez-Izquierdo, 2015/CPRU, 2018	UCLH NHS	Mother & Father	2011-2012	9	339	≥1 Alcohol problem noted by clinician in A&E and safeguarding notification made to social services (e.g. "Presented to ED with alcohol related collapse")
<b>Mental Health Services</b>						
Canfield, 2018	CRIS	Mother & Father	2012-2016	2293	8105	Attending SLAM treatment for alcohol and/or drug misuse
Canfield, 2018	CRIS	Mothers	2012-2016	873	8105	Attending SLAM treatment for alcohol and/or drug misuse
Canfield, 2018	CRIS	Fathers	2012-2016	1420	8105	Attending SLAM treatment for alcohol and/or drug misuse
NHS Digital, 2017	MHSDS/MSDS	Pregnant women	2016-2017	96	32002	Alcohol & drug service use codes (PMH11) - in contact with secondary mental health services and referred to a specialist alcohol service
NHS Digital, 2018	MHSDS/MSDS	Pregnant women	2017-2018	126	53777	Alcohol & drug service use codes (PMH09, PMH11) - in contact with secondary mental health services and referred to a specialist alcohol service.

Continues on next page.



Reference	Data Source	Applies to	Period	No. Cases	Sample Size	Indicator Definition
<b>Mental Health Services</b>						
CORC, 2018	CYP IAPT	Children	2011-2015	9047	36810	Complexity Factor 12 'Parental health issues', assessed by clinician
CORC, 2018	CYP IAPT	Children	2011-2015	5552	35007	Experience of Abuse or Neglect regardless of parental issue, assessed by clinician
CORC, 2018	CYP IAPT	Children	2011-2015	2995	35960	Deemed 'child in need' on social service input regardless of parental issue, assessed by clinician
<b>Children's Social Care</b>						
DE, 2017	CIN	Children	2017	70097	389430	Problems with alcohol misuse identified in adults in the same household or in the child
DE, 2017	CIN	Children	2017	76718	389430	Problems with drug misuse identified in adults in the same household or in the child
Jay, 2018	CLA/NPD	Children	2012-2013	3264	529795	Children in school entering out of home care between years 1 and 6 due to parental health issues, child abuse/neglect and family acute stress/dysfunction
Broadhurst, 2017	Cafcass	Mothers	2007-2016	198	354	Mother-related substance misuse issues mentioned by professionals at mothers' index repeat proceeding
Brandon, 2006	SCR	Family	2003-2005	27	47	Parental alcohol and drug misuse highlighted as concern
Woodman, 2018	SCR	Family	2005-2007	13	40	Parental alcohol and drug misuse highlighted as concern
Brandon, 2013	SCR	Family	2009-2011	58	139	Parental alcohol and drug misuse highlighted as concern
Sidebotham, 2016	SCR	Family	2011-2014	82	175	Parental alcohol and drug misuse highlighted as concern

CPRD= Clinical Practice Research Datalink, FNP= Family Nurse Partnership, THIN= The Health Improvement Network, IRISi= Identification and Referral to Improve Safety, NSPCC= National Society for the Prevention of Cruelty to Children & NSPCC ChildLine, Nacoa= National Association for Children of Alcoholics, HES-APC=Hospital Episode Statistics Admitted Patient Care, WECC= Wales Electronic Cohort for Children, UCLH= University College London Hospital Trust Audit, MHSDS/MSDS= Mental Health Services Data Set linked to the Maternity Services Dataset, CRIS= Clinical Research Information System, CYP IAPT=Children and Young People's Improving Access to Psychological Therapies, CIN= Children in Need, CIN/NPD= Children Looked After linked to the National Pupil Database, SCR= Serious Case Reviews, Cafcass=The Children and Family Court Advisory and Support Service.

#### Appendix 4. Characteristics of included data sources and indicators for estimating prevalence of PAM across the child's life course

Reference	Data Source	Parent	No. Cases*	Sample Size*	Alcohol Indicator	Age of Child
Passaro, 1996	ALSPAC	Mother	1023	10539	>7 glasses of wine per week	Retrospectively asked at 18-23 weeks gestation
Passaro, 1996	ALSPAC	Mother	164	10539	>7 glasses of wine per week	18-23 weeks gestation
Mahedy, 2017	ALSPAC	Mother	798	9600	≥21 units/week	4 years
Mahedy, 2017	ALSPAC	Mother	967	6356	≥21 units/week	12 years
Cooper, 2012	BiB	Mother	762	10845	≥5 units/week	Retrospectively asked at first trimester: "During the 3 months before pregnancy"
Cooper, 2012	BiB	Mother	236	10823	≥5 units/week	First 3 months of pregnancy (first trimester)
Cooper, 2012	BiB	Mother	36	10845	≥5 units/week	26–28 weeks' gestation
CPRU, 2018	MCS	Mother	60	1582	≥14 units/week	Retrospectively asked at 9 months: "Before Pregnancy.."
CPRU, 2018	MCS	Mother	10	1582	≥21 units/week	Retrospectively asked at 9 months: "Before Pregnancy.."
CPRU, 2018	MCS	Mother	381	6657	≥14 units/week	9-12 months
CPRU, 2018	MCS	Mother	20	6657	≥21 units/week	9-12 months
CPRU, 2018	MCS	Mother	445	11,206	CAGE score=2	3 years
CPRU, 2018	MCS	Mother	188	11,206	CAGE score >2	3 years
CPRU, 2018	MCS	Mother	1313	12,304	AUDIT-PC Score = 5-12	11 years
CPRU, 2018	MCS	Mother	29	12,304	AUDIT-PC Score >12	11 years
CPRU, 2018	MCS	Mother	1253	10,712	AUDIT-PC Score = 5-12	14 years
CPRU, 2018	MCS	Mother	36	10,712	AUDIT-PC Score >12	14 years
Passaro, 1997	ALSPAC	Father/Partner	502	8361	Drank daily, 3–9 drinks	Retrospectively asked at 18-23 weeks gestation
Passaro, 1997	ALSPAC	Father/Partner	32	8361	Drank daily, 10 drinks	Retrospectively asked at 18-23 weeks gestation
Passaro, 1997	ALSPAC	Father/Partner	1287	8245	>7 glasses of wine per week	18-23 weeks' gestation
Mahedy, 2017	ALSPAC	Father/Partner	1685	8139	More 10 days + every day: drinking 4 glasses of wine in the last month	4 years
Mahedy, 2017	ALSPAC	Father/Partner	1422	5953	More 10 days + every day: drinking 4 glasses of wine in the last month	12 years
CPRU, 2018	MCS	Father/Partner	1038	8073	≥21 units/week	9-12 months
CPRU, 2018	MCS	Father/Partner	98	8073	≥50 units/week	9-12 months
CPRU, 2018	MCS	Father/Partner	363	8853	CAGE score = 3	3 years
CPRU, 2018	MCS	Father/Partner	69	8853	CAGE score > 3	3 years
CPRU, 2018	MCS	Father/Partner	1910	8,252	AUDIT-PC Score = 5-12	11 years
CPRU, 2018	MCS	Father/Partner	61	8,252	AUDIT-PC Score >12	11 years
CPRU, 2018	MCS	Father/Partner	1701	6699	AUDIT-PC Score = 5-12	14 years
CPRU, 2018	MCS	Father/Partner	49	6699	AUDIT-PC Score >12	14 years

\*Figures represent unweighted estimates with complete cases on alcohol. MCS= Millennium Cohort Study, ALSPAC= Avon Longitudinal Study of Parents and Children, BiB= Born in Bradford, AUDIT-PC= Alcohol use disorders identification test for primary care, CAGE= The CAGE questionnaire, CPRU= New analysis conducted by Children Policy Research Unit at University College London Institute of Child Health.

## Appendix 5. Characteristics of included intervention studies

First Author, Year	Main Intervention Category	Design	Country	Directed to	Intervention name (where applicable)
Crawford-Williams, 2015	Multimedia Health Promotion	Review	Australia	Parent	Mixed prevention Approaches
Lowe, 2010	Multimedia Health Promotion	RCT	USA	Parent	Multimedia campaign (incl. TV commercials, printed pamphlets)
Casiro, 2014	Multimedia Health Promotion	Pre-post (Uncontrolled)	Canada	Parent	Public awareness campaign: television public service
Chersich, 2012	Multimedia Health Promotion	Pre-post (Uncontrolled)	South Africa	Parent	Universal prevention intervention: pamphlet and posters, newspaper
Glik, 2008	Multimedia Health Promotion	Pre-post (Uncontrolled)	USA	Parent	Narrow casting social marketing campaign: posters and card
Hanson, 2012	Multimedia Health Promotion	Pre-post (Uncontrolled)	USA	Parent	Public awareness campaign: television public service
Kaskutas, 1994	Multimedia Health Promotion	Pre-post (Uncontrolled)	USA	Parent	Health information campaign: warnings on alcoholic beverage containers
Bröning, 2012	Brief Intervention	Systematic review	Germany	Children	Selective Prevention Programmes
Giusto, 2018	Brief Intervention	Systematic review	USA	Parent and Family Member	Brief Interventions, Couples Therapy, Parent Skills Training,
Rane, 2017	Brief Intervention	Systematic review	India	Family member	The 5-Step Method + family psycho-education
Templeton, 2010	Brief Intervention	Systematic review	England	Family member	Brief Intervention, Couples Therapy
Cuijpers, 2005	Brief Intervention	Review	Netherlands	Children	Brief Screening & Prevention
Barber, 1995	Brief Intervention	RCT	Australia	Family member	Pressures to Change
Barber, 1998	Brief Intervention	RCT	Australia	Family member	Pressures to Change
Carroll, 2001	Brief Intervention	RCT	USA	Parent	Motivational interviewing
Chang, 1999	Brief Intervention	RCT	USA	Parent	Brief Intervention
Copello, 2009	Brief Intervention	RCT	England	Family member	The 5-Step Method (more intensive version)
Hansson, 2004	Brief Intervention	RCT	Sweden	Family member	Brief Coping Skills intervention
Hansson, 2006	Brief Intervention	RCT	Sweden	Children	Alcohol Intervention Program
O'Connor, 2007	Brief Intervention	RCT	USA	Parent	Brief intervention by nutritionist
Ondersma, 2007	Brief Intervention	RCT	USA	Parent	Computer-Based Brief Intervention
Saggurti, 2013	Brief Intervention	RCT	India	Parent	Narrative prevention counselling (NIM)
Velleman, 2011	Brief Intervention	RCT	England	Family member	The 5-Step Method
Zweben, 1988	Brief Intervention	RCT	USA	Parent	Brief advice + Conjoint Therapy
Woodman, 2018	Brief Intervention	Rapid review	England	Parent and Child	Think Family Approaches
Barber, 1996	Brief Intervention	Quasi-experimental	Australia	Family member	Pressures to Change
Holge, 2010	Brief Intervention	Quasi-experimental	Denmark	Parent and Child	Clinician Group Based Supervision
Kalichman, 2009	Brief Intervention	Quasi-experimental	USA	Parent	Gender-based HIV prevention programs and a brief alcohol intervention
Loneck, 1996	Network Approach	Quasi-experimental	USA	Family member	The Johnson Intervention

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First Author, Year	Main Intervention Category	Design	Country	Directed to	Intervention name (where applicable)
Barnard, 2013	Brief Intervention	Qualitative	Scotland	Parent and Child	Early intervention
Orford, 2007	Brief Intervention	Qualitative	England	Family member	The 5-Step Method
Scott, 2004	Brief Intervention	Qualitative	England	Children	The Chrysalis Project
Templeton, 2007	Brief Intervention	Qualitative	England	Family member	The 5-Step Method
Templeton, 2014	Brief Intervention	Qualitative	England	Children	Steps to Cope intervention
Woodman, 2014	Brief Intervention	Qualitative	England	Clinician	Vulnerable Family Meetings
Bauman, 2000	Brief Intervention	Pre-post (Uncontrolled)	USA	Parent and Child	Family in-home education
Copello, 2000	Brief Intervention	Pre-post (Uncontrolled)	England	Family member	The 5-Step Method
Cullen, 2013	Brief Intervention	Pre-post (Uncontrolled)	England	Clinician	‘First Steps’ Children’s Centre Project (Addaction’s)
Howells, 1996	Brief Intervention	Pre-post (Uncontrolled)	England	Family member	Brief intervention
Howells, 2006	Brief Intervention	Pre-post (Uncontrolled)	England	Family member	Brief intervention
Jones, 2014	Brief Intervention	Pre-post (Uncontrolled)	USA	Parent	The Partner Project
Rachamim, 2011	Brief Intervention	Pre-post (Uncontrolled)	England	Clinician	Experienced child protection advisor (CPA) on-site to support clinicians
Rychtarik, 2005	Brief Intervention	Pre-post (Uncontrolled)	USA	Family member	Coping skills training and 12 Step Facilitation
Thomas, 1990	Brief Intervention	Pre-post (Uncontrolled)	USA	Family member	Unilateral family therapy
Tiburcio, 2003	Brief Intervention	Pre-post (Uncontrolled)	Mexico	Family member	The 5-Step Method
Velleman, 2008	Brief Intervention	Pre-post (Uncontrolled)	Italy	Family member	The 5-Step Method
Evans, 2012	Brief Intervention	Pilot RCT	USA	Parent	Text 4 Baby mobile health program
Landau, 2004	Network Approach	Pilot RCT	USA	Family member	A Relational Intervention Sequence for Engagement (ARISE)
Li, 2014	Network Approach	Pilot RCT	Vietnam	Parent and Child	Family psycho-education package
Emshoff, 1990	Brief Intervention	Literature review	USA	Children	Brief Screening & Prevention
Dubowitz, 2011	Screening/Assessment	RCT	USA	Children	The Safe Environment for Every Kid (SEEK)
Feigelman, 2011	Screening/Assessment	RCT	USA	Children	The Safe Environment for Every Kid (SEEK)
Woolfall, 2010	Screening/Assessment	Literature review	England	Children	Screening/assessments
Diderich, 2015a	Screening/Assessment	Case-control	Netherlands	Children	The Hague Protocol
Diderich, 2015b	Screening/Assessment	Case-control	Netherlands	Children	The Hague Protocol
Dore, 1999	School-Based Intervention	RCT	USA	Children	Friends in Need
Gance-Cleveland, 2008	School-Based Intervention	RCT	USA	Children	School-Based-Support-Groups (SBSG)
Short, 1998	School-Based Intervention	RCT	USA	Children	Stress Management and Alcohol Awareness Program (SMAAP)

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Woodside, 1997	School-Based Intervention	Quasi-experimental	USA	Children	Images within'
Gance, 2004	School-Based Intervention	Qualitative	USA	Children	School-Based-Support-Groups (SBSG)
Emshoff, 1990	School-Based Intervention	Pre-post (Uncontrolled)	USA	Children	Student-Teacher Achievement Ratio (STAR)
Emshoff, 1990	School-Based Intervention	Pilot RCT	USA	Children	Stress Management and Alcohol Awareness Program (SMAAP)
Roosa, 1990	School-Based Intervention	Pilot RCT	USA	Children	Stress Management and Alcohol Awareness Program (SMAAP)
Dittrich, 1984	Psychoeducational Group	RCT	South Africa	Parent	Group therapy
Dittrich, 1993	Psychoeducational Group	RCT	USA	Family member	Group therapy
Jewkes, 2008	Psychoeducational Group	RCT	South Africa	Parent and Family Member	Stepping Stones
Luthar, 2000	Psychoeducational Group	RCT	USA	Parent	Relational Psychotherapy Mothers' Group (RPMG)
Luthar, 2007	Psychoeducational Group	RCT	USA	Parent	Relational Psychotherapy Mothers' Group (RPMG)
Osterndorf, 2011	Psychoeducational Group	RCT	USA	Parent	Forgiveness Therapy
Zetterlind, 2001	Psychoeducational Group	RCT	Sweden	Family member	Coping skills training + support group
Belt, 2012	Psychoeducational Group	Quasi-experimental	Finland	Parent	Psychoanalytic Mother-Infant Therapy Group
Ellis, 1998	Psychoeducational Group	Quasi-experimental	England	Parent	Network support therapy
Kingree, 2000	Psychoeducational Group	Quasi-experimental	USA	Children	Mutual help groups
Margolis, 2017	Psychoeducational Group	Quasi-Experimental	England	Parent and Child	Family Environment: Drug Using Parents (FED UP)
Noether, 2007	Psychoeducational Group	Quasi-experimental	USA	Children	Integrated group therapy program
Tuttle, 2001	Psychoeducational Group	Qualitative	USA	Children	Teen-Club
Cooper, 1992	Psychoeducational Group	Pre-post (Uncontrolled)	USA	Children	Short-term group treatment
Farid, 1986	Psychoeducational Group	Pre-post (Uncontrolled)	England	Family member	Cognitive group therapy
Jewkes, 2010	Psychoeducational Group	Pre-post (Uncontrolled)	South Africa	Parent and Family Member	Stepping Stones
Tuttle, 2000	Psychoeducational Group	Pre-post (Uncontrolled)	USA	Children	Teen-Club
Zohhadi, 2006	Psychoeducational Group	Pre-post (Uncontrolled)	England	Family member	Clouds Carer Support Groups
Lui, 2008	Individual Psychological Therapy	Systematic review (Cochrane)	England	Parent	Mixed Psychosocial interventions
Stade, 2009	Individual Psychological Therapy	Systematic review (Cochrane)	Canada	Parent	Psychological and/or educational interventions
Halford, 2001	Individual Psychological Therapy	RCT	Australia	Family member	Individual supportive counselling, individual stress management or alcohol-focussed couples' therapy
Handmaker, 1999	Individual Psychological Therapy	RCT	USA	Parent	Motivational Interviewing
Reynolds, 1995	Individual Psychological Therapy	RCT	USA	Parent	Self-help program
Slesnick, 2013	Individual Psychological Therapy	RCT	USA	Parent	Ecologically-based treatment (EBT)
Brazier, 2002	Individual Psychological Therapy	Qualitative	England	Children	The Ashby Road Therapy Service
Smeaton, 2004	Individual Psychological Therapy	Qualitative	England	Children	The STARS project

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Corlyon, 2013	Individual Psychological Therapy	Pre-post (Uncontrolled)	England	Children	Children of Drug Using Parents Project
Delos, 2006	Individual Psychological Therapy	Pre-post (Uncontrolled)	Mexico	Parent	Rational-Emotive Behavioural Therapy (REBT)
Esposito, 2006	Individual Psychological Therapy	Pre-post (Uncontrolled)	USA	Children	CBT + cojoint family sessions
Pearce, 2005	Individual Psychological Therapy	Pre-post (Uncontrolled)	England	Children	The What About Me Project
Smeaton, 2006	Individual Psychological Therapy	Pre-post (Uncontrolled)	England	Parent and Child	The Time 4 U Project
Fletcher, 2013	Couples Therapy	Systematic review	Canada	Parent	Mixed Couples therapy programs
Epstein, 2002	Couples Therapy	RCT	USA	Parent	Alcohol-Focused Behavioural Couples Therapy (ABCT)
Fals-Stewart, 1996	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT) + Cognitive behavioural therapy (CBT)
Fals-Stewart, 1997	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT) Plus
Fals-Stewart, 2001	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT) + Cognitive behavioural therapy (CBT)
Fals-Stewart, 2002a	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT)
Fals-Stewart, 2002b	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT) + Cognitive Behavioural Therapy (CBT)
Fals-Stewart, 2004	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT)
Fals-Stewart, 2005	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT)
Fals-Stewart, 2006	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT; Harvard Counselling for Alcoholics Marriages Project)
Kelley, 2002	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT)
McCrary, 1986	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT)
McCrary, 1991	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT)
McCrary, 2012	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT)
O'Farrell, 1992	Couples Therapy	RCT	USA	Parent	Behavioural Marital Therapy
O'Farrell, 1996a	Couples Therapy	RCT	USA	Parent	Behavioural Marital Therapy
O'Farrell, 1996b	Couples Therapy	RCT	USA	Parent	Behavioural Marital Therapy + Relapse Prevention
O'Farrell, 1985	Couples Therapy	RCT	USA	Parent	Behavioural Marital Therapy
O'Farrell, 2017	Couples Therapy	RCT	USA	Parent	Behavioural Couples Therapy (BCT)
Vedel, 2008	Couples Therapy	RCT	Netherlands	Parent	Behavioural Couples Therapy (BCT)
Walitzer, 2004	Couples Therapy	RCT	USA	Parent	Alcohol-Focused Behavioural Couples Therapy (ABCT)
Bowers, 1990	Couples Therapy	Quasi-experimental	USA	Parent	Behavioural Couples Therapy (BCT)
O'Farrell, 2000	Couples Therapy	Pre-post (Uncontrolled)	USA	Parent	Behavioural Marital Therapy

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O'Farrell, 1993	Couples Therapy	Pre-post (Uncontrolled)	USA	Parent and Family Member	Group Behavioural Marital Therapy
O'Farrell, 1999	Couples Therapy	Pre-post (Uncontrolled)	USA	Parent	Behavioural Marital Therapy
O'Farrell, 2004	Couples Therapy	Pre-post (Uncontrolled)	USA	Parent	Behavioural Couples Therapy (BCT)
McCrary, 2004	Couples Therapy	Pilot RCT	USA	Parent	Group Couples Therapy
Powers, 2008	Couples Therapy	Meta-analysis	Netherlands	Parent and Family Member	Mixed Couples therapy programs
Calabria, 2012	Family-Based Intervention	Systematic review	Australia	Parent and Family Member	Family Based + Individual Counselling
Best, 2010	Family-Based Intervention	Review	Scotland	Parent	Mixed Family Based & Intensive Interventions
Warin, 2007	Family-Based Intervention	Review	England	Parent and Child	Sure-Start Centres
Meyers, 2001	Family-Based Intervention	RCT	USA	Parent and Child	Community Reinforcement and Family Training (CRAFT)
Meyers, 2002	Family-Based Intervention	RCT	USA	Parent and Child	Community Reinforcement and Family Training (CRAFT)
Miller, 1999	Family-Based Intervention	RCT	USA	Parent and Child	Community Reinforcement and Family Training (CRAFT)
Schottenfeld, 2011	Family-Based Intervention	RCT	USA	Parent	Community Reinforcement Approach (CRA)
Aktan, 1996	Family-Based Intervention	Quasi-experimental	USA	Parent and Child	Safe Haven Program
Boyd, 2003	Family-Based Intervention	Quasi-experimental	USA	Parent and Child	The Shadow Project
Sisson, 1996	Family-Based Intervention	Quasi-experimental	USA	Parent and Child	Community Reinforcement and Family Training (CRAFT)
Baharudin, 2014	Family-Based Intervention	Qualitative	Malaysia	Parent and Family Member	Family psycho-education package
Harbin, 2000	Family-Based Intervention	Qualitative	England	Parent and Child	The Safer Families Project
Lee, 2012	Family-Based Intervention	Qualitative	England	Family member	Barriers and enablers to implementation of family-based services
Orford, 2009	Family-Based Intervention	Qualitative	England	Family member	Specialist substance misuse treatment teams to increase family involvement
White, 2008	Family-Based Intervention	Qualitative	England	Parent and Child	Mixed Family Intervention Projects (Triple P, Webster Stratton, Strengthening Families, Parallel Lines, Parenting Programme)
Boon, 2007	Family-Based Intervention	Pre-post (Uncontrolled)	England	Parent and Child	Moving parents and children together (M-PACT)
Connors, 2001	Family-Based Intervention	Pre-post (Uncontrolled)	USA	Parent and Child	Arkansas CARES
Connors, 2006	Family-Based Intervention	Pre-post (Uncontrolled)	USA	Parent and Child	Arkansas CARES
Craig, 2016	Family-Based Intervention	Pre-post (Uncontrolled)	England	Parent and Child	Breaking the Cycle (Addaction's version)
Dembo, 2000	Family-Based Intervention	Pre-post (Uncontrolled)	USA	Parent and Child	The Youth Support Project (Based on Family Empowerment Intervention )
Doyle, 2003	Family-Based Intervention	Pre-post (Uncontrolled)	Ireland	Parent and Family Member	Twelve Steps of Alcoholics Anonymous (Minnesota Model)
Lloyd, 2011	Family-Based Intervention	Pre-post (Uncontrolled)	England	Parent and Child	Family Intervention Projects (National)
Maguin, 1995	Family-Based Intervention	Pre-post (Uncontrolled)	USA	Parent and Child	Michigan State University Multiple Risk Outreach Program

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McWhirter, 2015	Family-Based Intervention	Pre-post (Uncontrolled)	England	Parent and Child	Moving Parents and Children Together Programme (M-PACT)
Moe, 2008	Family-Based Intervention	Pre-post (Uncontrolled)	USA	Parent and Child	The Betty Ford Children's Programme
Novak, 2009,	Family-Based Intervention	Pre-post (Uncontrolled)	England	Parent and Child	Breaking the Cycle (Addaction's version)
Templeton, 2008	Family-Based Intervention	Pre-post (Uncontrolled)	England	Parent and Child	Moving Parents and Children Together Programme (M-PACT)
Velleman, 2003	Family-Based Intervention	Pre-post (Uncontrolled)	England	Parent and Child	The Family Alcohol Service
Yates, 1988	Family-Based Intervention	Pre-post (Uncontrolled)	England	Parent and Child	Community Reinforcement and Family Training (CRAFT)
Dutcher, 2009	Family-Based Intervention	Pilot RCT	USA	Parent	Community Reinforcement and Family Training (CRAFT)
Turnbull, 2012	Home-Visitation Programme	Systematic review (Cochrane)	England	Parent	Home-Visiting Program
Segal, 2012	Home-Visitation Programme	Systematic review	Australia	Parent	Home-Visiting Program
Yoshikawa, 1994	Home-Visitation Programme	Review	USA	Parent and Child	In-home Family Support
Armstrong, 1999	Home-Visitation Programme	RCT	Australia	Parent	Nurse Home Visiting
Barlow, 2006	Home-Visitation Programme	RCT	USA	Parent	Healthy Families America
Barlow, 2007	Home-Visitation Programme	RCT	England	Parent	Family Partnership Model
Barlow, 2018	Home-Visitation Programme	RCT	England	Parent and Child	Parent Under Pressure
Barnes, 2017	Home-Visitation Programme	RCT	England	Parent	Group Family Nurse Partnership (gFNP)
Barth, 1991	Home-Visitation Programme	RCT	USA	Parent	Child Parent Enrichment Project
Bartu, 2006	Home-Visitation Programme	RCT	Australia	Parent	Home-Visiting Program
Bashour, 2008	Home-Visitation Programme	RCT	Syria	Parent	Home-Visiting Program
Black, 1994	Home-Visitation Programme	RCT	USA	Parent	Home-Visiting Program
Black, 2006	Home-Visitation Programme	RCT	USA	Parent	Three Generation Study black
Bugental, 2009	Home-Visitation Programme	RCT	USA	Parent	Healthy Start Program (Extended version)
Butz, 2001	Home-Visitation Programme	RCT	USA	Parent	Home-Visiting Program
Catalano, 1999	Home-Visitation Programme	RCT	USA	Parent	Focus on Families
Cheng, 2007	Home-Visitation Programme	RCT	Japan	Parent	Home-Visiting Program
Dalziel, 2015	Home-Visitation Programme	RCT	Australia	Parent and Child	Parents Under Pressure (PUP)
Dawe, 2007	Home-Visitation Programme	RCT	Australia	Parent and Child	Parents Under Pressure (PUP)
Duggan, 1999	Home-Visitation Programme	RCT	USA	Parent and Child	Hawaii Healthy Start Program
Duggan, 2004	Home-Visitation Programme	RCT	USA	Parent and Child	Home-Visiting Program
Duggan, 2007	Home-Visitation Programme	RCT	USA	Parent and Child	Healthy Families America
DuMont, 2008	Home-Visitation Programme	RCT	USA	Parent and Child	Healthy Families New York (HFNY)
Fergusson, 2005	Home-Visitation Programme	RCT	New Zealand	Parent	Early Start

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Field, 1982	Home-Visitation Programme	RCT	USA	Parent	Parent Training by CETA aide
Gray, 1977	Home-Visitation Programme	RCT	USA	Parent	Home-Visiting Program
Haggerty, 2008	Home-Visitation Programme	RCT	USA	Parent and Child	Focus on Families (FOF)
Infante, 1989	Home-Visitation Programme	RCT	Canada	Parent	Home visiting
Johnston, 2006	Home-Visitation Programme	RCT	USA	Parent	Healthy Steps for Young Children Program (HS)
Kaaresen, 2006	Home-Visitation Programme	RCT	USA	Parent	Modified Mother-Infant Transaction Program (MITP)
Keefe, 2006	Home-Visitation Programme	RCT	USA	Parent	Reassurance, Empathy, Support, and Time-out Routine program (REST)
Kitzman, 1997	Home-Visitation Programme	RCT	USA	Parent	Nurse Family Partnership (NFP)
Koniak-Griffin, 2002	Home-Visitation Programme	RCT	USA	Parent	Early intervention program (EIP)
Larson, 1980	Home-Visitation Programme	RCT	Canada	Parent	Pre-Postnatal Home-Visiting Program
Love, 2005	Home-Visitation Programme	RCT	USA	Parent	Early Head Start
Marcenko, 1994	Home-Visitation Programme	RCT	USA	Parent and Child	Home-Visiting Program
Mulsow, 1996	Home-Visitation Programme	RCT	USA	Parent	Parenting on Edge
Nair, 2003	Home-Visitation Programme	RCT	USA	Parent	Home visiting Baltimore
Norr, 2003	Home-Visitation Programme	RCT	USA	Parent	REACH-Futures program
Olds, 1997	Home-Visitation Programme	RCT	USA	Parent	Nurse Family Partnership (NFP)
Olds, 2002	Home-Visitation Programme	RCT	USA	Parent	Nurse Family Partnership (NFP)
Olds, 2007 (Linked to Olds, 2002)	Home-Visitation Programme	RCT	USA	Parent and Child	Nurse Family Partnership (NFP)
Quinlivan, 2003	Home-Visitation Programme	RCT	Australia	Parent	Home-Visiting Programme during pregnancy
Schuler, 2000	Home-Visitation Programme	RCT	USA	Parent	Home visiting Baltimore
Schuler, 2002	Home-Visitation Programme	RCT	USA	Parent	Home-Visiting Program (By a peer-mentor)
Schuler, 2003	Home-Visitation Programme	RCT	USA	Parent	Home-Visiting Program during pregnancy
Siegel, 1980	Home-Visitation Programme	RCT	USA	Parent	Home-Visiting Program
St. Pierre, 1999	Home-Visitation Programme	RCT	USA	Parent	Comprehensive Child Development Program
Steel, 2003	Home-Visitation Programme	RCT	Canada	Parent	Public Health Nurse Follow-Up Program
Stevens-Simon, 2001	Home-Visitation Programme	RCT	USA	Parent	Addition of intensive home visiting (CAMP)
Wagner, 1999	Home-Visitation Programme	RCT	USA	Parent	Parents as Teachers (PAT)
Dawson, 1989	Home-Visitation Programme	Quasi-experimental	USA	Parent	Home-Visiting Program
Goler, 2008	Home-Visitation Programme	Quasi-experimental	USA	Parent	Early Start

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Grant, 1996	Home-Visitation Programme	Quasi-experimental	USA	Parent	The Parent–Child Assistance Program
Hardy, 1989	Home-Visitation Programme	Quasi-experimental	USA	Parent and Child	Child and Youth Program Module
Lutzker, 1984	Home-Visitation Programme	Quasi-experimental	USA	Parent and Child	Project 12-Ways
DiLeonardi, 1994	Home-Visitation Programme	Pre-post (Uncontrolled)	USA	Parent and Child	Breaking The Cycle
Gessner, 2008	Home-Visitation Programme	Pre-post (Uncontrolled)	USA	Parent and Child	Healthy Families America
Huxley, 1993	Home-Visitation Programme	Pre-post (Uncontrolled)	USA	Parent	Community Infant Project
Margolis, 2001	Home-Visitation Programme	Pre-post (Uncontrolled)	USA	Parent and Child	Linkages for Prevention Project
Rohrbach, 1994	Home-Visitation Programme	Pre-post (Uncontrolled)	USA	Parent and Child	In-home family education
Vasquez, 2008	Home-Visitation Programme	Pre-post (Uncontrolled)	USA	Parent and Child	The KINDER Clinic and Cradles Project
Tobler, 2000	Home-Visitation Programme	Meta-analysis	USA	Parent	Mixed In-home Family Support & Home-Visiting Programs
Calhoun, 2015	Parent Training Programme	Review	Australia	Parent	Parents Under Pressure, Focus on Families, Behavioural Couples Therapy)
Renk, 2015	Parent Training Programme	Review	USA	Parent	Parent-Training Program, Family-Based
Kosterman, 2001	Parent Training Programme	RCT	USA	Parent	Preparing for the Drug Free Years Programme (PDFY)
Lam, 2009	Parent Training Programme	RCT	USA	Parent	Parent Skills with Behavioural Couples Therapy
Suchman (2011) (Linked to Suchman 2010)	Parent Training Programme	RCT	USA	Parent	The Mothers and Toddlers Program
Suchman, 2016	Parent Training Programme	RCT	USA	Parent	The Mothers and Toddlers Program
Webster-Stratton, 1997	Parent Training Programme	RCT	USA	Parent	Parent-Training program
Suchman, 2004	Parent Training Programme	Quasi-experimental	USA	Parent	Parent Training & Integrated Treatment programs
Camp, 1997	Parent Training Programme	Pre-post (Uncontrolled)	USA	Parent	The Nurturing Program for Parents of Children Birth to Five Years Old
Suchman, 2008	Parent Training Programme	Pre-post (Uncontrolled)	USA	Parent	The Mothers and Toddlers Program
Liddle, 1995	Family Therapy	Review	USA	Parent and Child	Family therapy
Donohue, 2014	Family Therapy	RCT	USA	Parent and Child	Family Behaviour Therapy (FBT)
Liddle, 2009	Family Therapy	RCT	USA	Parent and Child	Multidimensional Family Therapy
O'Farrell, 2008	Family Therapy	RCT	USA	Parent and Family Member	Brief Family Treatment
Slesnick, 2009	Family Therapy	RCT	USA	Parent and Child	Home-Based Ecological Family Therapy
Slesnick, 2016	Family Therapy	RCT	USA	Parent and Child	Multi Systemic Family Therapy
O'Farrell, 2006	Family Therapy	Quasi-experimental	USA	Parent and Family Member	Brief Family Treatment
O'Farrell, 2007	Family Therapy	Quasi-experimental	USA	Parent and Family Member	Brief Family Treatment

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Schaeffer, 2013	Family Therapy	Quasi-experimental	USA	Parent and Child	MST-Building Stronger Families (MST-BSF)
Stanton, 1997	Family Therapy	Meta-analysis	USA	Parent and Family Member	Mixed Family Therapy
Kramlich, 2015	Integrated Treatment Service	Systematic review	England	Parent	Mixed Comprehensive, Integrated Multidisciplinary Services focusing on Relational Care
Moreland, 2018	Integrated Treatment Service	Systematic review	USA	Parent and Child	Mixed Integrated Treatment Services & Home Visitation
Niccols, 2012a	Integrated Treatment Service	Systematic review	Canada	Parent	Integrated Treatment Service
Niccols, 2012b	Integrated Treatment Service	Systematic review	Canada	Parent	Integrated Treatment Service
Kerwin, 2005	Integrated Treatment Service	Review	USA	Parent	Mixed Integrated programs
Marsh, 2012	Integrated Treatment Service	Review	USA	Parent	Mixed Child Welfare and Social Care services + Integrated treatments
Neger, 2016	Integrated Treatment Service	Review	USA	Parent	Parents under pressure, Toddlers program, Relational Psychotherapy Mother's Group
Berlin, 2014	Integrated Treatment Service	RCT	USA	Parent	Attachment and Biobehavioural Catch-up (ABC)
Huber, 1999	Integrated Treatment Service	RCT	USA	Parent	Integrated residential treatment vs Integrated outpatient treatment
Morrow, 2010	Integrated Treatment Service	RCT	USA	Parent and Child	The Starting Early Starting Smart Integrated Services Model
Satyanarayana, 2016	Integrated Treatment Service	RCT	India	Parent and Family Member	Integrated Cognitive Behavioural Therapy (ICBI)
Smith Stover, 2011	Integrated Treatment Service	RCT	USA	Parent	Manualized integrated domestic violence and substance abuse treatment (SADV)
Volpicelli, 2000	Integrated Treatment Service	RCT	USA	Parent	Psychosocially enhanced treatment program (PET)
Armstrong, 2003	Integrated Treatment Service	Quasi-experimental	USA	Parent	Integrated outpatient treatment
Barkauskas, 2002	Integrated Treatment Service	Quasi-experimental	USA	Parent	Integrated Residential program
Field, 1998	Integrated Treatment Service	Quasi-experimental	USA	Parent	Integrated outpatient treatment
Harshman, 1999	Integrated Treatment Service	Quasi-experimental	USA	Parent	Residential Integrated treatment
McComish, 2003	Integrated Treatment Service	Quasi-experimental	USA	Parent and Child	Flint Odyssey House Family Focused program
Sowers, 2002	Integrated Treatment Service	Quasi-experimental	USA	Parent	Susan B. Anthony Centre (SBAC) – residential rehabilitation
Touissaint, 2007	Integrated Treatment Service	Quasi-experimental	USA	Parent	Residential Integrated Treatment
Whiteside, 1999	Integrated Treatment Service	Quasi-experimental	USA	Parent	Integrated Residential treatment
Huebner, 2012	Integrated Treatment Service	Quasi-experimental	USA	Parent and Child	Sobriety Treatment and Recovery Teams (START)
Ryan, 2006	Integrated Treatment Service	Quasi-experimental	USA	Parent	Intensive Case Management for substance abuse and child welfare systems (ICM)
Morris, 2012	Integrated Treatment Service	Qualitative	Australia	Parent	Multidisciplinary specialist clinic
Abdollahnejad, 2008	Integrated Treatment Service	Pre-post (Uncontrolled)	England	Parent	Tehran Therapeutic Community (TTC)
Belcher, 2005	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent	Project STRIVE

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Camp, 1995	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent	Mixed integrated programs
Jansson, 1996	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent	Mixed Integrated programs
Kerwin, 2007	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent	Integrated Program
Killeen, 2000	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent	Residential Integrated treatment
Magura, 1999	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent and Child	Family Rehabilitation Program
Meyer, 2012	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent	Integrated Treatment Service
Narrow, 1993	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent	National Institute of Mental Health Epidemiologic Catchment Area Program
Nattala, 2010	Integrated Treatment Service	Pre-post (Uncontrolled)	India	Parent and Family Member	Dyadic Relapse Prevention (DRP)
Thompson, 2013	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent	Parenting in Recovery Program
Wright, 2012	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent and Child	Clinical care during pregnancy + Child care
Lee, 2009	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent and Child	Substance abuse treatment counsellors + child welfare
Weinreb, 2007	Integrated Treatment Service	Pre-post (Uncontrolled)	USA	Parent	Integrating Behavioural Health Services for Homeless Mothers and Children in Primary Care
Saldana, 2015	Integrated Treatment Service	Pilot RCT	USA	Parent and Child	Families Actively Improving Relationships (FAIR)
Milligan, 2010	Integrated Treatment Service	Meta-analysis	Canada	Parent	Integrated Treatment Service
Welsh, 2008	Intensive Case Management	Review	England	Parent	Parents of Children at Risk (POCAR)
DeMarsh, 1985	Strengthening Families Programme	Review	USA	Parent and Child	Strengthening Families Program
Kumpfer, 2018	Strengthening Families Programme	Review	USA	Parent and Child	Strengthening Families Program
Brook, 2007	Intensive Case Management	Retrospective cohort	USA	Parent and Child	Comprehensive Service-Delivery Mode
Ernst, 1999	Intensive Case Management	RCT	USA	Parent	Seattle Model of Paraprofessional Advocacy
Jansson, 2005	Intensive Case Management	RCT	USA	Parent	Intensive Case Management (ICM)
Morgenstern, 2006	Intensive Case Management	RCT	USA	Parent	Intensive Case management
Gottfredson, 2006	Strengthening Families Programme	RCT	USA	Parent and Child	Strengthening Families Program
Maguin, 2003	Strengthening Families Programme	RCT	USA	Parent and Child	Strengthening Families Program
Kumpfer, 1985	Strengthening Families Programme	Quasi-Experimental	USA	Parent and Child	Strengthening Families Program
Kumpfer, 1989	Strengthening Families Programme	Quasi-Experimental	USA	Parent and Child	Strengthening Families Program
Kumpfer, 2010	Strengthening Families Programme	Quasi-Experimental	USA	Parent and Child	Strengthening Families Program

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Orte, 2008	Strengthening Families Programme	Quasi-experimental	Spain	Parent and Child	Family Competence Program (adaptation of the Strengthening Families Programme (SFP))
Motz, 2006	Intensive Case Management	Qualitative	Canada	Parent and Child	Breaking the Cycle (BTC)
Choi, 2006	Intensive Case Management	Pre-post (Uncontrolled)	USA	Parent	Recovery Coaches
Choi, 2007	Intensive Case Management	Pre-post (Uncontrolled)	USA	Parent	Juvenile Court Assessment Project
Niccols, 2005	Intensive Case Management	Pre-post (Uncontrolled)	Canada	Parent and Child	New Choices Program
Brook, 2012	Strengthening Families Programme	Pre-post (Uncontrolled)	USA	Parent and Child	Strengthening Families Program
Coombes, 2009	Strengthening Families Programme	Pre-post (Uncontrolled)	England	Parent and Child	Strengthening Families Programme (SFP)
Kumpfer, 2003	Strengthening Families Programme	Literature review	USA	Parent and Child	The Strengthening Families Program, Skills Based and school-based programs
Department of Health and Human Services, 2002 (USA)	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program
Feldman, 1991	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program
Henggeler, 1993	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program (Homebuilders)
Jones, 1985	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program
Lewis, 2005	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program (Families First)
Meezan, 1996	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program
Schuerman, 1994	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program
Szykula, 1985	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program
Walton, 1997	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program
Willems, 1981	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program
Yuan, 1990	Intensive Family Preservation Programme	RCT	USA	Parent and Child	Intensive Family Preservation Program
AuClaire, 1986	Intensive Family Preservation Programme	Quasi-experimental	USA	Parent and Child	Intensive Family Preservation Program
Dennis, 1986	Intensive Family Preservation Programme	Quasi-experimental	USA	Parent and Child	Intensive Family Preservation Program
Forrester, 2008	Intensive Family Preservation Programme	Quasi-experimental	England	Parent and Child	Intensive Family Preservation Program (Option 2)
Forrester, 2012	Intensive Family Preservation Programme	Quasi-experimental	England	Parent and Child	Intensive Family Preservation Program (Option 2)

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First Author, Year	Main Intervention Category	Design	Country	Directed to	Intervention name (where applicable)
Forrester, 2016	Intensive Family Preservation Programme	Quasi-Experimental	England	Parent and Child	Intensive Family Preservation Program
Pecora, 1991	Intensive Family Preservation Programme	Quasi-experimental	USA	Parent and Child	Intensive Family Preservation Program
Wood, 1988	Intensive Family Preservation Programme	Quasi-experimental	USA	Parent and Child	Intensive Family Preservation Program (Families First)
Kirk, 2004	Intensive Family Preservation Programme	Pre-post (Uncontrolled)	USA	Parent and Child	Intensive Family Preservation Program
Woolfall, 2008	Intensive Family Preservation Programme	Pre-post (Uncontrolled)	England	Parent and Child	Intensive Family Preservation (Option 2)
Channa, 2012	Intensive Family Preservation Programme	Meta-analysis	Netherlands	Parent	Mixed Family Preservation programs
Schweitzer, 2015	Intensive Family Preservation Programme	Meta-analysis	USA	Parent and Child	Intensive Family Preservation Program
Magura, 1996	Intensive Family Preservation Programme	Literature review	USA	Parent and Child	Mixed Family Preservation programs
Canfield, 2017	Social Care Case Management	Rapid review	England	Parent and Child	Social Work Case-Management
McGovern, 2008	Social Care Case Management	Rapid review	England	Parent and Child	Mixed Parental alcohol misuse Interventions
Brandon, 2008	Social Care Case Management	Pre-post (Uncontrolled)	England	Children	Children looked after
Bullock, 1998	Social Care Case Management	Pre-post (Uncontrolled)	England	Children	Children looked after
Farmer, 2008	Social Care Case Management	Pre-post (Uncontrolled)	England	Children	Children Looked After
Farmer, 2010	Social Care Case Management	Pre-post (Uncontrolled)	England	Children	Children looked after
Farmer, 2012	Social Care Case Management	Pre-post (Uncontrolled)	England	Children	Social worker child care placements
Forrester, 2008b	Social Care Case Management	Pre-post (Uncontrolled)	England	Children	Social worker child care placements
Sinclair, 2005	Social Care Case Management	Pre-post (Uncontrolled)	England	Children	Children looked after
Wade, 2010	Social Care Case Management	Pre-post (Uncontrolled)	England	Children	Children looked after
Copello, 2005b	Social Care Case Management	Literature review	England	Parent, Child and Family Member	Mixed Social Care Case management approaches (incl. Community Reinforcement and Family Training, A Relational Intervention Sequence for Engagement, Unilateral Family Therapy, Alcohol-focused behavioural couples' therapy)
Horgan, 2011	Social Care Case Management	Literature review	Ireland	Parent and Child	Mixed Social Care Case management approaches
Peleg-Oren, 2006	Social Care Case Management	Literature review	USA	Parent and Child	Mixed Social Care Case management approaches
Gwadz, 2008	Community Outreach	RCT	USA	Parent and Child	Family First (FF)
Marsh, 2000	Community Outreach	Quasi-experimental	England	Parent and Child	Enhanced care (incl. transportation, childcare and outreach)
Rivera, 2015	Community Outreach	Quasi-experimental	USA	Parent and Child	Housing Based Services (HBS)
Sacks, 2004	Community Outreach	Quasi-experimental	Canada	Parent and Child	Residential integrated treatment for women

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First Author, Year	Main Intervention Category	Design	Country	Directed to	Intervention name (where applicable)
McIntosh, 2006	Community Outreach	Qualitative	Scotland	Parent and Child	The East Ayrshire Substance Misuse Family Support Project (part of Scottish Executive Substance Misuse Research Programme) & The Arbelour Edinburgh Outreach Project (part of Scottish Executive Substance Misuse Research Programme)
Racine, 2009	Community Outreach	Qualitative	Canada	Parent	Breaking the Cycle (BTC) Pregnancy Outreach Program
Schensul, 2010	Community Outreach	Pre-post (Uncontrolled)	India	Parent	Research and Intervention in Sexual Health; Theory to Action (RISHTA)
Murphy, 2017	Family Alcohol and Drug Court	Review	USA	Parent and Child	Family Treatment Drug Court
Dakof, 2003	Family Alcohol and Drug Court	RCT	USA	Parent	Engaging Moms Program (EMP)
Dakof, 2010	Family Alcohol and Drug Court	RCT	USA	Parent and Child	Engaging Moms Program (EMP)
Boles, 2007	Family Alcohol and Drug Court	Quasi-experimental	USA	Parent and Child	Dependency Drug Courts
Bruns, 2012	Family Alcohol and Drug Court	Quasi-experimental	USA	Parent and Child	Family Treatment Drug Court (FTDC)
Chaung, 2012	Family Alcohol and Drug Court	Quasi-experimental	USA	Parent and Child	Family Dependency Treatment Courts (Integrated)
Dakof, 2009	Family Alcohol and Drug Court	Quasi-experimental	USA	Parent and Child	Engaging Moms Program (EMP)
Harwin, 2011	Family Alcohol and Drug Court	Quasi-Experimental	England	Parent and Child	Family Alcohol and Drug Court (FDAC)
Harwin, 2014	Family Alcohol and Drug Court	Quasi-experimental	England	Parent and Child	Family Alcohol and Drug Court (FDAC)
Harwin, 2016	Family Alcohol and Drug Court	Quasi-experimental	England	Parent and Child	Family Alcohol and Drug Court (FDAC)
Worcel, 2008	Family Alcohol and Drug Court	Quasi-experimental	USA	Parent and Child	Family drug and alcohol court (FDAC)
Burrus, 2011	Family Alcohol and Drug Court	Pre-post (Uncontrolled)	USA	Parent and Child	Family Recovery Program (Family Drug Court)
Green, 2007	Family Alcohol and Drug Court	Pre-post (Uncontrolled)	USA	Parent and Child	Family Treatment Drug Court (FTDC)
Minozzi, 2013	Pharmacological Treatment	Systematic review (Cochrane)	Italy	Parent	Maintenance agonist treatments
Smith, 2009	Pharmacological Treatment	Systematic review (Cochrane)	England	Parent	Mixed Pharmacological Interventions
Buckley, 2013	Pharmacological Treatment	Retrospective cohort	Australia	Parent	Multidisciplinary perinatal and family drug health services
Fischer, 1999	Pharmacological Treatment	RCT (Open)	Austria	Parent	Methadone treatment
Carroll, 1995	Pharmacological Treatment	RCT	USA	Parent	Methadone treatment
Fischer, 2006	Pharmacological Treatment	RCT	Austria	Parent	Methadone treatment
Gaalema, 2012	Pharmacological Treatment	RCT	USA	Parent	Methadone treatment
Jones, 2005	Pharmacological Treatment	RCT	USA	Parent	Methadone treatment
Chang, 1992	Pharmacological Treatment	Quasi-experimental	USA	Parent	Methadone treatment

Appendix 6. Characteristics of upcoming UK RCTs for PAM identified in trial databases

<b>Trial registration No.*</b>	<b>Main Intervention Category</b>	<b>Design</b>	<b>Country</b>	<b>Directed to</b>	<b>Intervention name (where applicable)</b>
ISRCTN21987651	Family-based intervention	RCT	England	Parent	Parents and communities together (PACT)
ISRCTN43209618	Family-based intervention	RCT	Scotland	Father and Child	Parents under Pressure programme
ISRCTN13644600	Family-based intervention	RCT	Ireland	Parent and Child	“A wraparound intervention”
ISRCTN47282925	Family-based intervention	RCT	England	Parent and Child	Parents under Pressure Programme
ISRCTN60291091	Brief Intervention	RCT	England	Parent	“Brief interventions to reduce risky drinking....”
ISRCTN80786829	Brief Intervention	RCT	England	Parent and Child	“Supporting looked after children and care leavers in decreasing drugs...”
ISRCTN97394558	School-based Intervention	RCT	England	Child	Breakthrough Mentoring scheme
ISRCTN80672127	School-based Intervention	RCT	Wales	Parent and Child	Kids Adults Together (KAT) Programme
ISRCTN55055030	Integrated Treatment Service	RCT	Northern Ireland	Mothers	MOMENTS Study

\* More information of each trial can be found by visiting <http://www.isrctn.com/> followed by the trial registration number.

## Appendix 7. Alcohol classifications and cut-off scores used to calculate alcohol misuse severity categories for different measures

Classification/Terms	Description	Measures & Cut-off score (Women)
Severe/Very high-risk drinking/Harmful drinking, Alcohol dependence <sup>4,12</sup>	Defined as drinking more than 35 units per week (women) and more than 50 units per week (men) / For alcohol dependence and harmful drinking, see Alcohol Use Disorders as described by NICE.	AUDIT: $\geq 20$ ; AUDIT-PC: $\geq 10$ ; SADQ $\geq 31$ ; CAGE: $\geq 4$
Moderate/Increased risk drinking <sup>29,457</sup> /Hazardous drinking <sup>4,12</sup>	Defined as drinking 15 to 35 units per week (women) and 15 to 50 (men). / For Hazardous drinking, see Alcohol Use Disorders as described by NICE.	AUDIT: 8-19; AUDIT-PC: 5-9; SADQ 16-30; CAGE: 2-3 (CAGE: 3 men)
Mild/Lower-risk drinking	Defined as drinking less than 15 units per week (women and men)	AUDIT $<8$ ; SADQ $<16$ ; AUDIT-PC $<4$ ; CAGE $<2$ (CAGE $<3$ men)
Alcohol-Use Disorders <sup>4,12</sup>	Alcohol-use disorders cover a wide range of mental health problems as recognised within the international disease classification systems (ICD-10, DSM-IV). These include hazardous and harmful drinking and alcohol dependence. See 'Harmful' and 'Hazardous' drinking and 'Alcohol dependence' (NICE, 2015).	
England drinking guidelines <sup>29,457</sup>	Guidelines set by the UK government on how much alcohol may be consumed without a serious impact on health. The guidelines recommend that men should not regularly drink more than 3–4 units of alcohol per day, and women should not regularly drink more than 2–3 units of alcohol per day. In terms of weekly limits, men and women are advised to drink no more than 14 units per week. Anyone who has drunk heavily in one session is advised to go without alcohol for 48 hours, to give their liver and other body tissues time to recover.	
Alcohol Unit <sup>29,457</sup>	Each unit corresponds to approximately 8 g or 10 ml of ethanol. The same volume of similar types of alcohol (for example, 2 pints of lager) can comprise a different number of units depending on the drink's strength (that is, its percentage concentration of alcohol).	
ONS quantity-frequency measure <sup>458</sup>	<i>Extract from publication:</i> “The quantity-frequency measure has been used by the General Household Survey since 1978, by the Health Survey for England from 1991 to 2002, and by some other surveys of which drinking is a component. Respondents are asked how often over the last year they have drunk each of a number of different types of drink, and how much they have usually drunk on any one day. It is likely that this method misses heavy drinking occasions and consumption at peak periods of the year, since respondents are unlikely to think of heavier drinking on special occasions, such as Christmas and New Year, or while on holiday, as usual drinking. The method used for calculating usual weekly alcohol consumption is to multiply the number of units of each type drunk on a usual drinking day by the frequency with which it was drunk using the factors shown below, and then to total across all drinks.” <sup>458</sup>	
Drinking frequency multiplying factor <sup>458</sup>	<ul style="list-style-type: none"> <li>• Almost every day x 7.0</li> <li>• 5 or 6 days a week x 5.5</li> <li>• 3 or 4 days a week x 3.5</li> <li>• Once or twice a week x 1.5</li> <li>• Once or twice a month x 0.375 (1.5 ÷ 4)</li> <li>• Once every couple of months x 0.115 (6 ÷ 52)</li> <li>• Once or twice a year x 0.029 (1.5 ÷ 52)</li> </ul>	

## Appendix 8. Public Health England's Narrow Measure of ICD-10 Codes for analysis in HES-APC

ICD-10 Code	Description
F10	Mental and behavioural disorders due to use of alcohol
F10.0	Acute intoxication
F10.1	Harmful use
F10.2	Dependence syndrome
F10.3	Withdrawal state
F10.4	Withdrawal state with delirium
F10.5	Psychotic disorder
F10.6	Amnesic syndrome
F10.7	Residual and late-onset psychotic disorder
F10.8	Other mental and behavioural disorders due to the use of alcohol
F10.9	Unspecified mental and behavioural disorders due to the use of alcohol
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
K70.4	Alcoholic hepatic failure
K70.9	Alcoholic liver disease, unspecified
T51	Toxic effect of alcohol
T51.0	Ethanol poisoning
T51.1	Methanol poisoning
T51.9	Toxic effect of alcohol, unspecified
E24.4	Alcohol-induced pseudo-Cushing's syndrome
G31.2	Degeneration of nervous system due to alcohol
G62.1	Alcoholic polyneuropathy
G72.1	Alcoholic myopathy
I42.6	Alcoholic cardiomyopathy
K29.2	Alcoholic gastritis
K85.2	Alcohol-induced acute pancreatitis
K86.0	Alcohol-induced chronic pancreatitis
Q86.0	Fetal alcohol syndrome (dysmorphic)
R78.0	Excess alcohol blood levels
X45	Accidental poisoning by and exposure to alcohol
X65	Intentional self-poisoning by and exposure to alcohol
Y15	Poisoning by and exposure to alcohol, undetermined intent
Y90	Evidence of alcohol involvement determined by blood alcohol level
Y91	Evidence of alcohol involvement determined by level of intoxication

## Appendix 9. Drug and alcohol-related ICD-10 Codes for analysis in HES-APC (Excluding PHE narrow measure; Appendix 7)

ICD 10 Code*	Description
E244	Alcohol-induced pseudo-Cushing syndrome
O354	Maternal care for (suspected) damage to fetus from alcohol
O355	Maternal care for (suspected) damage to fetus by drugs
Z502	Alcohol rehabilitation
Z503	Drug rehabilitation
Z714	Alcohol abuse counselling and surveillance
Z715	Drug abuse counselling and surveillance
Z721	Alcohol use (Excl.: alcohol dependence (F10.2))
Z722	Drug use (Excl.: abuse of non-dependence-producing substances (F55) drug dependence (F11-F16, F19.-) with common fourth character .2)
T506	Antidotes and chelating agents, not elsewhere classified (Alcohol deterrents)
R780	Finding of alcohol in blood
R781	Finding of opiate drug in blood
R782	Finding of cocaine in blood
R783	Finding of hallucinogen in blood
R784	Finding of other drugs of addictive potential in blood
R785	Finding of psychotropic drug in blood
F11	Mental and behavioural disorders due to use of opioids
F12	Mental and behavioural disorders due to use of cannabinoids
F13	Mental and behavioural disorders due to use of sedatives or hypnotics
F14	Mental and behavioural disorders due to use of cocaine
F15	Mental and behavioural disorders due to use of other stimulants, including caffeine
F16	Mental and behavioural disorders due to use of hallucinogens
F18	Mental and behavioural disorders due to use of volatile solvents
F19	Mental and behavioural disorders due to multiple drug use and use of other psychoactive substances
T40	Poisoning by narcotics and psychodysleptics [hallucinogens] (Excl.: intoxication meaning inebriation (F10-F19))
T40.0	Opium
T40.1	Heroin
T40.2	Other opioids
T40.3	Methadone
T40.4	Other synthetic narcotics
T40.5	Cocaine
T40.6	Other and unspecified narcotics
T40.7	Cannabis (derivatives)
T40.8	Lysergide [LSD]
T40.9	Other and unspecified psychodysleptics [hallucinogens]
Y10	Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined intent, Incl.: 4-aminophenol derivatives, nonsteroidal anti-inflammatory drugs [NSAID], pyrazolone derivatives, salicylates
Y11	Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified, undetermined intent. Incl.: antidepressants, barbiturates, hydantoin derivatives, iminostilbenes, methaqualone compounds, neuroleptics, psychostimulants, succinimides and oxazolidinedione tranquilizers
Y12	Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent Incl.: cannabis (derivatives), cocaine, codeine, heroin, lysergide [LSD], mescaline, methadone, morphine, opium (alkaloids)
Y13	Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent Incl.: parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics, parasympathomimetics [cholinergics], sympatholytics [antiadrenergics], sympathomimetics [adrenergics]

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ICD 10 Code*	Description
Y14	Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent Incl.:agents primarily acting on smooth and skeletal muscles and the respiratory system, anaesthetics (general)(local), drugs affecting the: cardiovascular system, gastrointestinal system, hormones and synthetic substitutes, systemic and haematological agents, systemic antibiotics and other anti-infectives, therapeutic gases, topical preparations vaccines, water-balance agents and drugs affecting mineral and uric acid metabolism
X42	Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified Incl.:cannabis (derivatives), cocaine, codeine, heroin, lysergide [LSD], mescaline, methadone, morphine, opium (alkaloids)
X43	Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system Incl.: parasympatholytics [anticholinergics and antimuscarinics] and spasmolytics, parasympathomimetics [cholinergics], sympatholytics [antiadrenergics], sympathomimetics [adrenergics]
X45	Accidental poisoning by and exposure to alcohol, Incl.: alcohol: NOS, butyl [1-butanol], ethyl [ethanol], isopropyl [2-propanol], methyl [methanol], propyl [1-propanol], fusel oil
G405	Special epileptic syndromes, Epilepsia partialis continua [Kozhevnikof] Epileptic seizures related to: alcohol, drugs
Z864	Personal history of psychoactive substance abuse; Conditions classifiable to F10-F19, Excl.: current dependence (F10-F19 with common fourth character .2), problems related to use of: alcohol (Z72.1), drug (Z72.2), tobacco (Z72.0)
X60	Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics
X61	Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified
X62	Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified
X63	Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system
X64	Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances
Y49	Psychotropic drugs, not elsewhere classified
Y490	Tricyclic and tetracyclic antidepressants
Y491	Monoamine-oxidase-inhibitor antidepressants
Y492	Other and unspecified antidepressants
Y493	Phenothiazine antipsychotics and neuroleptics
Y494	Butyrophenone and thioxanthene neuroleptics
Y495	Other antipsychotics and neuroleptics
Y496	Psychodysleptics [hallucinogens]
Y497	Psychostimulants with abuse potential
Y498	Other psychotropic drugs, not elsewhere classified
Y499	Psychotropic drug, unspecified

\*ICD codes are based on previously classified alcohol-related harms including those linked to substance misuse.<sup>459,460</sup>

## Appendix 10. Alcohol-related Read Codes for analysis in CPRD

Read Code	Read term	Drinking category*
1367.00	Stopped drinking alcohol	Ex-Drinker
136A.00	Ex-trivial drinker (<1u/day)	Ex-Drinker
136B.00	Ex-light drinker - (1-2u/day)	Ex-Drinker
136C.00	Ex-moderate drinker - (3-6u/d)	Ex-Drinker
136D.00	Ex-heavy drinker - (7-9u/day)	Ex-Drinker
136E.00	Ex-very heavy drinker->9u/d)	Ex-Drinker
1362.11	Drinks rarely	Mild
1362.12	Drinks occasionally	Mild
2577.00	O/E - breath - alcohol smell	Moderate
2577.11	O/E - alcoholic breath	Moderate
136F.00	Spirit drinker	Moderate
136G.00	Beer drinker	Moderate
136H.00	Drinks beer and spirits	Moderate
136I.00	Drinks wine	Moderate
136J.00	Social drinker	Moderate
136L.00	Alcohol intake within recommended sensible limits	Moderate
136N.00	Light drinker	Moderate
136O.00	Moderate drinker	Moderate
1D19.00	Pain in lymph nodes after alcohol consumption	Moderate
1361.00	Teetotaler	Non-drinker
1361.11	Non-drinker alcohol	Non-drinker
1361.12	Non-drinker alcohol	Non-drinker
136M.00	Current non-drinker	Non-drinker
8BA8.00	Alcohol detoxification	Severe
8H35.00	Admitted to alcohol detoxification centre	Severe
C253.00	Wernicke's encephalopathy	Severe
E010.00	Alcohol withdrawal delirium	Severe
E010.11	DTs – Delirium tremens	Severe
E010.12	Delirium tremens	Severe
E011100	Korsakov's alcoholic psychosis with peripheral neuritis	Severe
E012000	Chronic alcoholic brain syndrome	Severe
E013.00	Alcohol withdrawal hallucinosis	Severe
E01y000	Alcohol withdrawal syndrome	Severe
E23..00	Alcohol dependence syndrome	Severe
E23..11	Alcoholism	Severe
E230.00	Acute alcoholic intoxication in alcoholism	Severe
E230.11	Alcohol dependence with acute alcoholic intoxication	Severe
E230000	Acute alcoholic intoxication, unspecified, in alcoholism	Severe
E230100	Continuous acute alcoholic intoxication in alcoholism	Severe
E230200	Episodic acute alcoholic intoxication in alcoholism	Severe
E230300	Acute alcoholic intoxication in remission, in alcoholism	Severe
E230z00	Acute alcoholic intoxication in alcoholism NOS	Severe
E231.00	Chronic alcoholism	Severe
E231.11	Dipsomania	Severe
E231000	Unspecified chronic alcoholism	Severe
E231100	Continuous chronic alcoholism	Severe

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Read Code	Read term	Drinking category*
E231200	Episodic chronic alcoholism	Severe
E231300	Chronic alcoholism in remission	Severe
E231z00	Chronic alcoholism NOS	Severe
E23z.00	Alcohol dependence syndrome NOS	Severe
Eu10200	[X]Mental and behavioural disorders due to use of alcohol: dependence syndrome	Severe
Eu10211	[X]Alcohol addiction	Severe
Eu10212	[X]Chronic alcoholism	Severe
Eu10213	[X]Dipsomania	Severe
Eu10300	[X]Mental and behavioural disorders due to use of alcohol: withdrawal state	Severe
Eu10400	[X]Mental and behavioural disorders due to use of alcohol: withdrawal state with delirium	Severe
Eu10411	[X]Delirium tremens; alcohol induced	Severe
Eu10712	[X]Chronic alcoholic brain syndrome	Severe
Eu10800	[X]Alcohol withdrawal-induced seizure	Severe
F11x000	Cerebral degeneration due to alcoholism	Severe
F11x011	Alcoholic encephalopathy	Severe
F11x011	Alcoholic encephalopathy	Severe
F375.00	Alcoholic polyneuropathy	Severe
F375.00	Alcoholic polyneuropathy	Severe
F394100	Alcoholic myopathy	Severe
F394100	Alcoholic myopathy	Severe
G555.00	Alcoholic cardiomyopathy	Severe
G555.00	Alcoholic cardiomyopathy	Severe
G852300	Oesophageal varices in alcoholic cirrhosis of the liver	Severe
J612.00	Alcoholic cirrhosis of liver	Severe
J612.00	Alcoholic cirrhosis of liver	Severe
J617000	Chronic alcoholic hepatitis	Severe
J671000	Alcohol-induced chronic pancreatitis	Severe
Z191.00	alcohol detoxification	Severe
136K.00	Alcohol intake above recommended sensible limits	Severe
136P.00	Heavy drinker	Severe
136Q.00	Very heavy drinker	Severe
136R.00	Binge drinker	Severe
136S.00	Hazardous alcohol use	Severe
136T.00	Harmful alcohol use	Severe
136W.00	Alcohol misuse	Severe
3ZY.00	Disqualified from driving due to excess alcohol	Severe
E23..12	Alcohol problem drinking	Severe
E250.00	Nondependent alcohol abuse	Severe
E250.11	Drunkenness NOS	Severe
E250.12	Hangover (alcohol)	Severe
E250.13	Inebriety NOS	Severe
E250.14	Intoxication - alcohol	Severe
E250000	Nondependent alcohol abuse, unspecified	Severe
E250100	Nondependent alcohol abuse, continuous	Severe
E250200	Nondependent alcohol abuse, episodic	Severe
E250300	Nondependent alcohol abuse in remission	Severe
E250z00	Nondependent alcohol abuse NOS	Severe
R103.00	[D]Alcohol blood level excessive	Severe
U81..00	X]Evidence of alcohol involvement determined by level of intoxication	Severe
ZV11311	[V]Problems related to lifestyle alcohol use	Severe

\*Read code classifications of drinking categories are based on previous published analysis of alcohol-related harms using the CPRD<sup>38-40</sup>



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