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**Article:**

Brennan, A. orcid.org/0000-0002-1025-312X, Hill-McManus, D., Stone, T. orcid.org/0000-0002-0167-3800 et al. (11 more authors) (2019) Modeling the potential impact of changing access rates to specialist treatment for alcohol dependence for local authorities in England: The Specialist Treatment for Alcohol Model (STreAM). Journal of Studies on Alcohol and Drugs (Sup 18). pp. 96-109. ISSN 1937-1888

10.15288/jsads.2019.s18.96

5 Tables, 2 Figures, 1 Appendix

# Modelling the Potential Impact of Changing Access Rates to Specialist Treatment for Alcohol Dependence for Local Authorities in England – the Specialist Treatment for Alcohol Model (STreAM)

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Funding:
This is independent research commissioned and funded by the Department of Health Policy Research Programme (An Evidence-based Model for Estimating Requirements for Specialist Alcohol Treatment Capacity in England, PR-R4-0512-12002). The views expressed in this publication are those of the authors and not necessarily those of the Department of Health.

## Abstract

### Objective

Modelling impact of changing specialist treatment access rates to different treatment pathways on future prevalence of alcohol dependence, treatment outcomes, service capacity, costs, and mortality.

### Methods

Local Authority numbers and prevalence of people 'potentially in need of assessment for and treatment in specialist services for alcohol dependence' (PINASTFAD) are estimated by mild, moderate, severe and complex needs. The specialist treatment access rate per PINASTFAD person is estimated and from 22 different treatment pathways are classified from administrative data. . Other model inputs include natural remission, relapse after treatment, service costs and mortality rates.

'What-if' analyses assess changes to specialist treatment access rates and treatment pathways. Model outputs include: numbers and prevalence of people who are PINASTFAD , numbers treated by 22 pathways, outcomes (successful completion with abstinence, successfully moderated non-problematic drinking, re-treatment within 6 months, dropout, transfer, custody), mortality rates, capacity requirements (numbers in contact with community services, or staying in residential or inpatient places), total treatment costs and general healthcare savings.

Five scenarios illustrate functionality: A) no change; B) achieve access rates at 70th percentile nationally; C) increase access by +25%; D) increase access to Scotland rate; E) reduce access by -25%

### Results

At baseline, 14,581 people are PINASTFAD (2.43% of adults) and the specialist treatment access rate is 10.84%. The 5 year impact of scenarios on PINASTFAD numbers (versus no change) are: B) reduce by 191 (-1.3%); C) reduce by 477 (-3.3%); D) reduce by almost 2800 (-19.2%); and E) increase by 533 (+3.6%). Relative impact is similar for other outputs.

### Conclusion

Decision makers can estimate the potential impact of changing specialist treatment access rates for alcohol dependence.

## Introduction

Alcohol dependence causes a substantial burden on individuals and wider society, including increased risk of mortality and costs to health services(World Health Organization, 2014). In many countries, assessment and structured treatment pathways exists, and national guidelines such as those by NICE (National institute for health and Care Excellence) in England set out recommendations for different groups of clients(National Institute for Health and Clinical Excellence, 2011). Within published literature, the most complete approach to modelling the system impact of changing access rates to alcohol treatment services was undertaken by Rush(Rush, 1990). This followed four steps: 1) determine the geographic area and population size; 2) estimate the number of problem drinkers and alcohol dependent drinkers (i.e. in-need population); 3) estimate the number of individuals that should be treated in a given year (i.e. demand population); 4) estimate the number of individuals that require service from each component of the treatment system.

Our research was commissioned by the UK Department of Health Policy Research Programme (Brennan et al., 2016). Variations in service provision were known to exist within England and also between UK countries. For example, recent investments in Scotland meant that annual numbers of treatments provided per overall population was approximately 3 times higher than in England (for details of calculation see p241 of (Brennan et al., 2016)). Our research objective was to extend the Rush framework to develop a capacity model - the Specialist Treatment for Alcohol Model (STreAM) version 1.0 – which estimates the numbers of people potentially in need of assessment for and treatment with specialist treatment services for people with alcohol dependence, estimates the numbers of people currently accessing those services, and quantifies the effects of changing specialist treatment access rates in England.

The methods to estimate Local Authority (LA) prevalence of alcohol dependence are reported in detail elsewhere (see chapter 4 of(Brennan et al., 2016)). Our approach extended that of the 2004 ANARP study (Drummond et al., 2005). ANARP focussed on levels of alcohol use, measured using Alcohol Use Disorders Identification Test (AUDIT) score categories(Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). Extending this, we developed statistical models following three steps. Step 1 used the APMS - Adult Psychiatric Morbidity Survey 2007 (McManus, Meltzer, Brugha, Bebbington, & Jenkins, 2009). We developed a regression model of the probability that an individual has AUDIT score in one of 4 bands (AUDIT 0-7, 8-15, 16 to 19, 20+). Covariates were age, gender, Index of Multiple Deprivation (IMD) quintile, and the rate of person specific hospital admissions with a diagnosis code of alcohol dependence (ICD-10 codes F10.2, F10.3, F10.4, F10.5, or F10.6 either as a primary or secondary diagnosis). Step 2 used the APMS to model the probability that the Severity Of Alcohol Dependence Questionnaire (SADQ(Stockwell, Hodgson, Edwards, Taylor, & Rankin, 1979)) is in one of four bands (0-3, 4-15, 16-30, 31+) –with the same covariates as step 1 plus additionally the AUDIT band (0-7, 8-15, 16-19, 20+). We then defined people who are ‘potentially in need of assessment and specialist treatment for alcohol dependence’ as those with an AUDIT score 20 +, or, those with a score of AUDIT 16 to 19 and a score of 16+ on SADQ. We also defined three severity subgroups based on SADQ 4-15 (mild), SADQ 16-30 (moderate) and SADQ 31+ (severe), and separated into gender and 4 age groups (18-24, 25-34, 35-54, 55+). Step 3 made a final adjustment for the estimated number of homeless people, using data on people registered as homeless in each local authority(Government Statistical Datasets) and evidence on the proportion of homeless people with alcohol dependence(Gill, Meltzer, Hinds, & Petticrew, 1996). Throughout this paper we use an abbreviation for this population of interest for our modelling – the people who are 'potentially in need of assessment and specialist treatment for alcohol dependence' – PINASTFAD. The PINASTFAD prevalence for a particular geographical area is therefore defined as the estimated number people who are PINASTFAD divided by the adult (18+) population for that geography. We estimated PINASTFAD prevalence for England and for each of the 151 Upper Tier Local Authorities, with results showing 7 fold variation (chapter 4 of (Brennan et al., 2016)).

The National Drug Treatment Monitoring System (NDTMS), which provides data on clients' specialist treatment for alcohol dependence, was then used to define and quantify Specialist Treatment Access Rates (see chapters 5 & 6 of(Brennan et al., 2016)). The NDTMS is a national administrative database which records data on clients' specialist alcohol treatment. 'Treatment journeys' are defined by linking together a client's several structured treatment episodes if they overlap in time or are separated by fewer than 22 days between discharge and next treatment start date. For example, a client might spend some time in an inpatient facility together with community support soon afterwards. We define and use two main Specialist Treatment Access Rates. The denominator in each case is the no. of people who are PINASTFAD. The first rate used in the model is the Starting Specialist Treatment Access Rate, defined with the numerator as the no. of people who have a start date for their treatment journey during the NHS administrative year e.g. between 1st April 2013 and 31st March 2014. If the same person starts two different treatment journeys (e.g. one in April and another separate one later in December), this person is counted only once in this calculation. The second rate used is the Experiencing Specialist Treatment Access Rate, defined with the numerator as the no. of people who experience contact with specialist treatment at any time during 1st April 2013 to 31st March 2014 i.e. including people whose episode started before but ended after 1st April 2013. Again, if a person experiences two different treatment journeys, he or she is counted only once. We separate analyses of Specialist Access Treatment Rates by gender and 4 age groups (18-24, 25-34, 35-54, 55+). We also define three severity subgroups using NDTMS. Unfortunately, NDTMS does not record either AUDIT or SADQ. We defined severity subgroups using the data collected in the NDTMS at the beginning of structured treatment i.e. 'what was the number of units you consumed in a typical drinking day in the previous 28 days?'. We defined 3 severity bands using 0-15 units, 16-30, and 31+ units. The results of these Specialist Treatment Access Rate calculations showed substantial variations, with an 11-fold variation across Local Authorities (reported in chapter 6 of(Brennan et al., 2016)).

This article describes the Specialist Treatment for Alcohol Model (STreAM) version 1.0, which estimates the potential impact of changing Specialist Treatment Access Rates from current levels, either at England or at Local Authority level. We describe the model structure, its inputs and the evidence upon which they are based. We then demonstrate the model's functionality and outputs using an illustrative case study showing the potential impact of five scenarios for changing Specialist Treatment Access Rates in one exemplar Local Authority (Leeds).

## Methods

### Model Overview

The STreAM model examines, for a particular local authority geographical area, the overall adult population and the dynamics of numbers of people who are 'potentially in need of assessment and specialist treatment for alcohol dependence' – PINASTFAD. For most of the model, simple arithmetic is used. So the numbers of PINASTFAD people in a future period equals the current numbers, plus new people becoming PINASTFAD minus the people who stop being PINASTFAD. This is all calculated by examining the numbers of people receiving specialist treatment, successful treatment completion rates, natural remission without treatment, and relapse rates after earlier successful treatment. The model also has inputs for general population demographics, mortality rates, increased mortality risk for people who have alcohol dependence, and ageing effects including new 18-19 year olds entering the model each year. In addition to the numbers of people, the model also examines resources required to treat clients in different settings (community, residential and inpatient), and the costs of commissioning such services.

### Basic Input Data on the Potentially In need Population

The adult population structure for a Local Authority is obtained from national population estimates (https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates Accessed 27th March 2018). The methods to estimate the numbers of people who are 'potentially in need of assessment and specialist treatment for alcohol dependence' – PINASTFAD were summarised in the introduction and are reported in detail elsewhere (chapter 4 of(Brennan et al., 2016)). Table 1 shows the population of just over 600,000 adults and the estimated numbers of people who are PINASTFAD (14,581, so an overall prevalence rate of 2.43%) for our exemplar LA as well as the breakdown by age / gender / severity.

### Data on Current Specialist Treatments and Percent Successful Completion Rates

Table 1 also shows the summary baseline NDTMS data for our exemplar LA, with a total of 1580 individuals starting a new treatment journey, meaning that the Starting Specialist Treatment Access Rate i.e. the proportion of the people who are PINASTFAD gaining treatment access was overall 10.84%. This varies substantially by age / gender / severity group. Chapter 5 of (Brennan et al., 2016) and its appendices detail the specification of NDTMS analyses used.

In the model, clients currently treated in the LA are classified into one of 22 different pathways, which are defined using NDTMS data on setting (community, residential, inpatient), type of treatment (psychosocial only, use of withdrawal and or relapse prevention pharmacotherapy) and other factors (detailed definitions are in section 5.3 of (Brennan et al., 2016)**Error! Reference source not found.**. Here, we report results in which these 22 pathways are aggregated into 4 groups: community-based psychosocial treatment only, community-based psychosocial treatment with pharmacotherapy for withdrawal support and/or relapse prevention, residential treatment, and inpatient treatment. Section E of Table 1 shows the proportion of the treatment journeys undertaken within each of these 4 groups and compares our exemplar LA with the national average – showing lower use of psychosocial only pathways, a greater use of community based pharmacological treatment, more residential based and less inpatient based care than the national average.

NDTMS records 6 different treatment outcomes as follows: successful completion of treatment journey with abstinence, successful completion of treatment journey with moderated non-problematic drinking, re-treatment within 6 months, drop out, transfers to other service or taken into custody. Section F of Table 1 shows the treatment outcomes for our exemplar LA versus the national average – showing higher rates of success with moderated non-problematic drinking and lower dropout before treatment completion rates.

**Modelling Natural Remission without Specialist Treatment**

Table 2 shows the model input parameters affecting the dynamics of prevalence.

Evidence on natural remission comes from the long term US NESARC studies (Table 2 Part A). We differentiate remission to becoming an abstainer (26%) from remission to drinking at moderate levels (74%) (see Table 1 of (Dawson, Li, Chou, & Grant, 2009)). We estimate an overall average remission rate of 9.1% per annum from NESARC (given 1172 clients dependent at baseline, three years later there were 76 in abstinent remission plus 216 in non-abstinent remission). Evidence that remission rates are lower for older ages (Table 4 of (Dawson et al., 2006)) is used to estimate a relative hazard of remission by age group, 1.36 for 18-24, 1.1 for 25-34, 0.85 for 35-54, 0.69 for 55+, and hence our estimated remission rates by age are 12%, 10%, 8% and 6% respectively. We were unable to identify differential remission rates for different severity of dependence groups and have assumed they are equal for mild, moderate, severe and complex needs groups.

**Modelling Relapse after Specialist Treatment**

Table 2 Part B shows relapse rates for formerly dependent current abstainers and formerly dependent current moderate drinkers. We used a previously published statistical model of NESARC data (see Table 4 of (Dawson, Goldstein, & Grant, 2007)), which predicts recurrence of DSM alcohol dependence conditional on age and current drinking status. From this we derived single year age band probabilities of relapse, and then averaged these into the 4 age groups in our model. We were unable to find relapse evidence by severity of dependence and so assume that the proportion of relapsed people flowing into each dependence severity group is pro rata to the baseline proportion of people in mild, moderate, severe, and complex needs from our prevalence estimates (i.e. specific to each LA).

There is no directly available data on the number of people in the formerly alcohol dependent state at the start of the model run. We estimate this as follows. We do have (a) the baseline prevalence estimates of alcohol dependence according to AUDIT/ SADQ (**Table 1**), and (b) our literature derived relapse and remission rates (Table 2). We use both of these together to derive the size of the former dependent groups making one further assumption. We assume that the relative size of the dependent and formerly dependent groups can only change via relapse and remission, and that they are in equilibrium. We then calculate the size of the formerly-dependent groups such that when relapse/remission rates are applied, the numbers leaving the dependent group and transitioning to formerly dependent is exactly equal to the numbers entering the dependent group from the formerly dependent group.. This is likely to be a reasonable assumption if prevalence trends are gradual and if we are looking ahead a small number of years.

**Modelling New Incidence, Ageing and Mortality each year**

To account for new incidence and ageing, as each year is modelled, a new set of 18-19 year olds prevalent with the same rate of alcohol dependence as the subgroup of 18-24 year olds at baseline (Table **1** Part B) is incorporated. Some people also age into the next age group cohort each year e.g. 1 /10$^{th}$ of the people in the 25-34 age subgroup transfer to the 35-54 subgroup every year.

Mortality rates for the general population in each age/gender group are calculated using 2012 ONS Death Registrations (Statistics, 2013) and population estimates. To adjust mortality for current alcohol dependence we use German evidence that annualized death rates given dependence are 4.6-fold higher for women and 1.9-fold higher for men (John et al., 2013). To estimate mortality in formerly alcohol dependent people, we use a meta-analysis showing an odds ratio for mortality of 0.35 for abstainers compared to continued heavy drinking in alcohol use disorders (Figure 2 of (Roerecke, Gual, & Rehm, 2013)), and an odds ratio for mortality of 0.61 for those still drinking but with reduced alcohol consumption and abstainers excluded (Figure 3 of (Roerecke et al., 2013)).

**Method to Calculate Next Year PINASTFAD Prevalence using Modifiable Model Parameters**

Integrating the parameters described above, we model the dynamics of future prevalence with a simple arithmetic process. Prevalence of dependence in the next period is basically the prevalence now, minus those who achieve stable abstinence/moderated non-problematic drinking following treatment, minus also the proportion of people who achieve natural remission, plus the number of people who relapse from their state of former dependence, minus the number in the cohort who died. This is done for 8 age/gender subgroups, with an adjustment in the youngest age band to account for new 18-19 year olds each year.

Three main modifiable parameters are used to develop what-if scenarios. The first is the Starting Specialist Treatment Access Rate which could be increased or decreased by the user. Calculations are done on a weekly basis (52 weeks equals one year). The number of people entering treatment each week is calculated from the user input annual Starting Specialist Treatment Access Rate divided by 52 (the default being the 2013/14 baseline Starting Specialist Treatment Access Rate for the LA modelled). The second set of modifiable parameters are the proportions of people assigned to the 22 different pathways (default being calculated based on 2013/14 assignments for the LA modelled). The third modifiable parameters concern the proportions achieving different outcomes (successful completion of treatment journey with abstinence, dropout etc.), with the default being the national average outcome percentages for each pathway.

**Modelling Impact on Future System Capacity required using duration of treatment journeys data**

Our study also examined the capacity requirements within the system in terms of numbers of people in contact with community based services at any one time and numbers of residential and inpatient places required at any one time. To convert estimates of the numbers of people starting treatment each week into numbers of people in contact at any one time, the model uses information on national average duration of treatment by 3 severity subgroups (using 'number of units consumed in typical drinking day in previous 28 days'), by the 22 pathways and by the 6 different treatment outcomes. As an example, people with 0-15 units per typical drinking day at baseline, who access pathway number 1 'community psychosocial only treatment', and achieve an outcome of 'successful completion of treatment journey with moderated non-problematic drinking', have an average treatment journey duration calculated from NDTMS of 19 weeks. So, within the model, if say people experiencing this path enter community psychosocial only treatment in week 20 of the financial year, then we model them as leaving the treatment system in week 39. At that point these people enter the 'former dependent with current moderate non-problematic drinking' state within the model. A second more complicated example is people with more than 30 units per typical drinking day at baseline, who access pathway number 11 in the model, i.e. 'Inpatient assisted withdrawal followed by community psychosocial and pharmacological relapse prevention', and achieve an outcome of 'successful completion of treatment journey with abstinence'. Analysis of NDTMS shows their average treatment journey duration to be 26 weeks community based treatment plus 2 weeks inpatient treatment. So, if such people enter treatment in week 20 of the model, they will leave the system and enter the 'former dependent and abstaining drinking' state within the model in week 48.

The model undertakes calculations like the examples above each week of the financial year for all 3 severity subgroups (0-15, 16-30 and 31+ units), all 22 pathways, and all 6 outcome combinations for each week. Summing these calculations up, the model then provides three key output measures of required capacity:- numbers of community based clients required to be treated weekly, numbers of residential places required, and numbers of inpatient places required.

**Unit Costs Data for Components of Specialist Treatment and General NHS Care**

Finally, our study examined costs. There is no national dataset for commissioning costs of specialist treatment for alcohol dependence. Instead, we updated recent estimates of costs from the NICE CG115 guidelines (National Institute for Health and Clinical Excellence, 2011), to quantify costs per week for each component (see Table **3** and Appendix 8.3 on p249 of (Brennan et al., 2016) for full methods). Within the model calculations, these weekly costs are multiplied by national average durations observed in the NDTMS for each severity-pathway-outcome combination. A user can overwrite default cost inputs and durations if more accurate local costings are available.

We also examine a broad estimate of the cost impact of changes in prevalence of alcohol dependence over time on general NHS care. We use an annual estimate of additional general NHS care for a person dependent on alcohol of £1,800 per person based on NICE guidelines (National Institute for Health and Clinical Excellence, 2011), and assume that this will reduce to zero when people move from alcohol dependence a state of former alcohol dependence. Discounting of future costs is undertaken at 3.5% per annum and the model time horizon in these analyses is 5 years.

**Approach to What-If Analysis**

The model has been constructed in Microsoft EXCEL with VBa macros. To examine the impact of scenarios, the STreAM model allows the user to make two main changes to model inputs. The user can alter Specialist Treatment Access Rates from their current levels. This can be done at the whole population level or for specific age / gender subgroups. The user can also alter the percentages of people assigned to each of the 22 different pathways. The research team is able to adapt and develop the model and undertake more 'under the hood' changes to any of the input variables.

When running a scenario analysis, the model is usually run so that it compares the proposed new Specialist Treatment Access Rates with 'same as last year's Specialist Treatment Access Rates and percentage assignment to pathways'.

The model outputs analyse the difference between the two scenarios modelled. These include the differences in the following outputs: numbers of people who are PINASTFAD, numbers of people successfully treated, numbers of deaths, specialist treatment costs, general NHS costs, and three required capacity outputs - number of people in contact with community services at any one time, numbers of residential places and numbers of inpatient places.

**Illustrative Exemplar Case Study**

The exemplar analyses in this paper are for the city of Leeds LA. It is important to emphasise that the scenarios examined are entirely illustrative and have not been discussed with local authority commissioners or service providers in that area. We examine four illustrative scenarios for changing Specialist Treatment Access Rates, each compared against a base senario of keeping rates at the same level as 2013/14:

A. No change
B. Set Specialist Treatment Access Rate for each age/gender subgroup to be at the 70th percentile level nationally (i.e. only 30% of LAs have a higher Specialist Treatment Access Rate for that age/gender subgroup)
C. Increase Specialist Treatment Access Rate by a factor of +25%
D. Increase access rates to approximately the levels currently achieved in Scotland
E. Reduce Specialist Treatment Access Rate, by a factor of -25%

## Results

**Detailed Analysis for Scenario B (achieve 70th percentile access rates) versus Scenario A (No Change in access rates)**

Table 4-1 shows the input Specialist Treatment Access Rates for scenario B, the 70th percentile nationally for each age/gender group compared to the most recent year alongside those for scenario A. Scenario B implies a slightly higher number of new journeys overall - 1713 versus 1580, an extra 133 people per annum starting treatment (+8.4%), which would move this Local Authority from being ranked 64th (of 151) up to being ranked 50th for its Specialist Treatment Access Rates. The input Specialist Treatment Access Rates vary by age/gender for this scenario and the increases in access are highest for 18-24 males, 18-24 females, and males 55+, with small decreases in access implied for 35-44 year old males and females.

Table 4-2 shows that the impact of this on the numbers of people who are PINASTFAD. By the end of 5 years this is estimated to be 191 lower for scenario B than it would be under scenario A. This is a small difference, approximately a 1.3% reduction of the baseline 14,851 numbers of people who are PINASTFAD. The implied prevalence of PINASTFAD per total adult population in 5 years' time would be marginally lower at 2.23% under scenario B versus 2.26% under scenario A. Most of the estimated lower numbers occurred in the mild dependence (-102) and moderate dependence (-72) subgroups.

Table 4-3 shows a summary of the outcomes for people receiving specialist treatment. In total over 5 years, an additional 449 people are estimated to exit treatment under scenario B compared to scenario A. This includes 282 additional successful treatments, of which 171 are successful completion of treatment journey with abstinence, and 111 successful completion of treatment journey with moderated non-problematic drinking. There is also a small estimated impact on mortality, with 8 fewer deaths over 5 years, all of which are in the male 55+ subgroup (not shown in Table).

Figure 1A shows that the overall prevalence of people who are PINASTFAD is estimated to be falling under scenario A, and falling marginally more under scenario B. Figure 1B shows that the difference in prevalence between scenario B and scenario A is larger for males 55+ than for females 55+. This reflects the inputs for Scenario B in that Specialist Treatment Access Rates were increased more for males 55+ than females 55+ and it also explains why the modelled reductions in mortality are estimated to be occurring mostly in males 55+.

Table 4-4 shows the implied difference in impact on capacity required. At year 5, we estimate the additional number of people receiving community based services care at any one time under is 31 more for scenario B than for scenario A. Tables in the Supplemental Online Appendix show that, in year 5, the number of people receiving community based services care at any one time under scenario B is 488. The additional capacity for residential based care is around 1 extra place on a typical day under scenario B compared to scenario A (13.3 versus 12.4 residential places). Very little additional capacity would be required in the inpatient service (0.5 inpatient places under both scenario B and A).

Table 5 shows the differences between scenario B and scenario A for the estimated number of former dependent drinkers in the population. By the end of year 5, this shows an additional 199 people are in the former dependent group, with 145 of these abstaining. Most of the differences are in the males aged 18-24 (46 of them), aged 25-24 (68 of them) and 55+ (63 of them).

Finally, our broad analysis of financial cost impact estimates that the extra (discounted) cost of providing the additional specialist treatment services in scenario B compared to scenario A is around £2¼m cumulatively over 5 years. This would be somewhat offset by general NHS cost savings of approximately £1m due to lower numbers of people with alcohol dependence.

**Comparison f Results across scenarios A to E**

Figure 2 compares scenarios B, C, D and E all against the no change scenario A. A detailed results table for each scenario is given in the Supplemental Online Appendix.

Figure 2-1 shows the estimated impact on the numbers of people who are PINASTFAD in 5 years' time, with scenario B achieving a reduction of 191, C (a 25% increase in Specialist Treatment Access Rates) a reduction of 477, whilst D (increasing to approximately Scottish rates) results in a reduction of almost 2800. Scenario E (a reduction i.e. -25% change in Specialist Treatment Access Rates) would cause an estimated increase in numbers of people potentially in need of treatment for alcohol dependence of +533. This relative scale of impact is reflected in the other model outputs. Mortality averted over five years is almost 10 times higher for scenario D (73 fewer deaths) than scenario B (8 fewer), whilst scenario E is estimated to result in an increase in mortality (+15 deaths).

In terms of capacity, comparing scenario D versus A, the additional number of people receiving community based services care at any one time is estimated to be around 370 (a substantial larger difference than that of 31 people for scenario B versus A). Similarly, the additional capacity for residential and inpatient based care (combined) is around 11 extra places on a typical day under scenario D (which would be almost double the current baseline level of 12.9 people in residential or inpatient care). Scenario E would imply a change (reduction) in capacity requirements of around minus 84 community places and minus 2 inpatient / residential places.

Finally, the broad cost analyses show a similar pattern. The cumulative additional cost of specialist treatment over 5 years is almost +£29m for scenario D versus A as compared to £2.1m for scenario B versus A, and scenario E would show a saving in specialist treatment costs of around -£5.5m. The indicative estimated NHS costs averted due to reduced prevalence of alcohol dependence would also be substantially larger under scenario D (around -£16m for D versus A, compared to -£1m for B versus A) and there would be a rise in general NHS costs under scenario E of an estimated +£2.8m.

## Discussion

This study develops a new Specialist Treatment for Alcohol Model (STreAM) framework to examine the impact of changing Specialist Treatment Access Rates and treatment pathway assignment for people who are potentially in need of assessment and specialist treatment for alcohol dependence. The study incorporates evidence from English national surveys and sources of routine data wherever possible, particularly using the Adult Psychiatric Morbidity Survey and the National Drug Treatment Monitoring System, and combines this with published evidence on natural remission and relapse after treatment. The new model extends the Rush et al.(Rush, 1990) framework and allows Local Authorities to consider commissioning decisions and their potential impact on outcomes. The outcomes examined are:- future prevalence of alcohol dependence, service capacity required, mortality, commissioning costs for structured treatment, and NHS costs averted if future alcohol dependence prevalence can be reduced.

There is an important issue to consider when interpreting results. It is acknowledged that the model default rates for relapse and natural remission are based on literature estimates from long term US studies because neither national nor local authority level UK data are available on these parameters. One implication of this is that the model outputs for the no change scenario do not produce a steady state 'flat line' for LA prevalence. In a sense the model is not a really a prediction of what will happen in our local LA under no change, because we cannot be sure whether the natural remission and post treatment relapse rates used from US studies are reflective of this particular LA in England at this time. It is instructive to think of model outputs in terms of what-if scenarios i.e. "what if under scenario A there is no change in Specialist Treatment Access Rates and the US remission and relapse rates were to apply to this LA?", as compared with "what if under scenario B the Specialist Treatment Access Rates were at the 70$^{th}$ percentile nationally and the US remission and relapse rates were to apply to this LA?" A second implication is that, as researchers, we feel more confident about the results in terms of differences between the scenarios (e.g. Scenario B minus

Scenario A giving 191 fewer people who are PINASTFAD in 5 years' time), than we do about the absolute levels of scenario A or scenario B results in the model.

There are some limitations to evidence and our analysis. The modelling of health benefits is relatively simple in that it uses population average death rates by age and gender combined with a relative risk of mortality for two subgroups - people are in the alcohol dependent state and people who are in the formerly alcohol dependent state. It would be possible in principle, though a substantial research task, to link together this work with that of the Sheffield Alcohol Policy model (Brennan et al. 2015) which takes a wider public health perspective of the whole population and models 43 different health conditions Secondly, our modelling does not include some important impacts such as reductions in crime, the reductions in harm to others including children or partners of people who are alcohol dependent, and reductions in social care costs for children or and adults. Finally, our present analysis does not undertake a cost per quality adjusted life years gained analysis because we have not modelled the disease profile or health related quality of life losses for people with alcohol dependence.

Several research priorities for have emerged as important through consideration of the evidence gaps. Firstly, since the APMS is only undertaken every 7 years. The estimation of prevalence of people who are PINASTFAD can become somewhat out of date. At present the model simply starts with the latest year's estimated prevalence, rather than utilising trend evidence. More frequent collection of estimates of alcohol dependence prevalence would be useful. Secondly, the NDTMS does not collect any information routinely on the severity of alcohol dependence, other than the number of units drunk on a typical drinking day in the last month. We would strongly advise incorporation of the AUDIT and the SADQ into NDTMS, so that benchmarking across local authorities in relation to the Specialist Treatment Access rates for severity subgroups can be undertaken. Third, despite there being considerable evidence for the effectiveness of specialist treatments for alcohol dependence, it is less clear what the wider natural history of alcohol dependence looks like in England. For the modelling of relapse rates after specialist treatment, and the natural remission of people who are untreated, we have had to rely on published literature estimates from the long term U.S. studies. It would be useful if research were undertaken in England to attempt to quantify both natural remission and relapse rates.

Finally, we have considered the generalisability of this modelling framework to other countries. This would be possible if the datasets on prevalence of alcohol dependence and access to Specialist Treatment in a particular country are very similar to those in England. We would advise that the international research community consider making recommendations globally on a standardised framework for estimating prevalence of people in need of assessment and specialist treatment for alcohol dependence. We would further advise making recommendations to produce standardised definition of Specialist Treatment Access Rates which could also prove powerful for international benchmarking.

In conclusion, this new STreAM model provides a framework and quantitative methodology for analysing the potential impact of increasing access to specialist treatment for alcohol dependence in England and we hope it will be useful to policy makers in England and adaptable globally.

**Tables and Figures**

## Table 1 Summary of key model inputs for one Exemplar Local Authority

| | All | Male | | | | Female | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 18-24 | 25-34 | 35-54 | 55+ | 18-24 | 25-34 | 35-54 | 55+ | |
| **A:** Population age 18 + | | | | | | | | | | |
| | 600,830 | 49,070 | 56,789 | 97,948 | | 87,621 | 51,295 | 56,882 | 98,356 | 102 |
| **B:** Estimated numbers of people who are potentially in need of assessment and specialist treatment for alcohol dependence ('**PINASTFAD'**) | | | | | | | | | | |
| Total | 14581 | 3533 | 3982 | 3052 | 1121 | 1555 | 443 | 700 | 197 | |
| Mild[a] | 7572 | 1591 | 1904 | 1664 | 738 | 805 | 284 | 444 | 142 | |
| Moderate[b] | 5626 | 1540 | 1671 | 1152 | 314 | 607 | 117 | 200 | 25 | |
| Severe[c] | 1145 | 372 | 377 | 206 | 39 | 113 | 12 | 26 | 0 | |
| Severe & Complex[c] | 238 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | |
| **C:** Number individuals starting a new treatment journey 2013/14 (NDTMS) | | | | | | | | | | |
| Total | 1580 | 48 | 214 | 612 | 139 | 36 | 126 | 302 | 103 | |
| 0-15 units/week[e] | 550 | 17 | 76 | 144 | 39 | 16 | 50 | 135 | 73 | |
| 16-30 units/week[f] | 426 | 16 | 61 | 185 | 50 | 8 | 18 | 73 | 15 | |
| 31+ units/week[g] | 208 | 5 | 26 | 108 | 23 | 0 | 21 | 20 | 5 | |
| Complex needs[h] | 396 | 10 | 51 | 175 | 27 | 12 | 37 | 74 | 10 | |
| **D:** Starting Specialist Treatment Access Rate (no. of new journeys divided by no. of people who are PINASTFAD) - % | | | | | | | | | | |
| Total | 10.84 | 1.36 | 5.37 | 20.05 | 12.40 | 2.32 | 28.46 | 43.16 | 52.37 | |
| Mild (e/a) | 7.26 | 1.07 | 3.99 | 8.65 | 5.28 | 1.99 | 17.61 | 30.41 | 51.41 | |
| Moderate & Severe (f+g)/(b+c) | 9.36 | 1.10 | 4.25 | 21.58 | 20.68 | 1.11 | 30.23 | 41.15 | 80.00 | |
| Moderate & Severe + complex (f+g+h)/(b+c+d) | 14.70 | 1.60 | 6.64 | 33.73 | 26.13 | 2.67 | 47.89 | 65.31 | 54.85 | |

**E:** Completed journeys according to pathway (4 broad categories) - %

| | Community Psychosocial | Community Pharmacology | Residential | In-patient | Total |
|---|---|---|---|---|---|
| Exemplar Local Auth | 43 | 49 | 7 | 1 | 100 |
| National | 77 | 14 | 2 | 7 | 100 |
| Difference | -34 | 35 | 5 | -6 | |

**F:** Completed journeys according to outcome - %

| | All success | Success (abstain) | Success (non-problematic drinking | Dropout | Transfer | Died | Total |
|---|---|---|---|---|---|---|---|
| Exemplar Local Auth | 61 | 35 | 26 | 32 | 6 | 1 | 100 |
| National | 47 | 33 | 14 | 45 | 6 | 1 | 100 |
| Difference | 14 | 2 | 12 | -13 | 0 | 0 | |

### Table 2 Model parameters affecting the dynamics of prevalence over time

| Table 2 PART A: Natural Remission Parameters Derived from NESARC Study | | | | | | | |
|---|---|---|---|---|---|---|---|
| Gender | Age Band | **Prob. entering subgroup given remission** | | **Annual natural remission rates (without treatment)** | | | |
| | | *Former AD Abstainer* | *Former AD Drinker* | *Mild AD* | *Moderate AD* | *Severe AD* | *Complex Needs* |
| Male | 18 to 24 | 26% | 74% | 12% | 12% | 12% | 12% |
| | 25 to 34 | 26% | 74% | 10% | 10% | 10% | 10% |
| | 35 to 54 | 26% | 74% | 8% | 8% | 8% | 8% |
| | 55 + | 26% | 74% | 6% | 6% | 6% | 6% |
| Female | 18 to 24 | 26% | 74% | 12% | 12% | 12% | 12% |
| | 25 to 34 | 26% | 74% | 10% | 10% | 10% | 10% |
| | 35 to 54 | 26% | 74% | 8% | 8% | 8% | 8% |
| | 55 + | 26% | 74% | 6% | 6% | 6% | 6% |

| Table 2 PART B: Relapse parameters | | | | | | | |
|---|---|---|---|---|---|---|---|
| Gender | Age Band | **Annual relapse rate to alcohol dependence from former dependence** | | **Probability of entering each subgroup given relapse (Assumed the same %'s as baseline prevalence for the example Local Authority)** | | | |
| | | *Former AD Abstainer* | *Former AD Drinker* | *Mild AD* | *Moderate AD* | *Severe AD* | *Complex Needs* |
| Male | 18 to 24 | 3.4% | 12.2% | 45.0% | 43.6% | 10.5% | 0.8% |
| | 25 to 34 | 2.8% | 10.2% | 47.8% | 42.0% | 9.5% | 0.7% |
| | 35 to 54 | 1.9% | 7.4% | 54.5% | 37.7% | 6.8% | 1.0% |
| | 55 + | 1.0% | 4.5% | 65.9% | 28.0% | 3.5% | 2.6% |
| Female | 18 to 24 | 3.4% | 12.2% | 51.8% | 39.0% | 7.3% | 1.9% |
| | 25 to 34 | 2.8% | 10.2% | 64.2% | 26.4% | 2.7% | 6.7% |
| | 35 to 54 | 1.9% | 7.4% | 63.5% | 28.6% | 3.7% | 4.2% |
| | 55 + | 1.0% | 4.5% | 72.2% | 12.7% | 0.0% | 15.1% |

| Table 2 PART C: Mortality Rates Per 1000 Population per Annum parameters | | | | | |
|---|---|---|---|---|---|
| Gender | Age Band | *Never Alcohol Dependent* | *Former AD Abstainer* | *Former AD Drinker* | *Currently Alcohol Dependent* |
| Male | 18-24 | 0.00048 | 0.00047 | 0.00083 | 0.00135 |
| | 25-34 | 0.00066 | 0.00066 | 0.00116 | 0.00190 |
| | 35-54 | 0.00220 | 0.00228 | 0.00397 | 0.00650 |
| | 55+ | 0.02897 | 0.03262 | 0.05551 | 0.08789 |
| Female | 18-24 | 0.00019 | 0.00047 | 0.00082 | 0.00134 |
| | 25-34 | 0.00034 | 0.00083 | 0.00144 | 0.00235 |
| | 35-54 | 0.00144 | 0.00361 | 0.00627 | 0.01024 |
| | 55+ | 0.02838 | 0.08109 | 0.13330 | 0.20137 |

**Table 3 Costs inputs for the specialist treatment intervention components**

| Intervention Component | Research team's estimated 2013/14 update to NICE CG115 costings (£) | Duration of component as costed in NICE CG115 (weeks) | Implied Weekly Cost (£) | Implied Daily Cost (£) |
|---|---|---|---|---|
| Community Psychosocial | 99.00 | 1.00 | 99.00 | £14.14 |
| Pharmacological interventions for relapse prevention | 505.00 | 52.00 | 9.71 | £1.38 |
| Community Assisted Withdrawal | 363.00 | 1.43 | 254.10 | £36.40 |
| Intensive Community Programme | 2442.00 | 3.00 | 814.00 | £116.29 |
| Residential Assisted Withdrawal | 5975.00 | 2.50 | 2390.00 | £341.43 |
| Residential Rehabilitation | 633.00 | 1.00 | 633.00 | £90.43 |
| Comprehensive assessment | 454.00 | 1.00 | 454.00 | £454 |

### Table 4 Impact of Scenario B - achieving 70th percentile of access rates nationally

Part 4-1: Change in no. of journeys under scenario B: achieve 70th percentile of access rates nationally

| | | Original Starting Specialist Treatment Access Rate | 70th %ile Starting Specialist Treatment Access Rate | No of people PINASTFAD By Age / Gender at baseline | Original New Journey Numbers per annum | Implied New Journeys if 70th %ile Numbers per annum |
|---|---|---|---|---|---|---|
| Male | 18-24 | 1.4% | 2.3% | 3533 | 48 | 80 |
| Male | 25-34 | 5.4% | 6.3% | 3982 | 214 | 251 |
| Male | 35-54 | 20.1% | 19.1% | 3052 | 612 | 582 |
| Male | 55+ | 12.4% | 16.3% | 1121 | 139 | 183 |
| | | | | | | |
| Female | 1824 | 2.3% | 3.5% | 1555 | 36 | 54 |
| Female | 18-24 | 28.5% | 28.2% | 443 | 126 | 125 |
| Female | 25-34 | 43.2% | 47.8% | 700 | 302 | 334 |
| Female | 35-54 | 52.4% | 52.3% | 197 | 103 | 103 |
| | | | | | | |
| Total | | | | 14581 | 1580 | 1713 |
| | | | | | | |
| Overall Implied Specialist Treatment Access Rate | | | | | 10.8% | 11.7% |
| Overall Rank out of 151 Local Authorities in England (1 = highest) | | | | | 64 | 50 |
| Overall Implied percentile | | | | | 58th | 67th |

Part 4-2: Impact of scenario B on estimated prevalence of dependence by severity subgroup

*Year on year comparison of Scenario B (achieve 70th percentile Specialist Treatment Access Rates) with Scenario A (no change in Specialist treatment Access Rates)*

*No. of people who are PINASTFAD scenario B minus No. of people who are PINASTFAD scenario A*

| Time point | Alcohol Dependence subgroups Mild | Moderate | Severe | Complex Needs | Total |
|---|---|---|---|---|---|
| Now | 0 | 0 | 0 | 0 | 0 |
| After 1 year | -23 | -15 | -3 | -1 | -42 |
| After 2 years | -51 | -34 | -7 | -2 | -95 |
| After 3 years | -73 | -49 | -10 | -2 | -135 |
| After 4 years | -89 | -62 | -12 | -3 | -166 |
| After 5 years | -102 | -72 | -14 | -3 | -191 |

Part 4-3: Impact of scenario B on number of treatment exits by outcome

*Year on year comparison of Scenario B with Scenario A (treatment exits scenario B - treatment exits scenario A)*

Additional Number of treatment exits by outcome

| | Successfully Completed Treatment (Non problem-atic drinking) | Successfully Completed Treatment (Abstinence) | Transferred | Dropped out | Total |
|---|---|---|---|---|---|
| Now | 0 | 0 | 0 | 0 | 0 |
| After 1 year | 17 | 27 | 4 | 23 | 70 |
| After 2 years | 42 | 66 | 9 | 55 | 173 |
| After 3 years | 66 | 103 | 15 | 86 | 269 |
| After 4 years | 89 | 138 | 20 | 115 | 361 |
| After 5 years | 111 | 172 | 24 | 143 | 450 |

Part 4-4: Change in service capacity requirements on a typical day after five years due to scenario B

| Community Increase | Residential Increase | Inpatient Increase |
|---|---|---|
| 30.9 | 0.9 | 0.0 |

## Figure 1 Example Trends in Modelled Prevalence for Scenario 1 – 70th percentile in each age group versus no change in access rates

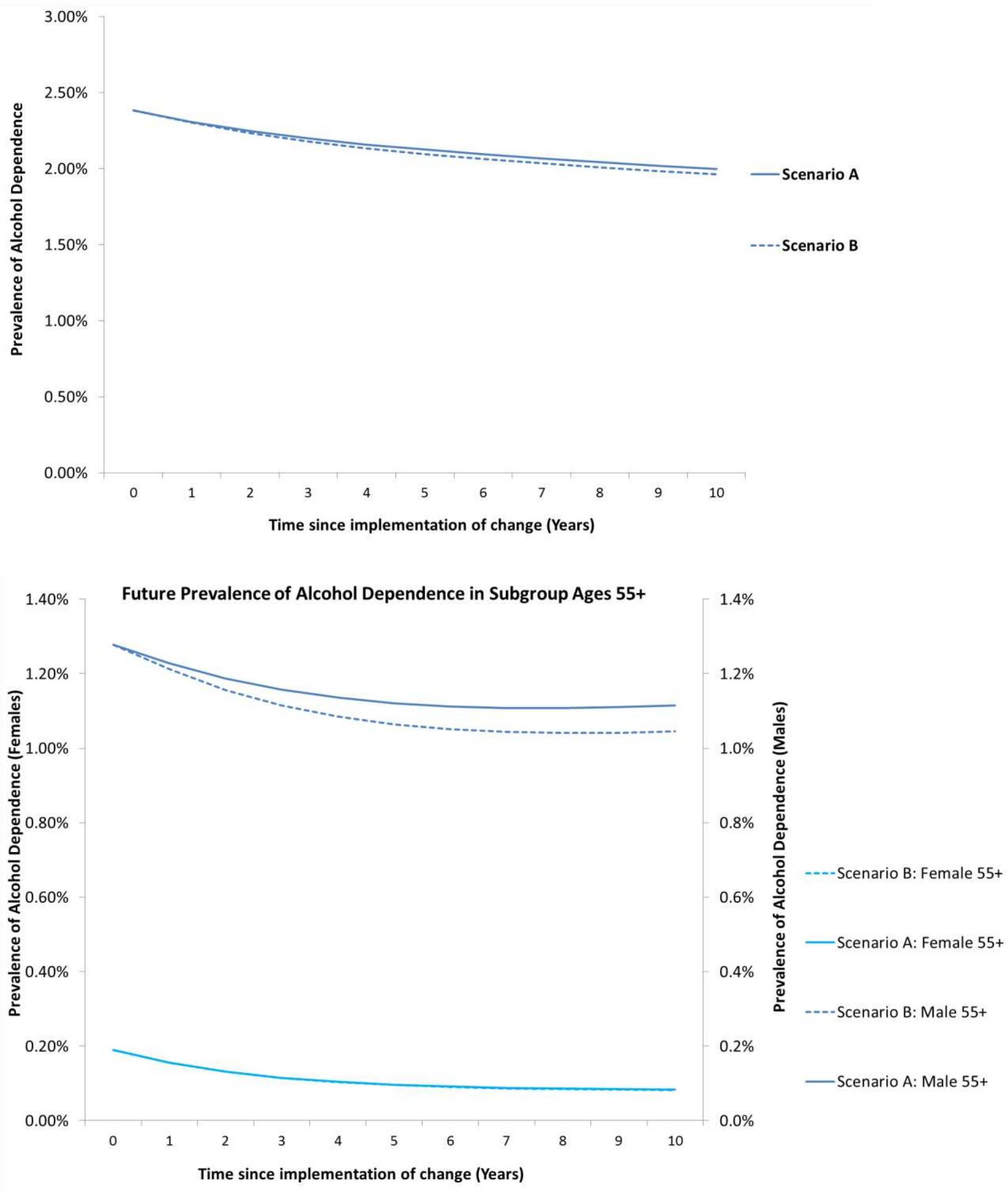
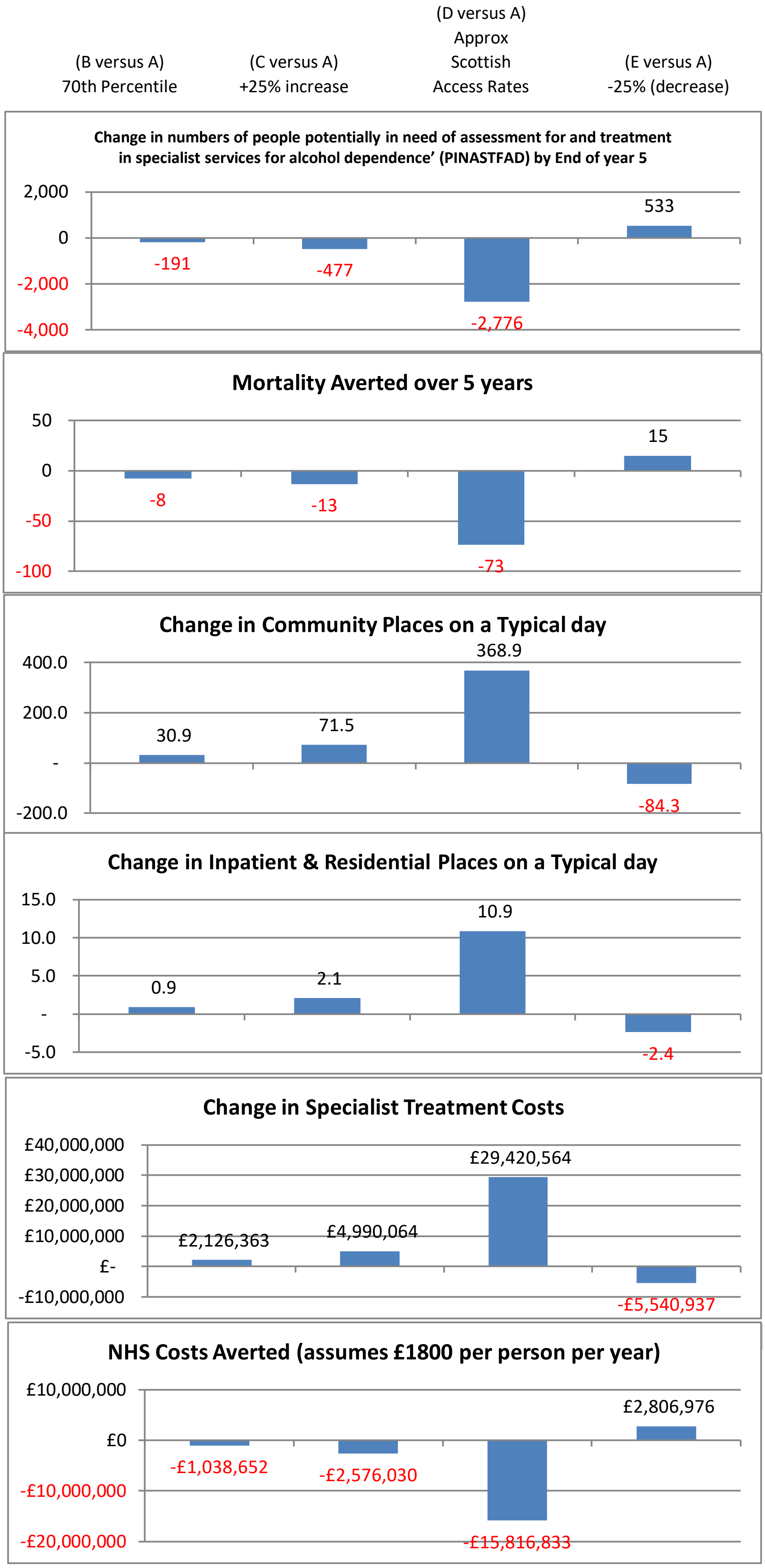


**Table 5: Detailed age-sex breakdown of the difference between B (achieving 70th percentile of access rates nationally), and A (no change in access rates).**

| LEEDS | Baseline | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|
| **Number of people in formerly dependent on alcohol states** | **0** | **43** | **96** | **138** | **171** | **199** |
| Abstainers/Alcohol Free | 0 | 27 | 63 | 93 | 121 | 145 |
| Non problematic drinker | 0 | 16 | 33 | 44 | 51 | 54 |
| | | | | | | |
| Male 18-24 | 0 | 11 | 25 | 34 | 41 | 46 |
| Male 25-34 | 0 | 13 | 31 | 45 | 58 | 68 |
| Male 35-54 | 0 | -8 | -16 | -21 | -24 | -26 |
| Male 55+ | 0 | 14 | 31 | 44 | 54 | 63 |
| Female 18-24 | 0 | 6 | 14 | 19 | 23 | 25 |
| Female 25-34 | 0 | 0 | 1 | 2 | 3 | 4 |
| Female 35-54 | 0 | 6 | 11 | 14 | 16 | 18 |
| Female 55+ | 0 | 0 | 0 | 1 | 1 | 1 |
| | | | | | | |
| | **0** | **-42** | **-95** | **-135** | **-166** | **-191** |
| % prevalence per adult population | 0.00% | -0.01% | -0.02% | -0.02% | -0.03% | -0.03% |
| Numbers estimated In Treatment at 1 April | 2 | 34 | 28 | 23 | 19 | 16 |
| Not in Treatment | -2 | -77 | -122 | -157 | -185 | -207 |
| | | | | | | |
| Male 18-24 | 0 | -11 | -25 | -34 | -41 | -45 |
| Male 25-34 | 0 | -13 | -31 | -45 | -58 | -68 |
| Male 35-54 | 0 | 8 | 16 | 21 | 24 | 26 |
| Male 55+ | 0 | -13 | -29 | -41 | -50 | -56 |
| Female 18-24 | 0 | -6 | -14 | -19 | -23 | -25 |
| Female 25-34 | 0 | -0 | -1 | -2 | -3 | -4 |
| Female 35-54 | 0 | -6 | -11 | -14 | -16 | -18 |
| Female 55+ | 0 | -0 | -0 | -1 | -1 | -1 |
| | | | | | | |
| | | | | | | |
| **LEEDS** | **Baseline** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** |
| Number of people who are PINASTFAD by severity group | | | | | | |
| Mild | 0 | -23 | -52 | -73 | -89 | -102 |
| Moderate | 0 | -15 | -35 | -50 | -62 | -72 |
| Severe | 0 | -3 | -7 | -10 | -12 | -14 |
| Complex | 0 | -1 | -2 | -2 | -3 | -3 |
| | | | | | | |
| **Numbers of Complete Treatment Journeys** | 0 | **73** | **102** | **96** | **92** | **89** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Specialist treatment access rate** | 0 | **0.53%** | **0.77%** | **0.75%** | **0.74%** | **0.74%** |
| | Successful completed | 0 | 45 | 65 | 60 | 58 | 56 |
| | Not Successfully completed | 0 | 28 | 38 | 36 | 34 | 33 |
| | | | | | | | |
| | Male 18-24 | 0 | 21 | 31 | 31 | 30 | 30 |
| | Male 25-34 | 0 | 22 | 33 | 32 | 32 | 31 |
| | Male 35-54 | 0 | -14 | -20 | -19 | -19 | -19 |
| | Male 55+ | 0 | 23 | 32 | 30 | 28 | 27 |
| | Female 18-24 | 0 | 12 | 17 | 17 | 17 | 17 |
| | Female 25-34 | 0 | 0 | -1 | -2 | -2 | -3 |
| | Female 35-54 | 0 | 10 | 11 | 8 | 7 | 6 |
| | Female 55+ | 0 | 0 | 0 | 0 | 0 | -1 |
| **Number of People in Contact with Service on a Typical Day** | | | | | | | |
| | Community | 2.1 | 37.1 | 34.5 | 32.8 | 31.6 | 30.9 |
| | Residential | 0.1 | 1.0 | 1.0 | 0.9 | 0.9 | 0.9 |
| | Inpatient | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

## Figure 2 Comparison of the Impact of Four Different Scenarios for Changing Specialist Treatment Access Rates (versus Scenario A - No change)



**Acknowledgements:** We are grateful for the valuable contribution of our project stakeholder group, including service providers, service users, academics, commissioners and representatives from DH and Public Health England (PHE). We would particularly like to acknowledge the contribution of those local authorities involved in pilot testing the model.  We also thank the Public Health England North West Knowledge Intelligence Team (PHE NW KIT) for their assistance in the provision of Hospital Episode Statistics data, especially Mr Sacha Wyke.

## Supplemental Online Appendix – Detailed Model Results

### Table 6 Model Results for Exemplar LA - Scenario A - No Change in Access Rates

| LEEDS | Baseline | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|
| offsetting ->->->->->->->->->-> | 5 | 57 | 109 | 161 | 213 | 265 |
| **Population** | **601106** | **615,444** | **629,781** | **644,119** | **658,457** | **672,795** |
| | | | | | | |
| **Former Dependents** | **26,368** | **28,075** | **29,682** | **31,216** | **32,693** | **34,123** |
| Abstainers/Alcohol Free | 15,081 | 16,096 | 17,078 | 18,039 | 18,985 | 19,918 |
| Moderate Drinker | 11,286 | 11,979 | 12,603 | 13,176 | 13,708 | 14,205 |
| | | | | | | |
| Male 18-24 | 5957 | 5979 | 5993 | 6003 | 6010 | 6014 |
| Male 25-34 | 6650 | 6933 | 7175 | 7385 | 7567 | 7726 |
| Male 35-54 | 5690 | 6331 | 6936 | 7513 | 8064 | 8592 |
| Male 55+ | 2892 | 3137 | 3395 | 3665 | 3946 | 4237 |
| Female 18-24 | 2622 | 2639 | 2651 | 2659 | 2665 | 2669 |
| Female 25-34 | 746 | 1084 | 1402 | 1697 | 1970 | 2220 |
| Female 35-54 | 1304 | 1420 | 1539 | 1669 | 1812 | 1969 |
| Female 55+ | 508 | 552 | 590 | 624 | 659 | 696 |
| | | | | | | |
| | | | | | | |
| **Prevalence** | **14,576** | **14,430** | **14,374** | **14,379** | **14,427** | **14,505** |
| % prev | 2.42% | 2.34% | 2.28% | 2.23% | 2.19% | 2.16% |
| Estimated In Treatment at 1 April | 1,845 | 1,649 | 1,486 | 1,344 | 1,218 | 1,107 |
| Not in Treatment | 12,731 | 12,781 | 12,888 | 13,035 | 13,209 | 13,398 |
| | | | | | | |
| Male 18-24 | 3,532 | 3,503 | 3,481 | 3,466 | 3,454 | 3,445 |
| Male 25-34 | 3,981 | 3,964 | 3,960 | 3,965 | 3,976 | 3,992 |
| Male 35-54 | 3,050 | 2,996 | 2,973 | 2,970 | 2,983 | 3,007 |
| Male 55+ | 1,120 | 1,103 | 1,093 | 1,091 | 1,095 | 1,104 |
| Female 18-24 | 1,554 | 1,534 | 1,519 | 1,508 | 1,500 | 1,495 |
| Female 25-34 | 445 | 559 | 650 | 723 | 783 | 833 |
| Female 35-54 | 697 | 609 | 559 | 533 | 522 | 520 |
| Female 55+ | 196 | 162 | 140 | 125 | 115 | 108 |
| | | | | | | |
| Mild | 7,568 | 7,398 | 7,299 | 7,248 | 7,233 | 7,243 |
| Moderate | 5,626 | 5,644 | 5,677 | 5,719 | 5,767 | 5,818 |
| Severe | 1,145 | 1,166 | 1,186 | 1,205 | 1,222 | 1,238 |
| Complex | 237 | 221 | 212 | 207 | 205 | 205 |
| | | | | | | |
| | | | | | | |
| **Treatment Journeys** | | **1,181** | **1,177** | **1,198** | **1,229** | **1,266** |
| **% access rate** | | **8.18%** | **8.19%** | **8.33%** | **8.52%** | **8.73%** |
| Successful | | 745 | 742 | 754 | 773 | 797 |
| Not Successful | | 436 | 436 | 444 | 455 | 469 |
| | | | | | | |
| Male 18-24 | | 47 | 47 | 47 | 47 | 47 |
| Male 25-34 | | 199 | 200 | 202 | 204 | 206 |
| Male 35-54 | | 470 | 470 | 477 | 488 | 501 |
| Male 55+ | | 117 | 114 | 113 | 112 | 113 |
| Female 18-24 | | 35 | 35 | 34 | 34 | 34 |
| Female 25-34 | | 95 | 126 | 154 | 177 | 197 |
| Female 35-54 | | 167 | 145 | 136 | 135 | 138 |
| Female 55+ | | 50 | 40 | 34 | 31 | 29 |
| **Number of People in Contact with Service on a Typical Day** | | | | | | |
| Community | 425 | 415 | 421 | 430 | 443 | 457 |
| Residential | 11.0 | 11.0 | 11.3 | 11.6 | 12.0 | 12.5 |
| Inpatient | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |

## Table 7 Model Results for Exemplar LA - Scenario B – Achieve 70th Percentile Access Rates Nationally for each Age/Gender Band

| LEEDS | Baseline | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|
| offsetting ->->->->->->->->-> | 5 | 57 | 109 | 161 | 213 | 265 |
| **Population** | **601106** | **615,444** | **629,781** | **644,119** | **658,457** | **672,795** |
| **Former Dependents** | **26,368** | **28,117** | **29,777** | **31,353** | **32,864** | **34,322** |
| Abstainers/Alcohol Free | 15,081 | 16,123 | 17,141 | 18,133 | 19,105 | 20,063 |
| Moderate Drinker | 11,286 | 11,995 | 12,637 | 13,221 | 13,759 | 14,259 |
| Male 18-24 | 5957 | 5990 | 6018 | 6037 | 6050 | 6060 |
| Male 25-34 | 6650 | 6946 | 7206 | 7430 | 7625 | 7794 |
| Male 35-54 | 5690 | 6323 | 6920 | 7492 | 8040 | 8566 |
| Male 55+ | 2892 | 3151 | 3426 | 3709 | 4000 | 4300 |
| Female 18-24 | 2622 | 2645 | 2665 | 2678 | 2687 | 2694 |
| Female 25-34 | 746 | 1084 | 1402 | 1699 | 1973 | 2224 |
| Female 35-54 | 1304 | 1426 | 1550 | 1683 | 1828 | 1986 |
| Female 55+ | 508 | 552 | 590 | 625 | 660 | 697 |
| **Prevalence** | **14,576** | **14,387** | **14,280** | **14,245** | **14,261** | **14,314** |
| % prev | 2.42% | 2.34% | 2.27% | 2.21% | 2.17% | 2.13% |
| Estimated In Treatment at 1 April | 1,847 | 1,683 | 1,514 | 1,367 | 1,237 | 1,123 |
| Not in Treatment | 12,729 | 12,704 | 12,766 | 12,878 | 13,023 | 13,191 |
| Male 18-24 | 3,532 | 3,491 | 3,457 | 3,432 | 3,413 | 3,399 |
| Male 25-34 | 3,981 | 3,951 | 3,929 | 3,919 | 3,919 | 3,924 |
| Male 35-54 | 3,050 | 3,004 | 2,989 | 2,991 | 3,007 | 3,033 |
| Male 55+ | 1,120 | 1,089 | 1,064 | 1,050 | 1,045 | 1,048 |
| Female 18-24 | 1,554 | 1,527 | 1,505 | 1,489 | 1,478 | 1,469 |
| Female 25-34 | 445 | 559 | 649 | 721 | 780 | 829 |
| Female 35-54 | 697 | 603 | 548 | 518 | 505 | 503 |
| Female 55+ | 196 | 162 | 140 | 124 | 114 | 107 |
| Mild | 7,568 | 7,375 | 7,247 | 7,175 | 7,143 | 7,141 |
| Moderate | 5,626 | 5,629 | 5,643 | 5,670 | 5,705 | 5,746 |
| Severe | 1,145 | 1,163 | 1,179 | 1,195 | 1,210 | 1,224 |
| Complex | 237 | 221 | 211 | 205 | 202 | 202 |
| **Treatment Journeys** | | **1,253** | **1,280** | **1,294** | **1,321** | **1,355** |
| **% access rate** | | **8.71%** | **8.96%** | **9.09%** | **9.26%** | **9.47%** |
| Successful | | 790 | 806 | 815 | 831 | 853 |
| Not Successful | | 464 | 474 | 479 | 490 | 502 |
| Male 18-24 | | 68 | 78 | 77 | 77 | 77 |
| Male 25-34 | | 222 | 233 | 234 | 236 | 238 |
| Male 35-54 | | 456 | 450 | 458 | 469 | 481 |
| Male 55+ | | 140 | 146 | 142 | 140 | 140 |
| Female 18-24 | | 46 | 52 | 52 | 51 | 51 |
| Female 25-34 | | 94 | 125 | 152 | 175 | 194 |
| Female 35-54 | | 177 | 156 | 144 | 142 | 145 |
| Female 55+ | | 50 | 40 | 34 | 31 | 29 |
| **Number of People in Contact with Service on a Typical Day** | | | | | | |
| Community | 427 | 452 | 455 | 463 | 474 | 488 |
| Residential | 11.1 | 12.0 | 12.2 | 12.5 | 12.9 | 13.3 |
| Inpatient | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 |

## Table 8 Model Results for Exemplar LA - Scenario C – 25% Increase in each age gender group

| LEEDS | Baseline | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|
| offsetting ->->->->->->->->->-> | 5 | 57 | 109 | 161 | 213 | 265 |
| **Population** | **601106** | **615,444** | **629,781** | **644,119** | **658,457** | **672,795** |
| | | | | | | |
| **Former Dependents** | **26,368** | **28,181** | **29,918** | **31,554** | **33,114** | **34,614** |
| Abstainers/Alcohol Free | 15,081 | 16,162 | 17,231 | 18,265 | 19,276 | 20,268 |
| Moderate Drinker | 11,286 | 12,018 | 12,687 | 13,289 | 13,838 | 14,346 |
| | | | | | | |
| Male 18-24 | 5957 | 5983 | 6002 | 6016 | 6025 | 6031 |
| Male 25-34 | 6650 | 6951 | 7217 | 7445 | 7641 | 7811 |
| Male 35-54 | 5690 | 6373 | 7031 | 7649 | 8233 | 8788 |
| Male 55+ | 2892 | 3149 | 3424 | 3709 | 4004 | 4308 |
| Female 18-24 | 2622 | 2642 | 2657 | 2668 | 2676 | 2681 |
| Female 25-34 | 746 | 1093 | 1423 | 1730 | 2014 | 2273 |
| Female 35-54 | 1304 | 1434 | 1566 | 1703 | 1852 | 2013 |
| Female 55+ | 508 | 556 | 597 | 634 | 670 | 708 |
| | | | | | | |
| | | | | | | |
| **Prevalence** | **14,576** | **14,324** | **14,140** | **14,046** | **14,014** | **14,027** |
| % prev | 2.42% | 2.33% | 2.25% | 2.18% | 2.13% | 2.08% |
| Estimated In Treatment at 1 April | 1,851 | 1,732 | 1,554 | 1,400 | 1,266 | 1,148 |
| Not in Treatment | 12,725 | 12,592 | 12,587 | 12,646 | 12,748 | 12,879 |
| | | | | | | |
| Male 18-24 | 3,532 | 3,498 | 3,472 | 3,453 | 3,438 | 3,428 |
| Male 25-34 | 3,981 | 3,945 | 3,918 | 3,905 | 3,902 | 3,907 |
| Male 35-54 | 3,050 | 2,954 | 2,878 | 2,835 | 2,815 | 2,814 |
| Male 55+ | 1,120 | 1,091 | 1,066 | 1,050 | 1,041 | 1,040 |
| Female 18-24 | 1,554 | 1,531 | 1,512 | 1,499 | 1,489 | 1,482 |
| Female 25-34 | 445 | 550 | 629 | 690 | 739 | 781 |
| Female 35-54 | 697 | 596 | 533 | 498 | 482 | 476 |
| Female 55+ | 196 | 159 | 133 | 116 | 106 | 99 |
| | | | | | | |
| Mild | 7,568 | 7,338 | 7,168 | 7,064 | 7,007 | 6,985 |
| Moderate | 5,626 | 5,607 | 5,594 | 5,599 | 5,616 | 5,641 |
| Severe | 1,145 | 1,160 | 1,171 | 1,183 | 1,194 | 1,205 |
| Complex | 237 | 219 | 208 | 201 | 198 | 197 |
| | | | | | | |
| | | | | | | |
| **Treatment Journeys** | | **1,359** | **1,421** | **1,422** | **1,441** | **1,471** |
| **% access rate** | | **9.49%** | **10.05%** | **10.13%** | **10.28%** | **10.49%** |
| Successful | | 855 | 896 | 895 | 907 | 926 |
| Not Successful | | 504 | 526 | 527 | 534 | 546 |
| | | | | | | |
| Male 18-24 | | 55 | 58 | 58 | 58 | 58 |
| Male 25-34 | | 232 | 248 | 249 | 251 | 252 |
| Male 35-54 | | 541 | 567 | 565 | 570 | 579 |
| Male 55+ | | 135 | 139 | 135 | 133 | 132 |
| Female 18-24 | | 41 | 43 | 43 | 43 | 43 |
| Female 25-34 | | 110 | 151 | 182 | 207 | 228 |
| Female 35-54 | | 190 | 169 | 153 | 148 | 149 |
| Female 55+ | | 57 | 46 | 38 | 33 | 31 |
| **Number of People in Contact with Service on a Typical Day** | | | | | | |
| Community | 430 | 505 | 502 | 506 | 516 | 528 |
| Residential | 11.2 | 13.3 | 13.5 | 13.7 | 14.1 | 14.5 |
| Inpatient | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.5 |

## Table 9: Incremental Results - 25% Increase in each age gender group Minus No Change (Scenario C minus Scenario A)

| LEEDS | Baseline | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|
| offsetting ->->->->->->->->->-> | 5 | 57 | 109 | 161 | 213 | 265 |
| **Population** | **0** | **0** | **0** | **0** | **0** | **0** |
| | | | | | | |
| **Former Dependents** | **0** | **106** | **236** | **339** | **422** | **491** |
| Abstainers/Alcohol Free | 0 | 66 | 152 | 226 | 291 | 351 |
| Moderate Drinker | 0 | 40 | 84 | 112 | 130 | 141 |
| | 0 | 0 | 0 | 0 | 0 | 0 |
| Male 18-24 | 0 | 4 | 9 | 13 | 15 | 17 |
| Male 25-34 | 0 | 19 | 42 | 60 | 74 | 85 |
| Male 35-54 | 0 | 43 | 95 | 136 | 169 | 195 |
| Male 55+ | 0 | 12 | 28 | 44 | 58 | 71 |
| Female 18-24 | 0 | 3 | 7 | 9 | 11 | 13 |
| Female 25-34 | 0 | 8 | 21 | 33 | 43 | 53 |
| Female 35-54 | 0 | 14 | 26 | 34 | 40 | 45 |
| Female 55+ | 0 | 4 | 8 | 10 | 11 | 12 |
| | | | | | | |
| | | | | | | |
| **Prevalence** | **0** | **-106** | **-234** | **-333** | **-413** | **-478** |
| % prev | 0.00% | -0.02% | -0.04% | -0.05% | -0.06% | -0.07% |
| Estimated In Treatment at 1 April | 6 | 84 | 67 | 56 | 48 | 41 |
| Not in Treatment | -6 | -189 | -301 | -389 | -460 | -519 |
| | | | | | | |
| Male 18-24 | 0 | -4 | -9 | -13 | -15 | -17 |
| Male 25-34 | 0 | -19 | -42 | -60 | -74 | -85 |
| Male 35-54 | 0 | -42 | -95 | -135 | -167 | -194 |
| Male 55+ | 0 | -11 | -27 | -41 | -53 | -64 |
| Female 18-24 | 0 | -3 | -7 | -9 | -11 | -12 |
| Female 25-34 | 0 | -8 | -21 | -33 | -43 | -52 |
| Female 35-54 | 0 | -14 | -26 | -34 | -40 | -44 |
| Female 55+ | 0 | -4 | -7 | -8 | -9 | -9 |
| | | | | | | |
| Mild | 0 | -60 | -131 | -184 | -226 | -259 |
| Moderate | 0 | -37 | -83 | -121 | -152 | -178 |
| Severe | 0 | -6 | -15 | -22 | -28 | -34 |
| Complex | 0 | -2 | -5 | -6 | -7 | -8 |
| | | | | | | |
| | | | | | | |
| **Treatment Journeys** | 0 | **179** | **244** | **224** | **212** | **206** |
| **% access rate** | 0 | **1.31%** | **1.86%** | **1.79%** | **1.76%** | **1.76%** |
| Successful | 0 | 111 | 154 | 141 | 134 | 129 |
| Not Successful | 0 | 68 | 90 | 83 | 79 | 76 |
| | | | | | | |
| Male 18-24 | 0 | 8 | 12 | 11 | 11 | 11 |
| Male 25-34 | 0 | 32 | 48 | 47 | 46 | 46 |
| Male 35-54 | 0 | 71 | 97 | 88 | 82 | 78 |
| Male 55+ | 0 | 18 | 25 | 22 | 20 | 19 |
| Female 18-24 | 0 | 6 | 8 | 8 | 8 | 8 |
| Female 25-34 | 0 | 15 | 25 | 28 | 30 | 31 |
| Female 35-54 | 0 | 23 | 23 | 16 | 13 | 11 |
| Female 55+ | 0 | 6 | 6 | 3 | 2 | 1 |
| **Number of People in Contact with Service on a Typical Day** | | | | | | |
| Community | 5 | 89 | 81 | 76 | 73 | 72 |
| Residential | 0.2 | 2.4 | 2.2 | 2.1 | 2.0 | 2.0 |
| Inpatient | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |

## Table 10 Model Results for Exemplar LA - Scenario D – Trebled Access Rates (Similar order of magnitude to Scotland)

| LEEDS | | Baseline | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|---|
| | offsetting ->->->->->->->->-> | 5 | 57 | 109 | 161 | 213 | 265 |
| **Population** | | **601106** | **615,444** | **629,781** | **644,119** | **658,457** | **672,795** |
| | | | | | | | |
| **Former Dependents** | | **26,368** | **28,811** | **31,228** | **33,330** | **35,224** | **36,978** |
| | Abstainers/Alcohol Free | 15,081 | 16,557 | 18,079 | 19,460 | 20,750 | 21,981 |
| | Moderate Drinker | 11,286 | 12,254 | 13,149 | 13,870 | 14,474 | 14,997 |
| | | | | | | | |
| | Male 18-24 | 5957 | 6013 | 6066 | 6104 | 6130 | 6148 |
| | Male 25-34 | 6650 | 7077 | 7492 | 7829 | 8106 | 8338 |
| | Male 35-54 | 5690 | 6640 | 7568 | 8357 | 9055 | 9691 |
| | Male 55+ | 2892 | 3224 | 3594 | 3954 | 4309 | 4662 |
| | Female 18-24 | 2622 | 2664 | 2704 | 2732 | 2751 | 2764 |
| | Female 25-34 | 746 | 1144 | 1537 | 1894 | 2217 | 2509 |
| | Female 35-54 | 1304 | 1484 | 1652 | 1806 | 1965 | 2135 |
| | Female 55+ | 508 | 566 | 614 | 654 | 692 | 731 |
| | | | | | | | |
| | | | | | | | |
| **Prevalence** | | **14,576** | **13,696** | **12,841** | **12,295** | **11,946** | **11,724** |
| | % prev | 2.42% | 2.23% | 2.04% | 1.91% | 1.81% | 1.74% |
| | Estimated In Treatment at 1 April | 1,887 | 2,189 | 1,876 | 1,639 | 1,452 | 1,299 |
| | Not in Treatment | 12,689 | 11,506 | 10,965 | 10,656 | 10,494 | 10,425 |
| | | | | | | | |
| | Male 18-24 | 3,532 | 3,469 | 3,408 | 3,365 | 3,334 | 3,312 |
| | Male 25-34 | 3,981 | 3,819 | 3,644 | 3,522 | 3,438 | 3,382 |
| | Male 35-54 | 3,050 | 2,687 | 2,343 | 2,130 | 2,000 | 1,920 |
| | Male 55+ | 1,120 | 1,017 | 902 | 820 | 764 | 727 |
| | Female 18-24 | 1,554 | 1,509 | 1,466 | 1,436 | 1,414 | 1,399 |
| | Female 25-34 | 445 | 499 | 514 | 526 | 536 | 545 |
| | Female 35-54 | 697 | 545 | 446 | 396 | 371 | 357 |
| | Female 55+ | 196 | 149 | 118 | 99 | 89 | 82 |
| | | | | | | | |
| | Mild | 7,568 | 6,988 | 6,453 | 6,115 | 5,902 | 5,767 |
| | Moderate | 5,626 | 5,380 | 5,118 | 4,947 | 4,835 | 4,762 |
| | Severe | 1,145 | 1,119 | 1,083 | 1,059 | 1,043 | 1,032 |
| | Complex | 237 | 209 | 186 | 173 | 166 | 163 |
| | | | | | | | |
| | | | | | | | |
| **Treatment Journeys** | | | **2,422** | **2,713** | **2,495** | **2,388** | **2,346** |
| | **% access rate** | | **17.68%** | **21.13%** | **20.29%** | **19.99%** | **20.01%** |
| | Successful | | 1,515 | 1,711 | 1,571 | 1,503 | 1,476 |
| | Not Successful | | 907 | 1,002 | 924 | 885 | 870 |
| | | | | | | | |
| | Male 18-24 | | 108 | 138 | 136 | 135 | 134 |
| | Male 25-34 | | 450 | 557 | 539 | 528 | 522 |
| | Male 35-54 | | 988 | 1072 | 950 | 885 | 854 |
| | Male 55+ | | 253 | 281 | 244 | 218 | 202 |
| | Female 18-24 | | 80 | 101 | 99 | 97 | 96 |
| | Female 25-34 | | 198 | 277 | 304 | 328 | 350 |
| | Female 35-54 | | 272 | 232 | 182 | 163 | 158 |
| | Female 55+ | | 72 | 56 | 41 | 33 | 29 |
| **Number of People in Contact with Service on a Typical Day** | | | | | | | |
| | Community | 465 | 994 | 899 | 851 | 830 | 825 |
| | Residential | 12.3 | 26.7 | 24.6 | 23.5 | 23.0 | 22.9 |
| | Inpatient | 0.4 | 0.9 | 0.8 | 0.8 | 0.8 | 0.8 |

**Table 11:** Incremental Results - Trebled Access Rates (Similar order of magnitude to Scotland) Minus No Change (Scenario D minus Scenario A)

| LEEDS | Baseline | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|
| offsetting ->->->->->->->->-> | 5 | 57 | 109 | 161 | 213 | 265 |
| **Population** | **0** | **0** | **0** | **0** | **0** | **0** |
| | | | | | | |
| **Former Dependents** | **0** | **736** | **1,547** | **2,114** | **2,531** | **2,855** |
| Abstainers/Alcohol Free | 0 | 461 | 1,001 | 1,420 | 1,765 | 2,063 |
| Moderate Drinker | 0 | 275 | 546 | 694 | 766 | 791 |
| | 0 | 0 | 0 | 0 | 0 | 0 |
| Male 18-24 | 0 | 34 | 73 | 101 | 120 | 134 |
| Male 25-34 | 0 | 144 | 316 | 444 | 539 | 612 |
| Male 35-54 | 0 | 309 | 632 | 844 | 990 | 1099 |
| Male 55+ | 0 | 87 | 199 | 289 | 363 | 425 |
| Female 18-24 | 0 | 25 | 53 | 73 | 86 | 96 |
| Female 25-34 | 0 | 60 | 136 | 197 | 247 | 289 |
| Female 35-54 | 0 | 64 | 113 | 138 | 153 | 166 |
| Female 55+ | 0 | 14 | 25 | 30 | 33 | 35 |
| | | | | | | |
| | | | | | | |
| **Prevalence** | **0** | **-734** | **-1,534** | **-2,084** | **-2,481** | **-2,781** |
| % prev | 0.00% | -0.12% | -0.24% | -0.32% | -0.38% | -0.41% |
| Estimated In Treatment at 1 April | 42 | 541 | 390 | 295 | 233 | 192 |
| Not in Treatment | -42 | -1,275 | -1,923 | -2,379 | -2,714 | -2,973 |
| | | | | | | |
| Male 18-24 | 0 | -34 | -73 | -100 | -120 | -133 |
| Male 25-34 | 0 | -144 | -316 | -443 | -538 | -610 |
| Male 35-54 | 0 | -309 | -630 | -839 | -983 | -1,087 |
| Male 55+ | 0 | -85 | -191 | -270 | -331 | -377 |
| Female 18-24 | 0 | -25 | -53 | -73 | -86 | -95 |
| Female 25-34 | 0 | -60 | -136 | -197 | -247 | -288 |
| Female 35-54 | 0 | -64 | -113 | -136 | -151 | -163 |
| Female 55+ | 0 | -13 | -22 | -25 | -26 | -26 |
| | | | | | | |
| Mild | 0 | -410 | -846 | -1,133 | -1,331 | -1,476 |
| Moderate | 0 | -264 | -559 | -772 | -932 | -1,056 |
| Severe | 0 | -47 | -103 | -145 | -179 | -206 |
| Complex | 0 | -13 | -26 | -34 | -39 | -42 |
| | | | | | | |
| | | | | | | |
| **Treatment Journeys** | 0 | **1,241** | **1,536** | **1,297** | **1,159** | **1,080** |
| **% access rate** | 0 | **9.50%** | **12.94%** | **11.96%** | **11.47%** | **11.28%** |
| Successful | 0 | 770 | 969 | 817 | 729 | 679 |
| Not Successful | 0 | 471 | 567 | 480 | 430 | 401 |
| | | | | | | |
| Male 18-24 | 0 | 61 | 91 | 90 | 89 | 88 |
| Male 25-34 | 0 | 250 | 356 | 337 | 324 | 316 |
| Male 35-54 | 0 | 518 | 602 | 473 | 397 | 353 |
| Male 55+ | 0 | 136 | 167 | 131 | 106 | 89 |
| Female 18-24 | 0 | 45 | 66 | 64 | 63 | 62 |
| Female 25-34 | 0 | 103 | 151 | 150 | 151 | 153 |
| Female 35-54 | 0 | 105 | 87 | 46 | 28 | 20 |
| Female 55+ | 0 | 22 | 16 | 6 | 2 | 0 |
| **Number of People in Contact with Service on a Typical Day** | | | | | | |
| Community | 40 | 579 | 478 | 420 | 387 | 369 |
| Residential | 1.3 | 15.7 | 13.3 | 11.9 | 11.0 | 10.5 |
| Inpatient | 0.1 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 |

## Table 12 Model Results for Exemplar LA - Scenario E: 25% Reduction in Specialist Treatment Access Rates

| LEEDS | | Baseline | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|---|
| | offsetting ->->->->->->->->->-> | 5 | 57 | 109 | 161 | 213 | 265 |
| **Population** | | 601,106 | 615,444 | 629,781 | 644,119 | 658,457 | 672,795 |
| | | | | | | | |
| **Former Dependents** | | 26,368 | 27,966 | 29,432 | 30,850 | 32,229 | 33,575 |
| | Abstainers/Alcohol Free | 15,081 | 16,028 | 16,917 | 17,796 | 18,666 | 19,528 |
| | Moderate Drinker | 11,286 | 11,938 | 12,515 | 13,054 | 13,563 | 14,046 |
| | | | | | | | |
| | Male 18-24 | 5957 | 5974 | 5984 | 5990 | 5994 | 5997 |
| | Male 25-34 | 6650 | 6914 | 7133 | 7324 | 7491 | 7638 |
| | Male 35-54 | 5690 | 6287 | 6836 | 7366 | 7878 | 8373 |
| | Male 55+ | 2892 | 3126 | 3366 | 3619 | 3883 | 4158 |
| | Female 18-24 | 2622 | 2636 | 2644 | 2649 | 2653 | 2656 |
| | Female 25-34 | 746 | 1075 | 1379 | 1661 | 1921 | 2160 |
| | Female 35-54 | 1304 | 1406 | 1510 | 1628 | 1763 | 1912 |
| | Female 55+ | 508 | 548 | 581 | 613 | 645 | 680 |
| | | | | | | | |
| | | | | | | | |
| **Prevalence** | | 14,576 | 14,538 | 14,622 | 14,739 | 14,881 | 15,038 |
| | % prev | 2.42% | 2.36% | 2.32% | 2.29% | 2.26% | 0 |
| | Estimated In Treatment at 1 April | 1,840 | 1,560 | 1,411 | 1,279 | 1,162 | 1056 |
| | Not in Treatment | 12,737 | 12,978 | 13,210 | 13,460 | 13,719 | 13982 |
| | | | | | | | |
| | Male 18-24 | 3,532 | 3,507 | 3,491 | 3,478 | 3,469 | 3,462 |
| | Male 25-34 | 3,981 | 3,982 | 4,002 | 4,026 | 4,052 | 4,079 |
| | Male 35-54 | 3,050 | 3,040 | 3,073 | 3,116 | 3,168 | 3,225 |
| | Male 55+ | 1,120 | 1,114 | 1,122 | 1,135 | 1,153 | 1,175 |
| | Female 18-24 | 1,554 | 1,537 | 1,526 | 1,518 | 1,512 | 1,507 |
| | Female 25-34 | 445 | 568 | 673 | 759 | 831 | 893 |
| | Female 35-54 | 697 | 623 | 588 | 573 | 570 | 576 |
| | Female 55+ | 196 | 167 | 148 | 135 | 126 | 121 |
| | | | | | | | |
| | Mild | 7,568 | 7,460 | 7,438 | 7,448 | 7,482 | 7,534 |
| | Moderate | 5,626 | 5,682 | 5,765 | 5,849 | 5,932 | 6,015 |
| | Severe | 1,145 | 1,173 | 1,202 | 1,228 | 1,253 | 1,275 |
| | Complex | 237 | 224 | 217 | 214 | 213 | 214 |
| | | | | | | | |
| | | | | | | | |
| **Treatment Journeys** | | | **997** | **915** | **949** | **986** | **1,026** |
| | **% access rate** | | **6.86%** | **6.26%** | **6.44%** | **6.63%** | **6.82%** |
| | Successful | | 631 | 576 | 597 | 621 | 646 |
| | Not Successful | | 366 | 339 | 351 | 365 | 380 |
| | | | | | | | |
| | Male 18-24 | | 39 | 35 | 35 | 35 | 35 |
| | Male 25-34 | | 167 | 152 | 154 | 156 | 158 |
| | Male 35-54 | | 397 | 365 | 379 | 393 | 407 |
| | Male 55+ | | 99 | 88 | 88 | 89 | 91 |
| | Female 18-24 | | 29 | 26 | 26 | 26 | 26 |
| | Female 25-34 | | 80 | 98 | 122 | 143 | 160 |
| | Female 35-54 | | 143 | 118 | 115 | 116 | 121 |
| | Female 55+ | | 43 | 33 | 30 | 28 | 27 |
| **Number of People in Contact with Service on a Typical Day** | | | | | | | |
| | Community | 419 | 321 | 331 | 344 | 358 | 372 |
| | Residential | 11 | 8 | 9 | 9 | 10 | 10 |
| | Inpatient | 0 | 0 | 0 | 0 | 0 | 0 |

## Table 13: Incremental Results - 25% Reduction in Specialist Treatment Access Rates Minus No Change (Scenario E minus Scenario A)

| LEEDS | | Baseline | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|---|---|
| | offsetting ->->->->->->->->->-> | 5 | 57 | 109 | 161 | 213 | 265 |
| **Population** | | - | - | - | - | - | - |
| | | | | | | | |
| **Former Dependents** | | - | - 109 | - 250 | - 365 | - 463 | - 548 |
| | Abstainers/Alcohol Free | - | - 68 | - 161 | - 243 | - 319 | - 389 |
| | Moderate Drinker | - | - 41 | - 89 | - 122 | - 144 | - 159 |
| | | | | | | | |
| | Male 18-24 | 0 | -4 | -9 | -13 | -15 | -17 |
| | Male 25-34 | 0 | -19 | -42 | -61 | -76 | -88 |
| | Male 35-54 | 0 | -44 | -100 | -147 | -186 | -220 |
| | Male 55+ | 0 | -12 | -29 | -46 | -63 | -79 |
| | Female 18-24 | 0 | -3 | -7 | -9 | -11 | -13 |
| | Female 25-34 | 0 | -9 | -23 | -36 | -49 | -60 |
| | Female 35-54 | 0 | -14 | -30 | -40 | -49 | -56 |
| | Female 55+ | 0 | -4 | -9 | -12 | -14 | -16 |
| | | | | | | | |
| | | | | | | | |
| **Prevalence** | | **-** | **109** | **247** | **360** | **454** | **533** |
| | % prev | 0.00% | 0.02% | 0.04% | 0.06% | 0.07% | 0.08% |
| | Estimated In Treatment at 1 April | -6 | -89 | -75 | -65 | -57 | -51 |
| | Not in Treatment | 6 | 197 | 322 | 424 | 510 | 584 |
| | | | | | | | |
| | Male 18-24 | 0 | 4 | 9 | 13 | 15 | 17 |
| | Male 25-34 | 0 | 19 | 42 | 61 | 76 | 88 |
| | Male 35-54 | 0 | 44 | 100 | 146 | 185 | 218 |
| | Male 55+ | 0 | 12 | 28 | 44 | 58 | 71 |
| | Female 18-24 | 0 | 3 | 7 | 9 | 11 | 13 |
| | Female 25-34 | 0 | 9 | 23 | 36 | 49 | 60 |
| | Female 35-54 | 0 | 14 | 30 | 40 | 48 | 55 |
| | Female 55+ | 0 | 4 | 8 | 10 | 11 | 12 |
| | | | | | | | |
| | Mild | 0 | 62 | 139 | 200 | 250 | 291 |
| | Moderate | 0 | 38 | 88 | 129 | 165 | 197 |
| | Severe | 0 | 7 | 16 | 23 | 31 | 37 |
| | Complex | 0 | 2 | 5 | 7 | 8 | 9 |
| | | | | | | | |
| | | | | | | | |
| **Treatment Journeys** | | | | | | | |
| | **% access rate** | **0** | **-1.32%** | **-1.93%** | **-1.90%** | **-1.89%** | **-1.90%** |
| | Successful | 0 | -114 | -165 | -157 | -153 | -151 |
| | Not Successful | 0 | -70 | -97 | -92 | -90 | -89 |
| | | | | | | | |
| | Male 18-24 | 0 | -8 | -12 | -12 | -12 | -11 |
| | Male 25-34 | 0 | -32 | -49 | -48 | -48 | -48 |
| | Male 35-54 | 0 | -73 | -104 | -99 | -95 | -93 |
| | Male 55+ | 0 | -18 | -26 | -24 | -23 | -22 |
| | Female 18-24 | 0 | -6 | -9 | -8 | -8 | -8 |
| | Female 25-34 | 0 | -15 | -27 | -31 | -34 | -37 |
| | Female 35-54 | 0 | -24 | -28 | -22 | -19 | -17 |
| | Female 55+ | 0 | -7 | -7 | -5 | -3 | -3 |
| **Number of People in Contact with Service on a Typical Day** | | | | | | | |
| | Community | -5.4 | -94.6 | -89.3 | -86.3 | -84.8 | -84.3 |
| | Residential | -0.2 | -2.5 | -2.4 | -2.4 | -2.3 | -2.3 |
| | Inpatient | 0.0 | -0.1 | -0.1 | -0.1 | -0.1 | -0.1 |

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