to improve delivery of care. However, prediction models used in medical research often fail to accurately predict health outcomes due to methodological limitations. These models particularly perform poorly when predicting narrowly targeted subgroups of patients. We explore the role of latent class regression (LCR) analysis to model the survival of patients with CHF. We seek to show that using LCR improves the modelling of health outcomes as it accounts for unobserved heterogeneity that exists naturally within the patient data.

Methods LCR generally involves identifying hidden latent classes within data and uses patient's demographic characteristics and other covariates to predict class membership and separate regression models for each class. These latent classes may correspond to subgroups of patients with specific characteristics that affect their survival. The rationale is that one class will be more susceptible to deaths compared to another. The United Kingdom Heart Failure Evaluation and Assessment of Risk Trial (UK-HEART) recruited patients with signs and symptoms of CHF between July 2006 and December 2014. A total of 1802 records were available on patient characteristics as well as medications. We used some of these variables to model survival of patients within a latent class framework by estimating a single regression model for both latent classes. We increased complexity of our model by allowing each class to have a separate survival model.

Results We used the area under the receiver operating characteristic (ROC) curve to assess the performance of these two class models. Overall, our novel approach performed better than the traditional one-model-fits-all approach. Our model gave an area under the curve (AUC) of 0.87 while the traditional model yielded an AUC of 0.68.

Conclusion Ignoring the natural heterogeneity that exists within the patient data affects the accuracy of estimates in prediction models. Researchers can utilise the available data to identify hidden latent classes within the data. Fitting a regression model to each latent class improves the accuracy of the prediction estimates.

P16 STIGMATIZATION OF SMOKERS: THE ROLE OF SCHOOL TOBACCO POLICIES

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Background Stigma exists when components of labeling, stereotyping, separation, and discrimination occur together in a power situation. This may apply to smoking, a behavior being increasingly denormalized. However, it is unknown whether School Tobacco Policies (STP) may lead to the stigmatizationof adolescent smokers. Our aims are (1) to measure the magnitude of eachstigmatization's components and (2) to assess how STPs influence them.

Methods Data on 11 493 adolescents in 43 schools in 7 European countries were used (SILNE R-survey, 2016). Dependent variable was Stuber's scale to measure stigmatization with four items: *most people think less of person who smoke, believe that smoking is for losers, most non-smokers would be reluctant to date someone who smokes and would not hire a smoker to babysit children*. Independent variables were: being a weekly smoker, having friends smoking, parental smoking and the score of school tobacco policies (STPs). We performed multilevel regressions which include interactions between weekly smoking and other independent variables.

Results The most frequent stigmatization components were related to discrimination such as 'not to hire a smoker as a babysitter' (77%) and not 'dating a smoker' (55%). Smokers always reported less stigmatization compared to non-smokers. Differences between smokers and non-smokers were more pronounced for 'not to hire a smoker as a babysitter (62% vs 80%, $X^2=182$, $p<0,001$) and less so for stereotype: '*most people think less of person who smokes*' (Smokers: 45%; non-smokers: 52%, $X^2=15$, $p<0,001$). Multilevel regression showed that stigmatization was lower in smokers, increased with none of my friends being smokers, decreased with parental smoking. In addition, smokers felt more stigmatized in schools with higher STPs score.

Conclusion Smoking is associated with a loss of status. STPs increase stigmatization within school while social environment (friends and family) decrease stigmatization. This suggest that social ties may reduce the effect of stigmatization on smoking behavior among adolescents.

P17 ORGANISATIONAL STAKEHOLDERS WHO ENGAGE IN SCOTTISH E-CIGARETTE POLICY DEBATES: A MIXED METHODS APPROACH

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Background Electronic cigarettes (e-cigarettes) have become subject to highly contested public and political debates, including the role of commercial stakeholders in development and implementation of e-cigarette policy. There are concerns that e-cigarette debates provide opportunities for commercial stakeholders to demonstrate alignment with public health interests, build reputation, and gain influence over policy processes. While previous research on commercial sector engagement in policymaking has enhanced understanding of its impact on public health, a striking research gap exists regarding commercial actors' engagement in e-cigarette debates.

Setting Taking the Scottish context as a case study, this project aims to increase understanding of commercial stakeholders' engagement in policy debates on e-cigarettes, generate debate on the sector's engagement in e-cigarette policy, and contribute to the development of effective e-cigarette policy. The project is investigating commercial stakeholders' interests in, and positions on, the benefits, harms and regulation of e-cigarettes, the ways in which interests and positions are presented and evidence is framed, and efforts to build collaboration and shape e-cigarette policy.

Methods A mixed-method approach has been applied, combining the use of social network analysis to systematically analyse the relationships between commercial and other policy stakeholders and thematic analysis of documentary and interview data to explore the nature of commercial stakeholders' engagement in policy debates on e-cigarettes in Scotland. Publicly available policy documents and data from semi-structured, in-depth interviews with key stakeholders have been analysed.

Results The analysis focuses on stakeholders' interests in, and positions on, the benefits and harms of e-cigarettes, the ways

in which positions are presented, and their efforts to build coalitions in order to achieve specific policy outcomes. It finds that, while commercial stakeholders support e-cigarette regulation in general (e.g. age restrictions); there are efforts to influence regulation in a way that fits within their economic interests. This project shows that commercial stakeholders seek endorsement from public health organisations, in order to make health claims that can support the 'harm reduction argument'. The presentation will also discuss non-commercial stakeholders' arguments about whether commercial stakeholders should be included in e-cigarette policy debates or not.

P18 NEWLY AT RISK? USING HEALTH SURVEY FOR ENGLAND DATA TO RETROSPECTIVELY EXPLORE THE CHARACTERISTICS OF NEWLY DEFINED AT-RISK DRINKERS FOLLOWING THE CHANGE TO THE UK LOWER RISK DRINKING GUIDELINES

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Background Alcohol guidelines enable individuals to make informed choices about their alcohol consumption and assist healthcare practitioners to identify and offer support to at-risk drinkers. The UK lower risk drinking guidelines were revised in 2016 and the weekly guideline for men was reduced. This study sought to retrospectively establish 1) the number of additional men in England who have been drinking at increasing risk levels in the past 5 years, and 2) whether this group of newly defined increasing risk male drinkers shared any specific characteristics.

Methods Average weekly alcohol consumption data for men aged 16+ from the cross-sectional nationally representative Health Survey for England were used and regrouped into: non-drinkers; lower risk drinkers (≤14 units per week); newly defined increasing risk drinkers (>14 to ≤21 units pw) and increasing/higher risk drinkers (>21 units pw) in order to 1) calculate annual population prevalence estimates for newly defined increasing risk adult male drinkers from 2011–2015 (n=3487–3790) and 2) conduct a multinomial logistic regression analysis to assess which characteristics were significantly associated with men being newly defined increasing risk drinkers (reference category) versus lower risk and increasing/higher risk drinkers (n=2982). Models were fully-adjusted and included age-group, social class, region, smoking status, marital status, ethnicity and limiting-longstanding illness. Analyses were conducted in Stata 15.

Results Population prevalence estimates of newly defined increasing risk drinkers ranged from 10.2% of the adult male population in England (2,182,401 men) in 2014 to 11.2% (2,322,896 men) in 2011. Lower risk drinkers were significantly less likely ($p<0.05$) than newly defined increasing risk drinkers to be aged 55–64 (RRR 0.43, 95% CI 0.21 to 0.87); working in professional or managerial occupations (RRR 0.61, 95% CI 0.45 to 0.83); living in the North East (RRR 0.47, 95% CI 0.29 to 0.77), North West (RRR 0.56, 95% CI 0.38 to 0.82), West Midlands (RRR 0.52, 95% CI 0.32 to 0.83) or South West (RRR 0.57, 95% CI 0.36 to 0.91); and to be ex-regular (RRR 0.62, 95% CI 0.46 to 0.83) or current (RRR 0.56, 95% CI 0.39 to 0.81) cigarette smokers. Increasing/higher risk drinkers were significantly more likely than newly defined increasing risk drinkers to be ex-regular smokers (RRR 1.42, 95% CI 1.01 to 1.99).

Conclusion Approximately 11% of adult men would have been reclassified from lower risk to increasing risk drinkers according to the 2016 drinking guidelines. Such an increase in at-risk drinkers could impact clinical services. Newly defined increasing risk drinkers differ from lower risk drinkers on several characteristics but are largely similar to increasing/higher risk drinkers, therefore targeting this group specifically may not be feasible.

P19 DEVELOPING A FRAMEWORK FOR PRIORITY SETTING IN AN INTEGRATED HEALTH AND SOCIAL CARE SETTING

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Background There is a move, internationally, towards greater integration of health and social care. Integration, it is argued, should reduce budgetary boundaries and facilitate sharing of resources across health and social care. At local levels, delivery organisations need to alter the balance of care from acute settings to people's own home or similar community environments against a background of increasing austerity. To facilitate this shift, there is a need to use robust processes for allocating resources to make difficult decisions and to create interdisciplinary priority setting frameworks involving economists, ethicists, lawyers and decision scientists. In 2014, the Scottish Government established Health and Social Care Partnerships (HSCPs) to deliver this agenda, creating single commissioners and unifying budgets. This paper presents the early stages of a research project funded by the Chief Scientist Office, part of the Scottish Government Health Directorates with the aim to develop and implement an enhanced, multi-disciplinary framework for priority setting, for use by 4 HSCPs, and assess its impact on decision-making and resource allocation.

Methods To develop the framework, a literature review was conducted and the combined framework presented to a multi-disciplinary workshop involving academic colleagues, local and national-level stakeholders to gain feedback to develop it further. Participatory Action Research is being undertaken to explore how the framework functioned within complex settings, and how HSCP participants engaged with the framework, and consider how the framework can be adapted to the institutional setting as well as vice versa. Before and after interviews will be conducted.

Results The framework is underpinned by principles from economics (opportunity cost), decision-analysis (good decisions), ethics (justice) and law (fair procedures). It includes key stages for those undertaking priority setting to follow, including: framing the question, looking at current use of resources, defining options and criteria, evaluating the options and