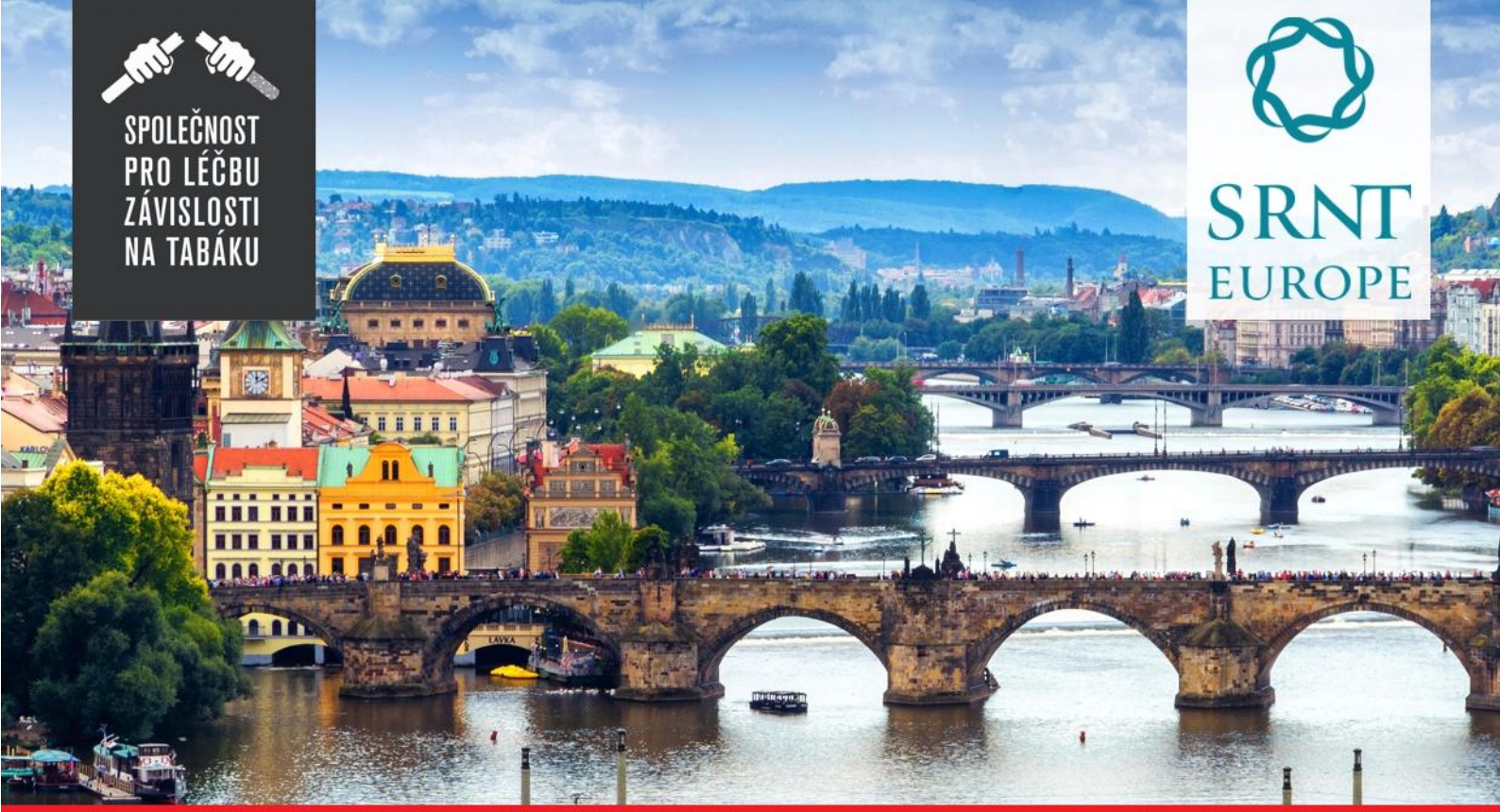

TRANSLATING QUALITY SCIENCE INTO QUALITY PRACTICE

SRNT EUROPE 2016
17th ANNUAL CONFERENCE

8-10 September 2016

Prague, Czech Republic

Abstract Book

Contents

Time Scheme

Sept. 08 - CONFERENCE DAY 1

TIME	AUDITORIUM	PHARMACO	UBLG
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9:15 - 9:45	**Keynote Lecture** *chair: A. McNeill* **Pathways between smoking and mental health** *- Marcus Munafò*		
9:45 - 11:05	**Symposium 1** **Smartphone applications for smoking cessation: development and testing** *chair: K.A. Garrison* Smokebeat: A novel smoking cessation app utilizing big data over wearables *- R. Dar* Cigbreak, a novel smartphone game for smoking cessation *- E.A. Edwards* Recruitment, engagement and retention in a randomized controlled trial of a mindfulness training smartphone app for smoking cessation *- K.A. Garrison*	**Symposium 2** **Beyond the Tobacco Products Directive: Next steps for packaging and labelling** *chair: L. Bauld* Plain packaging: A literature review *- J.M. Rey-Pino* The impact of health warning immediacy on visual attention *- O.M. Maynard* Young adult smokers' perceptions of cigarette pack inserts with positive messaging *- C. Moodie* Can dissuasive cigarettes influence young peoples' perceptions of smoking? *- K. Gallopel-Morvan*	1.1 S **Challenges and solutions for tobacco treatment** *chair: L. Shahab* Are we asking questions that have already been answered? Results from the Cochrane TAG prioritisation survey *- N. Lindson-Hawley* Demographic ageing and the evolution of smoking-attributable mortality: the example of Germany *- U. Mons* Analyzing Varenicline Use Patterns from Electronic Medical Records *- S. Leischow* A healthcare no-brainer: health and economic impacts of hospital-initiated tobacco cessation interventions *- K.A. Mullen* Smoking cessation in groups of Swedish daily smokers with respectively without uptake of daily snus use. *- L. Ramström*
11:05 - 11:30	Coffee Break (Corridor)		

TIME	AUDITORIUM	PHARMACO	UBLG
11:30 - 12:30	1.2 L **Tobacco policy, regulation and e-cigarettes** *chair: R. Bittoun*	1.2 M **Reciprocity of smoking and mental health** *chair: A. Loukola*	Workshop 1 Suzanne Gage: **Causality from observational data**
	The U.S. Food and Drug Administration's "Deeming Rule" and Tobacco Regulatory Research *- C.L. Backinger*	Smoking and mental illness: a bibliometric analysis of research output over time *- J.A. Bowman*	
	ENDS in Social Media: Cross-Platform Analyses Using the SMILE System *- S. Leischow*	Association of childhood mental health with adolescent tobacco and substance use: findings from the Avon Longitudinal Study of Parents and Children (ALSPAC) *- M. Fluharty*	
	Prices, Taxes and the Demand for Electronic Nicotine Delivery Systems *- F.J. Chaloupka*	Cigarette smoking during adolescence as a predictor of depression on a three year follow up period *- A. Ranjit*	
	A Decision Theoretic Model of E-cigarette and Cigarette Use *- D. Levy*	Changes in depression levels after one-year abstinence from smoking *- L. Stepankova*	
12:30 - 13:00	Lunch (Corridor)	**FCTC Knowledge Hub** 1. Impact assessment of the FCTC *- by Prof. Pekka Puska* 2. Surveillance of tobacco use and tobacco control. The tasks of the WHO FCTC Knowledge Hub on surveillance *- by Dr Antero Heloma and Mr Dmitry Titkov*	**SRNT - E board meeting**
13:00 - 13:30			
13:30 - 14:00	**Poster Session 1: Smoking cessation clinics outcomes and practice** (Corridor 1A) *chair: M. Duaso*		
	Poster Session 2: Tobacco cessation in mental health settings (Corridor 1B) *chair: J.M. Vink*		
	Poster Session 3: Characterising e-cigarette usage and effects (Corridor 2A) *chair: D. Levy*		
14:00 - 14:30	**Poster Session 4: Tobacco cessation in primary care and beyond** (Corridor 1B) *chair: E.M. Brown*		
	Poster Session 5: Tobacco control policies and future needs (Corridor 2B) *chair: L. Stepankova*		

Sept. 08 - CONFERENCE DAY 1

TIME	AUDITORIUM	PHARMACO	UBLG
14:30 - 15:00	**Keynote Lecture** *chair: J. Kaprio* **Evidence based treatment of tobacco dependence in Europe** *- Eva Králíková*		
15:00 - 15:30	Coffee Break (Corridor)		
15:30 - 17:00	**Symposium 3** **E-cigarettes: Making sense of new data from 2015-2016** *chair: P. Hajek* Estimating the population impact of the growth in e-cigarette use in England: latest findings from the Smoking Toolkit Study - R. West Use of electronic cigarettes by young people *- L. Bauld* E-cigarettes: update on evidence of efficacy for smoking cessation *- J. Hartmann-Boyce* Blood nicotine delivery from electronic cigarettes: Getting better all the time? *- L.E. Dawkins* Update on electronic cigarette safety/risk profile: evaluation of recent literature *- K. Farsalinos*	**Symposium 4** **Using digital tools to help smokers quit: Results of randomized trials** *chair: D. Ramo* Three studies on computer tailored digital interventions to quit smoking *- H. de Vries* A Randomized Trial of a Text-Messaging Program to Promote Smoking Cessation in Pregnant Smokers *- L.C. Abroms* Effect of a Mobile Phone Intervention "Crush the Crave" on Quitting Smoking in a Young Adult Population of Smokers: Randomized Controlled Trial *- N.B. Baskerville* The Tobacco Status Project: Outcomes for a randomized controlled trial of a Facebook smoking cessation intervention for young adults *- D. Ramo & J. Thrul* Leveraging Twitter to Treat Tobacco Addiction: Tweet2Quit *- J.J. Prochaska*	Workshop 2 Anu Loukola & Miina Ollikainen: **The A-B-Cs of genetics and epigenetics**
17:00 - 18:00	**SRNT-E members' meeting**		
19:00 - 21:00	**Welcome reception** Residence of the Mayor of Prague		

Sept. 09 - CONFERENCE DAY 2

TIME	AUDITORIUM	PHARMACO	UBLG
8:30 - 9:00	REGISTRATION (Corridor)		
9:00 - 10:00	**Keynote Lecture: Smoking in pregnancy** *chair: I. Berlin* **Effects of prenatal smoking exposure on child's health** *- Mikael Ekblad* **Interventions for smoking cessation during pregnancy: an overview and update** *- Michael Ussher*		
10:00 - 11:20	**Symposium 5** **Smoking in Pregnancy: Global Perspectives** *chair: L. Bauld* Improving the effectiveness and reach for smoking cessation support in pregnancy: findings from a 6-year research programme *- T. Coleman* Treating Tobacco Use and Dependence During Pregnancy *- C. Oncken* Acceptability of financial incentives for smoking cessation in pregnancy by the general population in France. *- I. Berlin* A Multifaceted Strategy to Implement Brief Smoking Cessation Counselling During Antenatal Care in Argentina and Uruguay: A Cluster Randomized Trial *- L. Llambi*	**Symposium 6** **What works in developing and implementing tobacco control policies? "Realist" reviews as a new method to integrate scientific evidence** *chair: M. Willemsen* Principles of realist review of scientific literature *- A.E. Kunst* Limiting youth access to tobacco products and banning tobacco displays at point of sale: a realist systematic review of the national-level policy process. *- T.G. Kuijpers* Tobacco Control at the Local Level: A Realist Review of Smoke-free Interventions *- M. Mlinarić* A realist-informed systematic review of implementing school tobacco control policies: what works, how and why? *- A.K. Linnansaari & P.L. Lindfors*	Workshop 3 Judith Prochaska: **Smoking and Substance Abuse**
11:20 - 11:45	Coffee Break (Corridor)		

TIME	AUDITORIUM	PHARMACO	UBLG
11:45 - 12:45	2.1 L **Evaluating tobacco control policy** *chair: R. West*	2.1 M **Social media and mHealth** *chair: J. Prochaska*	2.1 S **Smoking cessation in specialist populations** *chair: A. Pankova*
	The Public Health Impact of Pictorial Health Warnings on Cigarette Packages *- D. Levy*	Assessing the effectiveness of social media, compared to traditional advertising methods, in recruiting eligible participants to research studies *- S.G. Ferguson*	Tailoring Smoking Cessation Services to Indigenous Populations *- P.M. Smith*
	The impact of the TPD II on the austrian quitline´s callvolume 3 months after implementation of the law *- S. Meingassner*	The acceptability of and real time engagement with a context-aware smartphone smoking cessation app (Q Sense) *- F. Naughton*	"Planting a seed": A qualitative study of experiences of smoking and smoking cessation amongst adults with a substance misuse disorder *- H. Walsh*
	The introduction of smoke-free prisons in England: Questionnaire and focus group data collected from four early adopter establishments prior to a comprehensive smoke-free policy *- L.R. Jayes*	Using principles from serious games to boost engagement with a smoking cessation app *- S.G. Ferguson*	Smoking cessation outcomes among sexual and gender minority and nonminority young adult smokers participating in a Facebook trial *- J. Thrul*
	Violence on mental health wards following the implementation of a smoke-free policy *- D. Robson*	Multicentre, randomised controlled trial of a low-cost, smoking cessation text message intervention for pregnant smokers (MiQuit) *- J. Emery*	Place of Tobacco Dependence Treatment in Psychiatric Healthcare System *- M. Hollý*
12:45 - 14:15	Satellite symposium sponsored by Pfizer **Smoking and mental health: new horizons for smoking cessation** Chair: Prof. Eva Králíková (Prague)		
	Welcome and Introduction *Prof. Eva Králíková (Prague)*		
	Smoking and mental health, what's the story? *Prof. Henri-Jean Aubin (Paris)*		
	Smoking cessation treatment: an evidence update *Prof. Robert West (London)*		
	Policies for the treatment of tobacco dependence in Europe - lay of the land *Prof. Luke Clancy (Dublin)*		
	Q&A *All*		
13:15 - 14:15	Lunch (Corridor)		

14:15 - 14:45	**Poster Session 6:Predicting and changing tobacco use in youths** (Corridor 2A) *chair: C. Clair*
	Poster Session 7: Secondhand Smoke and the protection of children (Corridor 2B) *chair: O. Maynard*
	Poster Session 8: Novel approaches and insights: from epidemiology to research practice (Corridor 1A) *chair: K. Zvolska*
14:45 - 15:15	**Poster Session 9: Smoking, family and pregnancy** (Corridor 2B) *chair: L. Bauld*
	Poster Session 10: Exploring nicotine dependence and the impact of tobacco use (Corridor 1B) *chair: E. Ratschen*

Sept. 09 - CONFERENCE DAY 2

TIME	AUDITORIUM	PHARMACO	UBLG
15:15 - 15:45	**Keynote Lecture** *chair: M. Willemsen* **New approaches to tobacco control (including zero/low-nicotine cigarettes)** *- Dorothy Hatsukami*		
15:45 - 16:15	Coffee Break (Corridor)		
16:15 - 17:35	**Symposium 7** **Improving tobacco control by introducing plain packaging, promoting electronic cigarettes, and reducing cigarette affordability. Recommendations from the International Tobacco Control (ITC) Project** *chair: M. Willemsen* What Can Europe Expect from the Australian Experience of Plain Packaging? ITC Project Findings on Pack Appeal, Health Warning Impact, and Support for Plain Packaging *- G.T. Fong* Understanding of nicotine's role in harmfulness and addictiveness of smoking: Changes across the ITC 4 Countries Surveys over time *- A.McNeill* Does the regulatory environment for e-cigarettes influence the effectiveness of e-cigarettes for smoking cessation? Longitudinal findings from the ITC Four Country Survey *- S. Hitchman* Is tobacco in the UK becoming more affordable? Data from the ITC UK Survey (2002-2014) *- T. Partos*	**Symposium 8** **Discrepancies between regulatory texts of smoking cessation medications, the evidence and clinical practice: A comparison across four countries.** *chair: R. Bittoun* The dilemma with prescribing instructions and contradictory evidence for smoking cessation products: an Australian perspective. *- R. Bittoun* Smoking cessation treatment in Switzerland: toward more permissive prescriptions with the help from the new national guidelines *- C. Clair & J. Cornuz* Discrepancies between regulatory texts of smoking cessation medications, the evidence and clinical practice: Czech Republic *- E. Kralikova* Discrepancies between marketing licenses of smoking cessation medications and clinical practice in France. *- I. Berlin*	Workshop 4 Amanda Amos: **Smoking and Disadvantage**
19:00 - 22:00	**Conference Dinner** Great Monastery Restaurant		

Sept. 10 - CONFERENCE DAY 3

TIME	AUDITORIUM	PHARMACO	UBLG
8:30 - 9:00	REGISTRATION (Corridor)		
9:00 - 10:00	3.1 L **Protecting children and adolescents from tobacco use** *chair: T. Partos*	3.1 M **Genetics, biomarkers and smoking behaviour** *chair: T. Korhonen*	3.1 S **Tobacco treatment to improve mental health** *chair: S. Ferguson*
	Trends in smoking behavior in adolescents and young adults in the Netherlands: increasing age at initiation? *- P.A.W. Nuyts*	Smoking Status Phenotype Refinement in the Finnish Population Using DNA Methylation Biomarkers. *- S. Bollepalli*	Offer and use of clinical support for smoking cessation in smokers with anxiety and depression: a cross sectional survey *- J. McGowan*
	Impact of age at smoking initiation on smoking-related morbidity and all-cause mortality *- S.H. Choi*	Finnish GWAS highlights the connection between neurotrophin signaling pathway and smoking *- J. Hällfors*	Secondhand tobacco smoke exposure and depressive symptoms during pregnancy *- A. Brinzaniuc*
	Unravelling the black box of anti-tobacco policies at schools and their impact on adolescents' smoking: a realist-informed systematic review *- M. Schreuders*	Neuregulin Signaling Pathway in Smoking Behavior *- R. Gupta*	Smoking cessation in substance misuse settings: exploring attitudes of staff who smoke or have recently stopped. *- M.J. Duaso*
	The short term effects of ASPIRA – a computer-assisted smoking prevention program for adolescents in Tirgu Mures, Romania: A cluster randomized parallel group prevention trial *- V. Năddăsan*	No association between polymorphisms within the cholinergic receptors genes and smoking cessation treatment outcome. *- V. Adamkova*	An integrated smoking cessation intervention for mental health patients: a randomised controlled trial *- J.A. Bowman*
10:00 - 11:00	Smokefree Policies and Policy Enforcement to Prevent Secondhand Smoke Exposure among Foster Care Children in Romania *- L. Ferencz*	A Study of Rare and Low Frequency Genetic Variant Associations with Nicotine Clearance Rate *- J. Buchwald*	Workshop 5 Ivan Berlin & Stephen Heishman: **How to give a good scientific talk**
	A Randomised Controlled Trial of a Complex Intervention to reduce Children's Exposure to Secondhand Smoke in the Home *- E. Ratschen*	Do genetic risk factors for cannabis and smoking predict e-cigarette and water pipe use? *- J.M. Vink*	
	Motivating Activities as Protective Factors in Adolescents' Smoking Behavior *- B. Szabó*	Evidence for a causal effect of smoking on caffeine consumption: a Mendelian randomisation analysis in the UK Biobank *- M.R. Munafo*	
		Smoking and cancer among monozygotic discordant twin pairs: The Nordic Twin Study of Cancer *- T. Korhonen*	
11:00 - 11:30	Coffee Break (Corridor)		
TIME	**AUDITORIUM**	**PHARMACO**	**UBLG**
11:30 - 12:30	3.2 L **Treatment optimisation** *chair: E. Kralikova*	3.2 M **Assessing e-cigarette use** *chair: F. Naughton*	3.2 S **Nicotine dependence and abstinence** *chair: L. Brose*
	Smoking treatment optimisation in pharmacies (STOP): a cluster randomised pilot trial of a training intervention *- V.W. Madurasinghe*	Results from an e-cigarette pilot test in 25 USA middle schools: Catch Clean Air *- S. Kelder*	The Effect of Acute Abstinence on Task Performance in Smokers *- M. Grabski*
	Evidence that self-rewards boost cessation in community based stop smoking services: A randomised controlled trial. *- E.M. Brown*	Young adults' perceptions of e-cigarettes: a qualitative study. *- M. Lucherini*	Nicotine dependence moderates the role of weight concerns as a predictor of smoking cessation *- E.-L. Tuovinen*
	Perspective of using genetic markers in the choice of pharmacological treatment of smoking *- J. Scholz*	Positive Outcome Expectations of Electronic Cigarette Use: A Concept Mapping Study *- E. Soule*	Predictors of postnatal smoking relapse intent in a sample of Romanian couples *- C.I. Meghea*
	The effect of varenicline and nicotine patch on smoking rate and satisfaction with smoking: An examination of the mechanism of action of two pre-quit pharmacotherapies. *- S.G. Ferguson*	E-Cigarettes Use Among Medical Students In Slovakia *- J. Babjakova*	"There's no point in us stopping together… it would be a nightmare": A qualitative study of couple dynamics during smoking cessation *- C.E. Smith*
12:30 - 12:45	**Closing ceremony and prizes** *Ann McNeill, Ivan Berlin,* *Eva Kralikova/Alexandra Pankova*		
12:45 - 13:30	Lunch (Corridor)		

Thursday
September 8, 2016

AUDITORIUM hall

9:15 – 9:45
Keynote Lecture

Marcus Munafò /Bristol, GBR/:
Pathways between smoking and mental health

Smoking and mental health problems are highly co-morbid, and understanding whether these associations are causal, and if so in which direction they operate, is clearly of both scientific and clinical importance. However, identifying causal relationships is complicated by strong confounding by socioeconomic and lifestyle factors. Methods that go beyond statistical adjustment for potential confounders may support stronger causal inference, in particular if results obtained using different methods triangulate. I will describe some of these methods, including negative control, cross contextual and Mendelian randomisation techniques) in the context of smoking and mental health and highlight interesting new directions which may challenge some assumptions about the nature of this relationship.

9:45 – 11:05
Symposium 1 - Smartphone applications for smoking cessation: development and testing

This symposium will describe the development and testing of four smartphone app-based interventions for smoking cessation. Key topics will include app development to meet clinical practice guidelines and optimize user engagement, the incorporation of novel technologies such as wearables, and the design and conduct of randomized clinical trials. Dr. Reuven Dar from Tel Aviv University will discuss a new app that interacts with wearables to identify smoking behavior and deliver cognitive behavioral therapy: SmokeBeat. Findings from a pilot study will be presented including examples of the rich data generated by the app. Dr. Elizabeth Edwards from Barts and the London School of Medicine and Dentistry will present a smartphone game for smoking cessation: Cigbreak. Recent developments and findings from qualitative testing by smokers will be discussed. Dr. Roger Vilardaga from University of Washington will discuss a smoking cessation app tailored to people with chronic mental illness: Learn to Quit. Findings from initial user interface and 30-day N-of-1 trials with a comparison app will be presented. Dr. Kathleen Garrison from Yale University will present findings from a randomized controlled trial of a smartphone app for mindfulness training for smoking cessation: Craving to Quit. The app includes experience sampling and was compared to a control app providing only experience sampling. Together these reports highlight the usability, feasibility and potential efficacy of smartphone-based treatments for smoking.

R. Dar /Tel Aviv, ISR/:
Smokebeat: A novel smoking cessation app utilizing big data over wearables

SmokeBeat is a novel app designed for use with smartwatches and wristbands for delivering cognitive behavioral treatment (CBT) for smoking cessation. SmokeBeat is powered by a data analytics software platform, which processes information from the sensors embedded in wearables. SmokeBeat relies on an original algorithm to identify in real time, accurately and reliably the hand-to-mouth gestures that characterize smoking a cigarette and distinguish them from similar gestures (e.g., eating, drinking, shaving, smoking, tooth brushing). This unique ability of SmokeBeat to identify smoking can be used to generate data analytics on a vast number of smoking parameters and to distill from these data both general and personal smoking patterns. Thanks to its ability to detect smoking in real time, SmokeBeat does not depend on users registering every smoking event, as do all other current apps. This unique feature enables SmokeBeat to increase smokers' awareness and counter the tendency of the smoking habit to become automatic and "mindless." Moreover, by analyzing individual smoking patterns over time, SmokeBeat can predict when smoking is likely to take place and alert the smoker, as well as suggest means to halt or shorten the duration of the next cigarette. The smoking patterns of individual users are identified by running machine-learning algorithms on the data collected, which include information on location context, social setting, temporal patterns, etc. Findings from a pilot study of SmokeBeat demonstrating its accuracy in detecting smoking gestures and examples of the rich data generated SmokeBeat's backend platform will be presented.

E.A. Edwards /London, GBR/:
Cigbreak, a novel smartphone game for smoking cessation

*Edwards EA *, Rivas C **, Steed L *, Sohanpal R *, Caton H ***, Walton R **
** Centre for Primary Care and Public Health, Bart's and The London School of Medicine andDentistry, London, UK*
*** Faculty of Health Sciences, University of Southampton, Southampton, UK*
**** Department of Computing and Information Systems, Kingston University, London, UK*

Introduction: Over 400 smoking cessation apps are currently available, however most are not developed in collaboration with public health practitioners or users and few incorporate validated behaviour change techniques. 'Gamification' is effective in promoting healthy behaviour and delivering health promotion advice, however, there are no dedicated smartphone games for smoking cessation.

Objectives: To use gamification techniques to develop a novel smoking cessation game implementing validated behaviour change methods.

Methods: The app has been developed iteratively and collaboratively in the UK and US with public health practitioners, game designers, health psychologists and seventy-three smokers invited through ten patient participation groups. Qualitative analysis of the feedback used a framework approach.

Results: Players found the app to be an engaging and motivating way to deliver smoking cessation advice, providing helpful distraction from smoking. Over 84% of participants would play the app again and recommend it. Emergent themes such as more focus on health benefits and personalization has led to further development. Players would be happy to obtain this app from their Doctor or smoking cessation program.

Conclusion: A dedicated game to promote smoking cessation has potential to distract smokers during cravings and deliver smoking cessation advice. Iterative collaborative development has ensured the game is engaging and effective. Large-scale uptake could have an enormous Public Health impact. We plan to conduct a randomized controlled trial against clinical outcomes. Recommendations for practice or policy: There is a need for collaborative development, clinical evaluation and regulation of health apps to ensure effective and safe interventions.

K.A. Garrison /Yale, USA/:

Recruitment, engagement and retention in a randomized controlled trial of a mindfulness training smartphone app for smoking cessation

*Garrison KA *, Pal P **, O'Malley SS *, Brewer JA *,***
** Yale School of Medicine, Department of Psychiatry*
*** University of Massachusetts Medical School, Department of Medicine and Psychiatry*

The current analysis evaluated recruitment, engagement and retention in a small randomized controlled trial of a smartphone app for mindfulness training for smoking cessation: Craving to Quit. The app uses experience sampling to query smokers' behavior and experience in real time. The trial compared Craving to Quit to a control app that provided only experience sampling. Enrollment included: 5300 accessed online screening, 6% were excluded for not having a smartphone, 510 were randomized. Enrollment was achieved mainly by Google ads (48%). Enrollment was increased midway to adjust for a high attrition rate (24%). 12 subjects/week were randomized over 9 months. Resulting demographics: 30/70% male/female; 50/50% iPhone/Android; mean age 42±12 years; 79% white; 80% college/some college; 69% full/part time employed. Subjects smoked 17±8 cigarettes/day; mean age of initiation 17±6 years, mean 5±3 prior quit attempts. No group differences were found on demographics. Subjects were allocated to experimental (n=247) or control (n=263) apps. A comparable number of subjects per group completed day 1 (55%, p=.12), and of treatment starters, groups did not differ in number of active days (16±8 of 22 days, p=.08) or treatment completers (58% p=.09). Other measures of engagement will be discussed. A high 6 month follow-up was achieved (76%), comparable between groups (p=.34), and was greater for treatment starters (85%). Recruitment and retention strategies will be discussed to inform the development of other mHealth studies.

11:30 – 12:30
Session 1.2 L - Tobacco policy, regulation and e-cigarettes

C.L. Backinger /USA/:
The U.S. Food and Drug Administration's "Deeming Rule" and Tobacco Regulatory Research

On May 5, 2016, the FDA finalized a rule, "Deeming Tobacco Products to be Subject to the Federal Food, Drug and Cosmetic Act" (Deeming Rule) which extends the FDA's authority to include the regulation of electronic nicotine delivery systems (such as e-cigarettes and vape pens), all cigars, hookah (waterpipe) tobacco, pipe tobacco and nicotine gels, among others. The final rule goes into effect on August 8, 2016 and the FDA will be able to review new tobacco products not yet on the market; help prevent misleading claims by tobacco product manufacturers; evaluate the ingredients of tobacco products and how they are made; and communicate the potential risks of tobacco products. Other provisions include, but are not limited to include covered products will not be allowed to be sold to persons less than 18 years or sold in vending machines except in adult-only facilities, and free samples are will not be allowed. Beyond these foundational aspects which are automatically in force based on the Tobacco Control Act, there are additional areas where FDA can take further regulatory action through notice and comment rulemaking such as development of product standards that would be appropriate for the protection of public health including changing the nicotine yields of the product, reducing or eliminating other constituents, and restricting the sale and distribution of a product. This presentation will provide an overview of the Deeming Rule and discuss areas of research that would inform FDA's future regulatory activities addressing these newly deemed tobacco products.

S. Leischow /Scottsdale, USA/:
ENDS in Social Media: Cross-Platform Analyses Using the SMILE System

Y. Zhan, R. Liu, Q. Li, D. Zeng, S. Leischow

The rapid growth of online communities and social media has led to new platforms for electronic nicotine delivery systems (ENDS) users to share information and experiences. Online user-generated content provides a valuable approach to study what specific topics are being discussed regarding ENDS, including the introduction of new products, experiences with existing products, and user characteristics. Moreover, because of the variety of different social media, it is possible that different topics are being discussed on different social media platforms (eg Twitter, Facebook, Reddit, etc). In order to better understand the nature of social media discussions regarding ENDS, our team has developed an online search and analysis system called SMILE (Social Media-based Informatics pLatform for E-cigarette regulatory research). METHOD: Analyses of three different social media platforms (Reddit, Twitter, and JuiceDB) resulted in over 61,000 posts. Using natural language processing and topic modeling, patterns of comments emerged for each social media platform and across platforms. RESULTS: Reddit as a forum has much more user discussions and interactions than the other two platforms, particularly discussions on product characteristics (eg flavors) and product regulations (eg deeming). For example, when discussing ENDS regulation, 61% of Reddit users opposed regulation, 9% advocated regulation and 31% were neutral. And on Juice DB, we identified 9 flavor categories. Specific posting comparisons and patterns will be presented. DISCUSSION: The SMILE system allows for comparison of multiple social media platforms. User-generated content about ENDS have commonalities and differences across different social media platforms, which could be studied via topic modeling techniques. Results show discussions on specific products and processes that can be assessed in real world environments (e.g. by assessing purchase data) and that can inform product regulation.

F.J. Chaloupka /Chicago, USA/:
Prices, Taxes and the Demand for Electronic Nicotine Delivery Systems

F.J. Chaloupka, J. Huang, S.L. Emery, M. Pesko, J. Tauras, J. Drope, M. Stoklosa

BACKGROUND - Sales and use of electronic nicotine delivery systems (ENDS) have increased rapidly over the past several years. Concerns about the rise in use, particularly among youth, have led many governments to consider taxing these products, although few have actually implemented taxes to date. How and at what level these products should be taxed is the subject of considerable debate, with some advocating taxes equivalent to cigarette taxes and others suggesting little or no tax.

METHODS - Data from three national U.S. samples and data from six European Union countries are used to estimate the price elasticity of demand for ENDS. First, we use quarterly, market-level scanner data on ENDS sales volume and value from 52 U.S. markets to estimate the impact of ENDS prices on sales, as well as to estimate the impact of cigarette prices on ENDS sales. We then match these ENDS prices to data from nationally representative online survey on ENDS use conducted in 2013 in order to assess the impact of ENDS prices and cigarette prices on ever use and current use of ENDS. Similarly, we match the ENDS price data to data on youth ENDS use from the 2014 and 2015 Monitoring the Future Surveys. Finally, we use comparable country-level ENDS prices and sales data from six European Union countries to estimate the impact of ENDS prices on sales in these countries.

RESULTS - We find consistent evidence that increases in ENDS prices significantly reduce ENDS sales, with mixed evidence on the effects of prices on the prevalence of ENDS use. In addition, we find mixed evidence concerning the impact of cigarette prices on ENDS sales and use. Higher ENDS prices are consistently associated with reduced ENDS sales in the analyses that employ scanner data. In the individual-level analyses, we find that higher disposable ENDS prices are associated with significantly lower odds of ever use, but we do not find a statistically significant association between disposable prices and current u

D. Levy /Georgetown, USA/:
A Decision Theoretic Model of E-cigarette and Cigarette Use

D.Levy&, R. Borland%, KM. Cummings, G. Fong**, D. Abrams***, R. Naiura****
& Department of Oncology, Lombardi Comprehensive Cancer Center, Georgetown University Medical Center, Washington, DC, USA
%VicHealth Centre for Tobacco Control, The Cancer Council Victoria, Melbourne, Victoria, Australia
** Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC, USA*
*** Department of Psychology, University of Waterloo, Waterloo, Ontario, Canada*
**** Schroeder Institute for Tobacco Research and Policy Studies at Truth Initiative, Washington, DC, USA*

The impact of e-cigarette use on population health will depend on how it influences cigarette smoking; harm is reduced if smokers vape to quit smoking or vape instead of smoking, but is increased if cigarette smokers delay cessation from smoking as a result of e-cigarette use or if individuals who would not have otherwise smoked initiate e-cigarette use and progress to smoking. While it is essential to better understand the public health implications of e-cigarette use, data on use patterns, especially long-term use, is limited. In the absence of the needed data, modeling can provide the structure to analyze likely trends, the factors influencing trends, and the information needed to inform regulation.

This presentation describes a decision-theoretic model of the population impact of e-cigarette use on cigarette smoking. A cohort -based model is used to show thee effects on youth and adults, particularly young adults of e-cigarette use. We review the literature to provide the initial parameters of the model and conduct sensitivity analysis around those parameters.The model considers the trade-off between potential harm-reducing and harm-increasing effects of e-cigarette use.

The model of shows that, while vaping leads to some smoking by those who would have otherwise quit and some smoking initiation by those who would not have otherwise smoked, the negative public health impact is likely to be offset by the benefits from greater use of e-cigarettes by cigarette smokers, who smoke less or not at all. The public health gains are seen over a wide range of plausible parameters.

The model shows the importance of strong policies to discourage cigarette smoking, and the potential role of policies to regulate product content and marketing of e-cigarettes. In developing future policy, better information is needed on the risks of exclusive and dual e-cigarette use, short-term e-cigarette use and resulting transitions to long-term use of e-cigarettes and cigarettes.

14:30 – 15:00
Keynote Lecture

Eva Králíková /Prague, CZE/:
Evidence based treatment of tobacco dependence in Europe

15:30 – 17:00
Symposium 3 - E-cigarettes: Making sense of new data from 2015-2016

E-cigarettes (EC) are a fast-emerging class of nicotine products that have generated much debate and controversy. The symposium will review recent data on current patterns of e-cigarette use among adults and youth, their efficacy and safety. Prof. Robert West will provide estimates on the population impact of the growth in e-cigarette use in England. Prof. Linda Bauld will present the novel data on the extent of e-cigarette use in young people in the United Kingdom in the context of data from other countries. Jamie Hartmann-Boyce will preview the 2016 update of the Cochrane review of efficacy of e-cigarettes in smoking cessation adverse events associated with e-cigarette use. Dr. Lynne Dawkins will review new data on nicotine delivery from EC. Dr. Konstantinos Farsalinos will present recent evidence on the safety/risk profile of e-cigarettes. Prof. Peter Hajek, as discussant, will provide perspective on the data presented, and their implications for public health.

R. West /London, GBR/:
Estimating the population impact of the growth in e-cigarette use in England: latest findings from the Smoking Toolkit Study

R. West, J. Brown, E. Beard
Health Behaviour Research Centre, Department of Epidemiology and Public Health, University College London, UK

Neither randomized controlled trials (RCTs) nor correlational studies can provide direct population estimates of the impact of e-cigarettes on quitting rates – the most important issue from a population health perspective.The Smoking Toolkit Study in England provides monthly estimates of these parameters based on surveys of representative samples of smokers and those who have stopped in the past 12 months. Each new monthly sample contains approximately 350 past-year smokers from which estimates are derived of 1) prevalence of e-cigarette use among smokers, 2) proportion of quit attempts that involve use of an e-cigarette, 3) proportion of smokers who attempted to quit in the past 12 months, 4) proportion of those attempts where the respondent is still not smoking. ARIMAX modelling involving the 4 time series, adjusting for other events and tobacco policies, trends, autocorrelation and seasonality provides the best direct estimate of how changes in e-cigarette use have affected cessation rates. This paper will present findings up to mid-2016 on associations of 1) and 2) with 3) and 4).Data available up to end 2105 show no clear associations between e-cigarette use while smoking and rate of quit attempts, but that the increase in use of e-cigarettes while smoking and in quit attempts has been associated with an increase in the population success rates of quit attempts. The data will be used to estimate the population impact of the growth in e-cigarette use on smoking prevalence, and project the future impact under different scenarios.

L. Bauld /Stirling, GBR/:
Use of electronic cigarettes by young people

L. Bauld, A. Ford, A.M. Mackintosh, K. Angus

Institute for Social Marketing and UK Centre for Tobacco and Alcohol Studies, University of Stirling, UK

Aim: To assess the extent of e-cigarette use in young people in the United Kingdom in the context of data from other countries. Methods: A systematic review of studies from the United Kingdom that report ever, current or regular use of e-cigarettes in young people aged 10-18 through routinely collected data or published articles, supplemented by a rapid review of available prevalence data from the USA and Europe. Results: In 2014, five representative surveys of young people aged between 10 and 18 were conducted in different parts of the UK (UK wide, Great Britain, Scotland and Wales) assessing ever or regular (at least monthly or at least weekly) use of electronic cigarettes. The three largest surveys found ever use amongst 12% of youth with between 1-3% reporting use at least monthly. Regular use in never smoking young people was 0 in most surveys with 52 never smokers

reporting ever use in Wales. Data from other countries, in particular the USA, fails to distinguish ever or recent use of e-cigarettes from regular use in young people. There is no existing evidence from the UK or elsewhere that suggests e-cigarette use causes the uptake of tobacco smoking. Conclusion: A significant proportion of young people in the UK and in some other countries have tried an e-cigarette at least once, and the most recent data suggests rates of experimentation continue to rise. Direct comparison between UK data and that collected in other countries is hampered by a lack of standard measures to assess patterns of use. Recommendations for core questions for use in youth surveys are outlined.

J. Hartmann-Boyce /Oxford, GBR/:
E-cigarettes: update on evidence of efficacy for smoking cessation

This session will present evidence from the 2016 update of the Cochrane review, "E-cigarettes for smoking cessation." This review was first published in 2014 and will be updated in 2016 to contain recent evidence (results from the review are not yet available but will be by the time of the talk). The review aims to examine the efficacy of e-cigarettes in helping people who smoke to achieve long-term abstinence and to assess the occurrence of adverse events associated with e-cigarette use. It includes randomized controlled trials (RCTs) in which current smokers (motivated or unmotivated to quit) were randomized to e-cigarette or a control condition, and which measured abstinence rates at six months or longer. As the field of e-cigarette research is new, we also include cohort follow-up studies with at least six months follow-up. We include randomized cross-over trials and cohort follow-up studies that included at least one week of e-cigarette use for assessment of adverse events. Our main outcome measure is abstinence from smoking after at least six months follow-up, using the most rigorous definition available (continuous, biochemically validated, longest follow-up). This session will present key results, including an overview of individual studies, meta-analyses where appropriate, and an assessment of the strengths and weaknesses of the evidence base as it stands currently. It will also briefly describe similarities and differences with other systematic reviews in this area.

L.E. Dawkins /London, GBR/:
Blood nicotine delivery from electronic cigarettes: Getting better all the time?

Nicotine delivery from tobacco smoking is rapid, reaching peak venous levels of up to 30ng/mL in 5 minutes. Absorption from Nicotine Replacement Therapy (NRT) products is much slower (>30 mins for cMax between 4-23ng/mL). The slow absorption rate results in low abuse liability of NRT but fast nicotine delivery is important for smokers' satisfaction and craving relief. Other non-combustible products that deliver nicotine more rapidly might increase appeal and prove more efficacious for smoking cessation. This talk will review the evidence on nicotine delivery from electronic cigarettes with a particular focus on pharmacokinetic studies published since 2015. Early studies reported minimal nicotine delivery (e.g. cMax 1.3ng/mL in 20 mins) but these were based on first generation (3-piece) cigalike devices, now obsolete. With the increasing sophistication of devices over time, higher blood nicotine levels have been reported; up to 33ng/mL within 10 minutes of ad lib vaping. Cotinine levels in experienced vapers confirm that nicotine levels can be comparable to those obtained from smoking. Nicotine delivery from liquid to aerosol and blood is directly related to the concentration in the e-liquid but also heavily influenced by device type and settings (cartomiser vs. tank models; power settings), puffing patterns and user behaviour and experience.Under some condition (high nicotine concentration e-liquids, new generation atomisers and experienced users), high blood nicotine levels can be achieved very quickly, matching and even exceeding those reported from tobacco smoking. The advantages and disadvantages of rapid and high level of nicotine delivery will be discussed.

K. Farsalinos /Athens, GRC/:
Update on electronic cigarette safety/risk profile: evaluation of recent literature

Abstract Text: The current presentation will present recent evidence on the safety/risk profile of electronic cigarettes. Chemical studies have evaluated the presence of aldehydes in electronic cigarette aerosol using different power settings, relevant to the development of new-generation devices which provide users with the ability to adjust their performance characteristics. Emphasis will be given to the proper definition of realistic versus dry puff conditions, considering that dry puff conditions are easily detected and avoided by consumers but cannot be detected in a laboratory setting. Metal emissions are expected from electronic cigarettes, considering that the liquid is in continuous contact with metal structures such as the coil material. A risk assessment analysis will be presented, evaluating the level of

metal emissions from previous studies relevant to established safety limits. Chemical studies on liquid composition, assessing the presence of flavoring compounds, contaminants and tobacco-derived toxins will also be presented. Toxicological studies evaluated the effect of electronic cigarette exposure to several different cell lines of the respiratory and vascular systems; results, interpretation and limitations of such studies will be discussed. Recent studies evaluated environmental emissions from electronic cigarette use and bystander exposure to nicotine. The clinical interpretation and significance of the findings will be presented. Finally, clinical studies evaluated the effects of switching from tobacco cigarette to electronic cigarette use on the cardiovascular and the respiratory systems, after a follow-up period of 1 year or more. The presentation will conclude by assessing whether the evidence from recent studies has changed or verified previous estimations about the safety/risk profile of electronic cigarettes.

PHARMACO hall

9:45 – 11:05
Symposium 2 - Beyond the Tobacco Products Directive: Next steps for packaging and labelling

The Tobacco Products Directive (TPD) requires multiple changes to cigarette packaging, such as a minimum pack size, a ban on misleading brand variant names, large pictorial warnings and additional side-of-pack warnings, and also allows member countries to introduce measures beyond the minimum requirements. While these changes will reduce the appeal of the packaging, there is clearly more scope for using the cigarette pack to communicate health messages and deter smoking, which will be the focus of this symposium. The measures discussed include plain packaging, novel health warnings, pack inserts with positive messaging about quitting and promoting self-efficacy to do so, and dissuasive cigarettes.

In the first talk, Dr Rey-Pino will discuss a review of research exploring plain (standardised) packaging, which is permitted by the TPD but is not a mandatory requirement. While health warnings on packs have been compulsory in the EU for approximately 25 years, they typically focus on the long-term health consequences of smoking. Dr Maynard will present findings from an eye-tracking study investigating the effect of immediacy in health warnings. Moving inside the pack, Dr Moodie will then present findings from an online survey with young adult smokers exploring their response to pack inserts designed to inform consumers of the benefits of quitting and promoting self-efficacy to do so. Finally, Prof Gallopel-Morvan will describe findings from a qualitative study exploring young adults' response to dissuasive cigarettes (unattractively coloured or displaying a health warning on the cigarette paper).

J.M. Rey-Pino /Granada, ESP/:
Plain packaging: A literature review

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§ Departamento de Marketing y Comunicación, Universidad de Cádiz, Cádiz, Spain
% Unidad de Tabaquismo. Departamento de Medicina, Psiquiatría y Dermatología. Facultad d Medicina, Universidad de Zaragoza. Zaragoza, Spain

Background
Plain (or standardised) packaging will be required for all cigarettes and rolling tobacco in several European countries (UK, Ireland, France) from 2017. The objective was to explore the impacts of plain packaging on appeal, warning salience, perceptions of harm, as well as smoking behaviour.

Methods
A comprehensive review of research on the influence of plain packaging on the salience of health warnings, appeal of the packaging and the product, perceptions of harm, and smoking-related attitudes and behaviours was conducted.

Results
Over ninety studies were identified. The findings consistently showed that plain packaging decreased the appeal of the pack, the product and positive smoker identity. The findings, in general, also showed that plain packaging increased the salience of health warnings and, at least for darker coloured packs, increased perceptions of harm. Fewer studies explored smoking-related behaviours than perceptions of appeal, harm and warning salience, but the findings provide some evidence that plain packaging is associated with discouraging uptake and cessation-related behaviours.

Conclusion
This review shows that plain packaging may have multiple potential public health benefits. Given that tobacco packaging has become the main marketing tool for tobacco companies, policy makers could effectively put an end to this by introducing plain packaging.

O.M. Maynard /Bristol, GBR/:
The impact of health warning immediacy on visual attention

*OM Maynard *§, H Gove *, J Hoek %, U Leonards *, R Barry *, A Robinson *, MR Munafò *§*
** School of Experimental Psychology, University of Bristol, UK*
§ UK Centre for Tobacco and Alcohol Studies
% Department of Marketing, University of Otago, New Zealand

Background
Consumers have a fundamental right to accurate information about the risks of smoking, with health warnings on tobacco packaging a simple means of communicating these risks. To be effective however consumers need to attend to these warnings. The objective of this study was to examine whether attention to warnings could be increased by changing the location of the warning on the pack or changing the content of the warning to focus on short-term as compared with long-term consequences of smoking.

Methods
Non-smokers (n=26) and weekly smokers (n=25) viewed unfamiliar warnings depicting the short-term and long-term consequences of smoking. Warnings were presented either on the upper or lower half of the pack. The number of fixations to the warning as compared with the branding (calculated as a bias score) was the primary outcome measure.

Results
There was weak evidence for a main effect of warning immediacy (p=0.067), characterised by more attention to the short-term as compared to long-term warnings. A main effect of location was observed (p=0.008), characterised by more attention to warnings when placed on the lower half of the pack. No main effect of smoking status was observed (p=0.813).

Conclusion
The findings suggest that changing the content of the warnings might be an effective method of increasing attention to them, and that attention to warnings is greatest when they are placed on the lower half of the pack, although further research is necessary. This research has implications for warning design.

C. Moodie /Stirling, GBR/:
Young adult smokers' perceptions of cigarette pack inserts with positive messaging

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** Centre for Tobacco Control Research, University of Stirling, Stirling, Scotland*
§ Department of Health, University of Bath, Bath, England
% Public Health Science Directorate, NHS Health Scotland, Edinburgh, Scotland

Background
In Canada tobacco companies are required to include inserts with positive messages about cessation inside all cigarette packs. The objective was to explore smokers' perceptions of these inserts.

Methods
An online survey was conducted with 1766 young adult smokers (16-34 years) in the UK, between January-February 2016, to explore perceptions of the Canadian pack inserts. Participants were asked whether they thought they would read inserts if interested in quitting, and whether they were a good way to provide information about quitting. Three questions assessed to what extent participants agreed or disagreed that having an insert in every pack would make them think more about quitting, help them if they decided to quit, and be an effective way of helping smokers who want to quit. Support for an insert in every pack was also assessed.

Results
Sixty percent thought that they would read inserts if interested in quitting, and 61% that they were a good way to provide information about quitting. Approximately half thought that inserts would make them think more about quitting (53%), help if they decided to quit (52%) and are an effective way of encouraging smokers to quit (53%). Fifty-five percent supported an insert in all packs. Participants who had made a recent quit attempt, or were likely to make a quit attempt in the next six months, were more likely to indicate that inserts could lead to cessation.

Conclusion

Inserts were considered helpful for cessation. Policy makers may wish to use these to supplement on-pack warnings.

K. Gallopel-Morvan /Rennes, FRA/:
Can dissuasive cigarettes influence young peoples' perceptions of smoking?

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Background

In order to counter the attractiveness of cigarettes, Article 11 of the Framework Convention on Tobacco Control mentions the possibility of including a health warning on cigarettes. The objective of this study was to explore perceptions of cigarettes designed to be dissuasive (either displaying a text health warning or pictogram, unattractively coloured, or a combination of these).

Methods

In-depth interviews were conducted with 31 people in France aged 15-25 years (11 daily smokers, 10 occasional smokers, 10 non-smokers, 15 females, 16 males). Participants were shown the different dissuasive cigarettes (displaying the warning 'Smoking kills', a 'skull and crossbones' pictogram, unattractive shades of brown or green, or a combination of all three). Open-ended questions were asked about the attractiveness of the cigarettes, perception of risk, the image of the smoker, and influence on desire to quit or not to start. Discussions were audio-recorded and transcribed. Manual coding and « IRaMuTeQ » software was used to analyse the data.

Results

The different dissuasive elements used were found to increase negative health perceptions (e.g. increase risk), reduce positive smoker image and the perceived pleasure of smoking (e.g. embarrassment of smoking in front of friends), decrease desire to start smoking and increase desire to quit. The most dissuasive cigarette was an unattractively coloured cigarette which displayed both the warning 'smoking kills' and 'skull and bones' pictogram.

Conclusion

This study highlights the importance of the appearance of the cigarette, and suggests that dissuasive cigarettes may be an innovative tobacco control measure for governments.

11:30 – 12:30
1.2 M - Reciprocity of smoking and mental health

J.A. Bowman /Newcastle, GBR/:
Smoking and mental illness: a bibliometric analysis of research output over time

A. P. Metse§, J. Wiggers*§%, P. Wye*§%, L. Wolfenden*§%, J. J. Prochaska**, E. Stockings§§, J. M. Williams%%, K. Ansell*, C. Fehily*, J. A. Bowman*§*
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Background: The prevalence of smoking among persons with a mental illness has remained largely unchanged, and is currently 2-3 times higher than the general population in high income countries. This study examined the volume and characteristics of publications in the field of smoking and mental illness over time.

Methods: A descriptive repeat cross sectional study was conducted of peer reviewed publications in Medline and PsycINFO for 1993, 2003 and 2013. Publications were classified as either data or non-data based, with data based publications being further categorised in terms of study type, population and setting.

Results: 176 publications were included in the review (1993: 30; 2003: 47; 2013: 99). The proportion of data based publications significantly increased, with 57% in 1993, 72% in 2003 and 81% in 2013 (p = 0.03). Data based publications remained predominantly descriptive across all three time points (1993: 71%; 2003: 88%; 2013: 88%), with few publications having a measures or intervention focus (p = 0.68). An increase was suggested in the amount of publications reporting on study populations with multiple diagnostic categories (1993: 12%; 2003: 39%; 2013: 42%), and in research focussed on generalist health care or other settings (1993: 18%; 2003: 35%; 2013: 45%), relative to mental health settings.

Conclusions: Research focussing on the effectiveness and implementation of interventions to reduce smoking among persons with mental illness is needed.

M. Fluharty /Bristol, GBR/:
Association of childhood mental health with adolescent tobacco and substance use: Findings from the Avon Longitudinal Study of Parents and Children (ALSPAC)

M. Fluharty, J. Heron**, M. Munafo**
**MRC Integrative Epidemiology Unit (IEU) at the University of Bristol, Bristol, United Kingdom*
**UK Centre for Tobacco and Alcohol Studies, School of Experimental Psychology, University of Bristol, Bristol United Kingdom*
***School of Community and Social Medicine, University of Bristol, Bristol United Kingdom*

Introduction: Substance use is associated with many psychiatric disorders, but prospective studies are required to help clarify whether these associations are likely to be causal. Poor social cognition is associated with both substance use and poor psychiatric health, but poor social cognition prior to substance use is associated with decreased risk of subsequent use. Given that poor social cognition may relate to later psychiatric health, we explored whether early psychiatric conditions were associated with later substance use, and whether they mirrored patterns of association seen for poor childhood social cognition.

Methods: We used data from ALSPAC (n=3,105), a UK birth cohort study, to investigate prospective associations between childhood psychiatric health, measured using the Development and Well-Being Assessment (DAWBA) instrument, and adolescent substance, measured via self-report. We used logistic regression with and without adjustment for potential confounders.

Results: DAWBA probable diagnosis of ADHD was associated with tobacco (OR 1.25, 95% CI 1.09-1.43) and cannabis (OR 1.16, 95% CI 1.02-1.33) use. Conduct disorder was associated with tobacco (OR 1.25, 95% CI .1.02-1.56), cannabis (OR 1.40, 95% CI 1.14-1.73), and all substance use (OR 1.41, 95% CI 1.08-

1.84). Depression was associated with alcohol use (OR 1.32, 95% CI 1.13-1.55). Generalised anxiety disorder was associated with using all substances (OR 1.40, 95% CI 1.08-1.82).

Discussion: Our results suggest childhood psychiatric conditions are associated with increased risk of adolescent substance use. These findings were in the opposite direction of the associations we previously observed for poor childhood social cognition, which is associated with decreased risk of adolescent substance use. Taken together, these results suggest social cognition and psychiatric conditions have different relationships with substance use behaviours and should be examined separately.

A. Ranjit /Helsinki, FIN/:
Cigarette smoking during adolescence as a predictor of depression on a three year follow up period

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‡ Mental Health Unit, Department of Health, National Institute for Health and Welfare, Helsinki, Finland

Background: The association between cigarette smoking and depressive symptoms is well-established, but informative longitudinal research on adolescent populations is required to evaluate its meaning and test its generalizability.

Objective: To examine the association of cigarette smoking during early adolescence with depressive symptoms in late adolescence.

Methods: We used prospective longitudinal data from FinnTwin12 study including 4905 individuals. Smoking patterns were assessed at age 14 and depressive symptoms at age 17.5. Depressive symptoms were assessed by the 10 item General Behavior Inventory (GBI), where GBI sum score, ranging from 0-30, served to assess depression. Negative binomial regression was used to model the GBI-score at the age of 17.5 with smoking behavior at the age of 14 as this symptom-count outcome variable was over-dispersed with excess zeroes. The analyses were adjusted for potential confounders.

Results: Cigarette smoking during early adolescence predicted depressive symptoms in late adolescence. Compared to never smokers, IRR estimates for tendency to depression were higher among those who had ever smoked 1-50 cigarettes (IRR=1.19, 95% CI= 1.11-1.28) or >50 cigarettes (IRR= 1.49, 95% CI=1.32-1.68). Similarly, occasional smokers (IRR=1.65, 95% CI 1.46-1.87) and daily smokers (IRR=1.44, 95% CI 1.24-1.67) had higher tendency to depression compared to never smokers. These associations remained robust when adjusted with multiple potential confounders (age, sex, school grades, binge drinking, health status, relationship satisfaction).

Conclusion: Cigarette smoking during early adolescence is a significant risk factor for depressive symptoms in later adolescence.

Recommendation: Use of addictive substances during early life should be controlled effectively.

L. Štěpánková /Prague, CZE/:
Changes in depression levels after one-year abstinence from smoking

authors: L. Stepankova, E. Kralikova, K.Zvolska, A. Pankova, P. Ovesna, M. Blaha, L.S. Brose

Background: Smoking is more prevalent among people with depression. Depression may make cessation more difficult and cessation may affect depression symptoms.

Objectives: The aims of this study were to assess the associations between 1) baseline depression and 1-year smoking abstinence and 2) abstinence and change in depression.

Methods: Observational study using data collected routinely in a smoking cessation clinic in the Czech Republic from 2008 to 2014. Aim 1: N=3775 patients; 42.8% reported mild and 21.6% moderate/severe baseline depression levels measured using Beck's Depression Inventory (BDI-II). Logistic regressions assessed if depression level predicted 1-year biochemically verified abstinence while adjusting for patient and treatment characteristics. Aim 2: N=835 patients abstinent at 1 year; change in depression was analysed using chi-square statistics, t-test and mixed methods analyses of variance.

Results: Compared with patients without depression (41.6%), rate of abstinence was similar for patients with mild depression (38.8%, OR=0.84; 95% CI: 0.70 to 1.01, p=0.07) and lower for patients with moderate/severe depression (26.3%; OR=0.53, 95% CI: 0.42 to 0.67, p<0.001).

Across abstinent patients, the majority with baseline depression reported lower depression levels at follow-up. Overall mean (SD) BDI-II scores improved from 9.2 (8.6) to 5.3 (6.1); t(834)=14.6, p<0.001. There were significant main effects of time (F(1,832)=645.8, p<0.001) and baseline depression level (F(2,832)=514.7, p<0.001) on follow-up depression and a significant depression*time interaction (F(2,832)=238.9, p<0.001).

Conclusions: In this smoking cessation clinic, moderate/severe depression at the start of treatment predicted reduced smoking abstinence 1 year later. Patients abstinent from smoking experienced considerable improvement in depression.

15:30 – 17:00
Symposium 4 - Using digital tools to help smokers quit: Results of randomized trials

With wide reach and integration into the lives of users, digital tools (e.g., Internet, text messaging, social media) hold promise to help smokers quit. Yet scientific evidence for the utility of some digital tools is limited and inconclusive. We will present the results of five randomized trials testing the efficacy of digital interventions for smoking cessation. Presentations will focus on strategies used to adapt interventions to a digital format, engagement, and efficacy in helping smokers quit. The first presentation will review three randomized trials testing the efficacy of computer-tailored interventions. Results inform best strategies for computer tailoring of evidence-based interventions. The second presentation will present outcomes from a text-messaging intervention for pregnant smokers. Continuing in a mobile environment, the third presentation will share results of a trial testing the efficacy of a Smartphone application aimed at helping young adult smokers quit. The fourth presentation will present 6 month outcomes from a Facebook-based intervention also targeting young adults. Continuing in a social media environment, the final presentation will present outcomes from a trial testing the efficacy of a Twitter intervention for relapse prevention. A question-and-answer session with the panel of presenters will follow the presentations. All five presentations will highlight lessons learned in carrying out trials with digital tools, unique strategies for measuring engagement in a digital environment, and highlight the verified impact digital media can have on delivering engaging evidence-based smoking cessation interventions.

H. de Vries /Maastricht, NLD/:
Three studies on computer tailored digital interventions to quit smoking

*de Vries H**

**Department of Health Promotion, Maastricht University, Maastricht, Netherlands*

Background: Study 1 tested two different computer tailored (CT) relapse prevention tailored eHealth studies comparing action planning (AP) with action planning plus ecological momentary feedback on self-efficacy and emotions (AP+). Study 2 compares computer tailoring and computer tailoring with counseling with a control group. Study 3 compares text based computer tailoring with video based computer tailoring.

Method: All studies were RCTs with two experimental conditions and one control condition. Overall effects are presented and analyses were conducted to assess potential moderating effects of educational level. Effects on 7D point prevalence and continued abstinence were assessed using multiple imputation (MI), intention to treat (ITT) and complete case analysis (CCA).

Results: A separate study assessing different multiple imputation techniques effects revealed that ITT maybe inferior to MI or CCA. Study 1 analyses showed that AP and AP+ were more effective than the control condition. Study 2 results showed that CT with counseling was not more effective than CT only. The latter was most cost-effective. Study 3 results after 6 and 12 months showed that video tailoring was more effective than the text and control conditions, and most cost-effective. Text tailoring was only more effective at 6 months follow-up.

Conclusions: Effective CT should include action planning and preferably use video tailoring.

L.C. Abroms /Washington, D.C., USA/:
A Randomized Trial of a Text-Messaging Program to Promote Smoking Cessation in Pregnant Smokers

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** Milken Institute School of Public Health, George Washington University, Washington, D.C.*
§ Voxiva, Inc., Washington, D.C.
% Zero to Three., Washington, D.C.

Despite the significant risks of smoking in pregnancy and the successful use of text-based interventions to support smoking cessation in other populations, there are no studies that have documented a similar effect on pregnant smokers. This trial explores how an interactive and intensive text messaging program, Quit4Baby, can promote smoking cessation in pregnant smokers. Women were recruited from Text4baby, an already existing mobile health program that has enrolled more than 1 million pregnant

women and mothers to date. From July 2015 to February 1016, over 35,000 Text4baby subscribers were sent a recruitment text message. Interested and eligible women were enrolled (n= 506) and randomized to receive Text4Baby + Quit4Baby (intervention) or just Text4Baby (control). Participants were surveyed at 1-month, 3-month and 6-months post-enrollment and asked questions regarding their smoking status, quit attempts and experiences with the program. Using an Intention-to-Treat (ITT) analysis at 1-month, where missing are assumed to be smoking, 29.02% of the intervention group and 15.54% of control reported not smoking in the past 7 days (p<.001) and 12.94% of the intervention group and 7.57% of the control reported not smoking in the past 30 days (p<.05). For the intervention group participants, 95.28% reported reading > 75% of the texts and 92.29% would recommend the program to a friend. These results provide support for the efficacy of the Quit4baby program after 30 days of enrollment. Future analysis with the 3-month and 6-month data is necessary to corroborate these results and assess the impact of the program over time.

N.B. Baskerville /Waterloo, CAN/:
Effect of a Mobile Phone Intervention "Crush the Crave" on Quitting Smoking in a Young Adult Population of Smokers: Randomized Controlled Trial

Baskerville NB, Hammond D, Guindon GE, Norman CD, Whittaker R, Burns CM, Grindrod KA, Brown KS

Digital mobile technology presents a promising medium for reaching young adults with smoking cessation interventions. Young adults are the heaviest users of this technology. The primary aim of this trial was to determine the effectiveness of an evidence-informed smartphone app for smoking cessation, Crush the Crave (CTC), on reducing smoking prevalence among young adult smokers in comparison to an evidence-informed printed self-help guide On the Road to Quitting (OnRQ). A parallel randomized controlled trial (RCT) with two arms was conducted in Canada to evaluate CTC. In total, 1599 young adult smokers (19 to 29 years old) were randomized to receive CTC or the control condition OnRQ for a period of 6 months. The primary outcome measure was 30-day point prevalence abstinence at the 6-month follow-up. 56% (n=891) participants completed six-month follow-up. Overall, 83.4% of young adult smokers downloaded CTC or OnRQ with 83% of those using CTC or OnRQ at least once per month. 67.6% evaluated CTC and 76% OnRQ as user-friendly (p = 002). 29% of smokers reported being abstinent at 6 months (31% OnRQ vs. 27% CTC). 26% reported 30-day point-prevalence abstinence (28% OnRQ vs 24% CTC). -. Extent of use of either CTC or OnRQ predicted increased abstinence at 6 months (p =.001). CTC was feasible for delivering cessation support but appeared to be as effective in helping young adults quit smoking as a printed self-help guide. Digital mobile technology smoking cessation interventions may serve as useful alternatives to traditional self-care printed guides.

D. Ramo & J. Thrul /San Francisco, USA/:
The Tobacco Status Project: Outcomes for a randomized controlled trial of a Facebook smoking cessation intervention for young adults

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Social media represents a promising strategy to deliver evidence-based smoking cessation treatment to young adults. We conducted a randomized trial comparing a Facebook smoking cessation intervention to an online control condition. Young adult cigarette smokers (N=500; age 18-25) were recruited online and randomized to either the 3-month Tobacco Status Project (TSP) intervention or a referral to Smokefree.gov. TSP included assignment to a private Facebook group tailored to readiness to quit smoking, daily Facebook contacts, weekly live counseling sessions, and for those ready to quit, 6 Cognitive Behavioral Therapy counseling sessions. The sample was 73% White, 55% female, 87% daily smokers; 48% smoked 10 or fewer cigarettes per day, and averaged 2.8 years smoking; 30% were in precontemplation; 49% contemplation, and 21% preparation for quitting smoking. Posttreatment abstinence was modeled via logistic GEE. At treatment end, biochemically-verified 7-day abstinence was greater for participants in TSP compared to control (8.3% vs 3.3%; OR=2.52; p<.0001). TSP participants

were also more likely to have quit for 24hr, reduce smoking, and were more ready to quit smoking than controls. Only reduction in smoking was still significant at 6 months (quit rates: 6.6% vs. 6.6%). TSP participants averaged 24.3 comments, household income and a past year quit attempt predicted comment volume, and comment volume marginally predicted abstinence at 3 months. A novel Facebook intervention was engaging and associated with abstinence from tobacco. Social media intervention could be disseminated widely, and be helpful even for those not ready to quit smoking.

J.J. Prochaska /Stanford, USA/:
Leveraging Twitter to Treat Tobacco Addiction: Tweet2Quit

JJ Prochaska, C Pechmann§, C Lakon§, K Delucchi%*
**Stanford University, Department of Medicine*
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%University of California, San Francisco, Department of Psychiatry

Quit smoking programs aimed at bolstering social support from family and friends outside of treatment (i.e., extra-treatment) have been largely ineffective at enhancing abstinence. Twitter, which can provide social support beyond one's personal networks, has not been examined for treating smoking. In a 2-group RCT, we tested Tweet2Quit, a Twitter-based quit-smoking intervention. Control participants received 8-weeks of nicotine patch, referral to a web-based quit guide, and instruction to set a quit date. Treatment added participation in a 20-person Tweet2Quit private support group that ran for 100 days with two daily auto-messages: (1) a group discussion topic, and (2) individualized feedback on prior day tweeting. Participants were N=160 smokers, all intending to quit, recruited on Google. The sample was 73% female, 51% partnered, 89% Caucasian, averaging 36 years of age, 18 cigarettes/day, and 17 years smoking. Self-reported sustained abstinence at 60-days post-quit-date was: 20% for control and 40% for Twitter participants, p=.012. Tweet2quit averaged 1,177 tweets per group, with 75% of members tweeting, averaging 59 tweets over 47 days. Tweeting volume related positively to abstinence (p<.001) and was associated with mobile texting, personalization of one's Twitter account, and higher education (all p<.05). Women had lower quit rates, talked more about feelings, and shared more social information, while men focused on cessation tips and nicotine replacement. Tweet2Quit appears efficacious for quitting smoking. Engagement was high and related to abstinence. Future research aims include longer-term follow-up with bio-verification and comparison of co-ed versus women-only groups for addressing and understanding gender differences.

UBLG hall

9:45 – 11:05
1.1 S - Challenges and solutions for tobacco treatment

N. Lindson-Hawley /Oxford, GBR/:
Are we asking questions that have already been answered?
Results from the Cochrane TAG prioritisation survey

N. Lindson-Hawley; J. Hartmann-Boyce

Background
A big challenge that faces evidence based medicine is disseminating findings effectively so that it reaches all of our intended audiences. After all, what is the point of research if nobody finds out about our results?

Objectives
To investigate the questions people still think need to be answered in tobacco control and identify which are true uncertainties and which are not.

Methods
As part of a wider project the first stage of the Cochrane Tobacco Addiction Group (CTAG) prioritisation survey asked the group's stakeholders (researchers, clinicians, policy makers, research funders, commissioners and interested members of the public) to supply up to four questions they feel still need to be answered by tobacco control research. We reduced the supplied questions down to a shorter list by removing duplicates. The reduced list was distributed between four members of the CTAG team, with two people assessing each question to establish if it is still an uncertainty. This was decided based on the systematic review literature and healthcare guidance. Where there was disagreement between two team members a decision was made by a third person.

Results
304 survey respondents submitted 681 questions. After duplicates were removed this resulted in a list of 258. Of these, 60 (23%) were classified already answered, 15 (6%) unempirical and 183 (71%) unanswered. Specific examples from these groupings will be presented. This suggests that there may be a mis-match in the availability of research findings and guidance, and the knowledge that potential users have about tobacco addiction.

Discussion
Despite a wealth of available literature on tobacco addiction stakeholders still believe that there are many questions which still need to be answered. However, not all of these are true uncertainties. One reason for this is likely to be that the research findings are not reaching their intended audiences. Reasons for this and potential solutions will be discussed.

U. Mons /Heidelberg, DEU/:
Demographic ageing and the evolution of smoking-attributable mortality: the example of Germany

U. Mons, H. Brenner

Background: For most of the smoking-caused diseases, incidence increases with age. Thus, the burden of smoking-attributable mortality (SAM) is likely to be strongly influenced by demographic trends. We sought to quantify the evolution of SAM in Germany and explore the impact of demographic ageing.

Methods: SAM was estimated using the current methodology and relative risk estimates as provided by the US CDC. Smoking and mortality statistics from 1992 to 2013 were obtained from the German Statistical Office. From these data, SAM was calculated separately for each cause of death. The impact of demographic ageing was explored by applying direct age standardization. In order to estimate the impact of demographic aging on future SAM, a forward projection until 2035 was modelled (assuming continuation of recent trends in smoking rates and constant cause-specific mortality rates).

Results: Total SAM declined from 139,000 cases in 1992 to 125,000 cases in 2013, but nearly exclusively in men. Differences between actual and age-standardized SAM were particularly striking in men. While the age-standardized SAM in men decreased nearly by half, SAM remained more or less stable in

women. The forward projection of SAM suggests that demographic ageing will lead to a further steady increase in SAM within the next two decades for both men and women. Strategies to curb the smoking-associated disease burden will be discussed.

Conclusion: Especially in men, age-standardized SAM declined much sharper than actual SAM, indicating that decreases were largely compensated by demographic ageing. The increasing number of deaths resulting from the ageing population will lead to a steep increase in SAM for both men and women in the near future if no efforts are taken to curb smoking. Given the still significant smoking prevalence in the elderly there is a tremendous potential to curb the smoking-associated disease burden by intensifying smoking cessation programmes in middle and old age.

S. Leischow /Scottsdale, USA/::
Analyzing Varenicline Use Patterns from Electronic Medical Records

S. Leischow, L. Sangaralingham, N. Shah, R. Seltzer

Varenicline is one of the most effective pharmacotherapies for smoking cessation, yet use patterns in the U.S. have been relatively low – most likely because of the box warning on risks required by the FDA. Because varenicline is sold by prescription only in the U.S., and smoking cessation medications are a fully supported prevention intervention in the Affordable Care Act, it is possible to assess varenicline purchase patterns to determine whether smokers are using enough of the medication to increase their chances of quitting. This is particularly important because multiple studies have shown that longer use of varenicline is srongly associated with quit rates. In this study, we assessed real world medication utilization patterns of varenciline among commercially insured enrollees and examined the relationship between enrollee out of pocket cost and varenicline medication use. We performed a retrospective cohort analysis using pharmacy claims data from Optum Labs Data Warehouse, a large database including administrative claims on over 100 million records. The study population included privately insured Medicare Advantage enrollees who had a varenicline claim between January 2006 and December 2012. Patients were considered to undergo continuous medication treatment if they had a subsequent fill within 40 days of the previous fill date. There were 102,359 prescriptions claims for varenicline during the study period. Of these patients, 69,057 (67.5%) did not receive a subsequent varenicline refill, 24,188 (23.6%) received eight weeks or two fills, and 9,114 (8.9%) received the full 12 weeks (>=3 fills) of verenicline. This usage pattern is similar for patients with high and low copays. Varenicline has been shown to be highly effective in assisting smokers quit tobacco and increasing sustained and directed use of this medication should increase the quit rates of those being prescribed varenicline.

K.A. Mullen /Ottawa, CAN/::
A healthcare no-brainer: health and economic impacts of hospital-initiated tobacco cessation interventions

*KA Mullen§, DG Manuel%, SJ Hawken%, AL Pipe§, D Coyle**, LA Hobler§, J Younger%, GA Wells§, RD Reid§*
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Background: Tobacco-related illnesses are leading causes of death and healthcare-use. The objective of this study was to determine whether implementation of a hospital-initiated smoking cessation intervention would reduce mortality and downstream healthcare utilization.

Methods: A two-group effectiveness study was completed comparing patients who received the "Ottawa Model" for Smoking Cessation intervention (n=726) to usual care controls (n=641). Participants were current smokers, >17 years old, and recruited during admission to one of 14 participating hospitals in Ontario, Canada. Baseline data were linked to healthcare administrative data. Competing-risks regression analysis was used to compare outcomes between groups.

Results: The intervention group experienced significantly lower rates of all-cause re-admissions, smoking-related re-admissions, and all-cause ED visits at all time points. The largest absolute risk reductions (ARR) were observed for all-cause re-admissions at 30 days (13.3% vs. 7.1%; ARR, 6.1% [2.9 to 9.3%]; P<0.001), one year (38.4% vs. 26.7%; ARR, 11.7% [6.7 to 16.6%]; P<0.001), and two years (45.2% vs. 33.6%; ARR, 11.6% [6.5 to 16.8%]; P<0.001). The greatest reduction in risk of all-cause ED visits was at 30 days (20.9% vs. 16.4%; ARR, 4.5% [0.4 to 8.7%]; P=0.03). Significant reductions in

mortality were observed by year one (11.4% vs. 5.4%; ARR 6.0% [3.1 to 9.0%]; P<0.001) and year two (15.1% vs. 7.9%; ARR, 7.3% [3.9 to 10.7%]; P<0.001). The mean covariate-adjusted health services cost, conditional on survival, was $4104 lower for intervention participants over two year follow-up, primarily due to much lower inpatient costs.

Conclusions: Considering the relatively low cost, greater adoption of hospital-initiated tobacco cessation interventions should be considered to improve patient outcomes and decrease subsequent healthcare utilization.

L. Ramström /Täby, SWE/:
Smoking cessation in groups of Swedish daily smokers with respectively without uptake of daily snus use

L. Ramström

Background: In Sweden around a third of those who have started daily smoking do later take up daily snus use, mainly as a means of quitting smoking. This raises questions about differences between cessation conditions in each category. The current study aims at examining in each group the outcome of cessation attempts and levels of nicotine dependence.

Methods: In nationally representative surveys in Sweden (FSI/ITS surveys 2003-2006, n=33641) pathways of tobacco use were established to identify the above groups and actual tobacco use. Former and current daily smokers were asked about time to first cigarette after waking up. Group averages of corresponding Fagerström scores for this item were calculated and taken as measures of strength of nicotine dependence.

Results: In the group of daily smokers without uptake of snus use 53% of the men and 50% of the women had quit smoking completely at the time of the survey. In the group with uptake of snus use the corresponding proportions were 77% respectively 71%. Scores for strength of nicotine dependence were significantly higher in the group with uptake of snus use, both for men and women.

Conclusions: The superior quit ratio in the group with uptake of snus use suggests that snus has a higher effectiveness as a cessation aid than other products/methods. This suggestion is strengthened by the findings that nicotine dependence level were highest in the group with snus use. Policies to encourage substitution of snus for cigarettes should be recommended.

11:30 – 12:30
Workshop 1 - Causality from observational data
Suzanne Gage /Bristol, GBR/

15:30 - 17:00
Workshop 2- -The A-B-Cs of genetics and epigenetics
Anu Loukola & Miina Ollikainen /Helsinki, FIN/

Friday
September 9, 2016

AUDITORIUM hall

9:00 – 10:00
Keynote Lecture - Smoking in pregnancy

Mikael Ekblad /Turku, FIN/:
Effects of prenatal smoking exposure on child's health

Environmental factors, including maternal smoking, can significantly modulate genetically programmed fetal development as smoking exposes the developing fetus to thousands of harmful ingredients. These include nicotine and carbon monoxide, which are shown to cross the placenta and enter the fetal blood circulation. Animal studies have suggested that nicotine exposure during pregnancy modulates neuronal axonal path finding and synapse formation, and carbon monoxide exposure leads to fetal hypoxia, which might interfere with fetal growth and brain development. The role of the other potentially toxic ingredients of tobacco smoke is less well-known. Recently, knowledge of the epigenetic mechanisms influencing the function of the human genome caused by prenatal smoking exposure during fetal life has increased. These kinds of changes could expand up to adulthood or even on to future generations.

Maternal smoking during pregnancy has been strongly associated with prematurity, low birth weight and smaller head circumference at birth. Recent studies have also reported alterations in fetal brain development caused by smoking exposure appearing as volumetric changes in the brain or altered brain function. It has been further suggested that smoking exposure during pregnancy is associated with far-reaching consequences for the exposed offspring, such as increased risks of obesity, asthma, and psychiatric problems.

Michael Ussher /London, GBR/:
Interventions for smoking cessation during pregnancy: an overview and update

Women who smoke during pregnancy are reluctant to seek help with cessation and established interventions such as nicotine replacement therapy and behavioural support have only modest success rates. This keynote lecture will present an overview of the evidence for smoking cessation interventions in pregnancy and will provide an update on promising new work, including investigations of NRT adherence interventions, financial incentives and e-cigarettes.

10:00 – 11:20
Symposium 5 - Smoking in Pregnancy: Global Perspectives

Smoking in pregnancy remains the leading preventable cause of neonatal and maternal mortality in most countries. Every region in the world contains countries where smoking in pregnancy occurs and for this reason the World Health Organisation published guidelines on smoking cessation in pregnancy in 2013. However, these guidelines are not fully implemented in most jurisdictions, and important gaps remain in the evidence on how best to support women and their families to move away from tobacco use. This symposium is submitted by researchers from three continents: Europe, North America and South America. It will outline the latest research findings on this public health priority.

T. Coleman /Nottingham, GBR/:
Improving the effectiveness and reach for smoking cessation support in pregnancy: findings from a 6-year research programme

Coleman, T and Cooper, S on behalf of the NIHR smoking in pregnancy programme team
University of Nottingham, UK

Background
We have completed interconnected research projects on smoking cessation in pregnancy in the UK

Aim
To discuss the implications of findings for service provision

Methods
Using surveys, census and medical records data analyses, quasi-experimental studies, an RCT and economic modelling we evaluated for pregnant smokers:

- factors associated with effective support
- smokers' views on when and how they would be prefer to be supported
- different ways of engaging with cessation support
- NRT efficacy, safety and use in the UK
- provision of self-help cessation support via text message
- economic methods for valuing cessation in pregnancy

Results

- Support is associated with greater efficacy and reaches more pregnant smokers when delivered from clinics
- From 16 weeks gestation smoking behaviour does not change much during pregnancy; interest in receiving support and in cessation remain equally high in early and late pregnancy
- Identifying pregnant smokers with exhaled CO and referring all for support doubles rates of receiving support and stopping smoking
- Text-delivered support is probably (cost) effective for smoking cessation in pregnancy; smokers will activate text support after seeing leaflets or internet adverts
- We produced a dynamic economic model to evaluate cessation in pregnancy from women's, infants' and children's perspectives

Conclusions
Providers should mainly offer cessation support from clinic settings, throughout the whole of pregnancy, using 'opt-out' referrals. Text support is very cheap, so determining whether this is effective is crucial. Our economic model will be freely available and could be used to help the case for pregnancy cessation support to be offered by health services.

C. Oncken /Farmington, USA/:
Treating Tobacco Use and Dependence During Pregnancy

Oncken, Cand Nanovskya, T
UConn School of Medicine, Farmington CT & UTMB, Galveston, TX, USA.

This presentation will focus on the treatment of tobacco use and dependence during pregnancy, in particular the utility of pharmacotherapy for smoking cessation during pregnancy. Maternal cigarette smoking is associated with a number of health risks to mother, infant, and child. Despite the risks, most women continue to smoke during pregnancy. Although medications are recommended for most smokers, a paucity of data exists in pregnant women. Given the significant health risks of smoking during pregnancy, and the potential of pharmacotherapy to increase quit rates, a need exists to examine the safety and efficacy of pharmacotherapy during pregnancy.

We will discuss data regarding prescribing patterns of pharmacotherapy prescribing for smoking cessation during pregnancy, the safety and efficacy of nicotine replacement therapies in randomized placebo-controlled trials, the effectiveness of nicotine replacement therapy in randomized trials as well as in real world settings. We will also discuss new data regarding the nicotine inhaler as well as sustained release bupropion for smoking cessation during pregnancy. The presentation concludes with future directions for research regarding pharmacotherapy interventions to decrease tobacco use and dependence during pregnancy.

I. Berlin /Paris, FRA/:
Acceptability of financial incentives for smoking cessation in pregnancy by the general population in France

BERLIN, N, GOLDZAHL, L**, BERLIN, I ****
**University of Edinburgh, Scotland, UK*
***Université Paris Dauphine, Paris*
****Université P. & M. Curie, Faculté de médicine -Hôpital Pitié-Salpêtrière, Paris, France*

Aim: To assess the acceptability of financial incentives (FI) for smoking cessation during and after pregnancy by the French general population.

Methods: Agreement with FI strategies (Hoddinott et al.2015) was investigated in a representative sample of 1254 French persons. This telephone survey (January 2015) preceded the launch of a randomized, controlled trial on the efficacy of FI to reward smoking cessation among French pregnant women (ClinicalTrials.gov NCT02606227). Four situations were assessed: providing vouchers a) to pregnant smokers to increase smoking cessation rate; b) to increase smoking cessation two months after birth; c) for a smoke free home; d) by health services for meeting smoking cessation targets among pregnant smokers.

Results: 53.34 % agreed or strongly agreed with providing vouchers to pregnant women to reward smoking cessation and 50% suggested that the maximum amount should be at least of 40 €/month. Women, individuals of > 65 years were less likely, but smokers who tried to quit and low educated persons more likely to agree with FI for rewarding abstinence during pregnancy. Respondents of 25-34 years were the most but women less likely to agree than men with FI for non-smoking after birth. Low educated individuals did not support FI for smoke free homes. 25-34 years old respondents, smokers and smokers who tried to quit compared to non-smokers were supportive of providing FI by health services.

Conclusion: Without any previous information, more than half of this French sample would spontaneously support using FI to reward smoking cessation in pregnancy.

Ref: Hoddinott et al. (2015) Perspectives on financial incentives to health service providers for increasing breast feeding and smoking quit rates during pregnancy: a mixed methods study. BMJ Open. 5(11):e008492

L. Llambi /Montevideo, URY/:
A Multifaceted Strategy to Implement Brief Smoking Cessation Counselling During Antenatal Care in Argentina and Uruguay: A Cluster Randomized Trial

Llambi, L Althabe F, Alemán A, Berrueta M, Morello P, Gibbons L, Colomar M, Tong V, Dietz P, Farr P , Ciganda A, Mazzoni A, and colleagues*
**Unidad de Tabaquismo, Clínica Médica A, Hospital de Clínicas, Facultad de Medicina, Universidad de la Republica, Montevideo, Uruguay*
Other authors are from Uruguay, Argentina and the USA.

Introduction: Argentina and Uruguay have a high prevalence of smoking during pregnancy.

However, and despite national recommendations, pregnant women are not routinely counselled in antenatal care (ANC). We evaluated a multifaceted strategy designed to increase the frequency of pregnant women who received brief cessation counselling based on the 5As.

Methods: We randomly assigned 20 ANC clusters to receive a multifaceted intervention to implement brief counselling into routine ANC, or to receive no intervention. Primary outcome was frequency of women who recalled receiving 5As during ANC at more than one visit. Frequency of women who smoked until the end of pregnancy, and attitudes and readiness of ANC providers towards providing counselling were secondary outcomes. Cessation was verified with saliva cotinine.

Results: Overall 6858 women were included at baseline and follow up. The rate of women who recalled receiving the 5As increased from 14.0% to 33.6% in the intervention group (median rate change, 22.1%), and from 10.8% to 17.0% in control group (median rate change, 4.6%; P = .001). The proportion of women who continued smoking during pregnancy was unchanged at follow-up (ROR 1.16, 95% CI: 0.98–1.37; P = .086). No significant changes were observed in knowledge, attitudes, and self-confidence of ANC providers.

Conclusions: The intervention showed a moderate effect in increasing the proportion of women who recalled receiving 5As, with a third of women receiving counselling in more than one visit. However, the frequency of women smoking at the end of pregnancy was not significantly reduced by the intervention.

11:45 – 12:45
2.1 L - Evaluating tobacco control policy

D. Levy /Georgetown, USA/:
The Public Health Impact of Pictorial Health Warnings on Cigarette Packages

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While many countries have adopted prominent pictorial warning labels (PWLs) for cigarette packs, the US and other countries still requires only text-only labels on the cigarette pack that have little effect on smoking-related outcomes. This presentation provides research-based estimates of the public health impact of pictorial warnings on smoking-attributable deaths and maternal and child health outcomes.

Literature was reviewed to identify the impact of cigarette PWLs on smoking cessation and initiation. Based on this analysis, the SimSmoke simulation model was used to estimate the effect of requiring large PWLs on US smoking prevalence, and on smoking-attributable deaths and key maternal and child health outcomes.

Available research consistently shows a direct association between PWLs and increased cessation, reduced smoking initiation, and reduced overall smoking prevalence. SimSmoke projects that PWLs on cigarette packs would reduce US smoking prevalence by 5% (2.5%-9%) relative to the status quo over the short-term and by 10% (4%-19%) over the long-term. Over the next 50 years, the model projects PWLs would avert 652,800 (327,000-1,190,500) smoking-attributable deaths, 46,600 (17,500-92,300) low birth weight cases, 73,600 (27,800-145,100) preterm births, and 1,000 (400-2,000) cases of sudden infant death syndrome.The application and implication of these results will be discussed for European countries.

Based on available evidence, requiring large PWLs on cigarette packs improves population health by reducing smoking prevalence and thereby averting smoking-attributable deaths and adverse maternal and child outcomes.

S. Meingassner /St.Pölten, AUT/:
The impact of the TPD II on the Austrian quitline´s callvolume 3 months after implementation of the law

Sophie Meingassner, Rauchfrei Telefon

Since 20th of May 2016 european cigarette packs have to show pictorial warnings, text warnings and the number of tobacco cessation services in order to inform smokers on health risks of smoking and cessation options. In Austria the number of the austrian quitline Rauchfrei Telefon is mandatory on every pack. Even though not all tobacco companies have changed the packdesign yet, since there is an transition period till May 2017, the call volume of the quitline went up. Not only the numbers of calls are different, also the profile of callers is a different one. The presentation shows the impact of the new packages on the acces to the cost free cessation service Rauchfrei Telefon and www.rauchfrei.at three months after the implementation of the law. It presents the cost free offer of the austrian quitline, including cessation service via telefone, the homepage and the smarthphone app.

L.R. Jayes /Nottingham, GBR/:
The introduction of smoke-free prisons in England: Questionnaire and focus group data collected from four early adopter establishments prior to a comprehensive smoke-free policy

L R. Jayes, E. Ratschen, R L. Murray, J. Britton

Background
In September 2015, the National Offender Management Service (NOMS) announced they will pilot a comprehensive smoke-free policy in a cluster of four prisons in England from April 2016.

Objective
The purpose of this work is to provide initial data on prisoners and staff members' smoking prevalence and perspectives towards going smoke-free in the early adopter sites.

Methods
The four male establishments were visited for three to four weekdays, three months before their smoke-free date. Researchers recruited prisoners during their daily activities and staff members during their monthly full staff meeting. Prisoner and staff member focus groups were held separately. Survey responses were coded, entered, and analysed using IBM SPSS. Focus groups were audio-recorded, transcribed verbatim and analysed using thematic analysis.

Results
Overall, 65% of the 432 prisoners sampled were self-reported smokers, of these smokers, 39% stated they would like to stop smoking. Of the 313 staff members sampled, 12% were smokers and 66% felt exposed to second-hand smoke whilst at work. Compared to 62% of staff members, only 30% of prisoners wanted their prison to go smoke-free. Themes derived from the ten prisoner and six staff focus groups related to fears about going smoke-free which include increased aggression, violence, bullying and loss of a coping mechanism, whilst potential benefits outlined better health for all and a cleaner environment to live and work.

Conclusions
This is the largest study in English prisons to capture current smoking prevalence and behaviours and has fed into NOMS learning prior to the smoke-free policy. Data collection will be repeated three months after the policy to form an evaluation of the pilot sites and provide guidance for the national smoke-free prison roll-out.

D. Robson /London, GBR/:
Violence on mental health wards following the implementation of a smoke-free policy

D Robson, G. Spaducci** Lisa Szatkowski,*** Duncan Stewart**** and Ann McNeill**
**Addictions Department, Institute of Psychiatry, Psychology & Neuroscience, King's College London, UK*
***Health Service Research & Population Department, Institute of Psychiatry, Psychology & Neuroscience, King's College London, UK*
****Division of Primary Care, Queen's Medical Centre, Nottingham,UK ****Department of Health sciences, University of York, UK*

Background: the implementation of comprehensive smoke-free policies is common in hospital settings around the world, though continued smoking in mental health facilities is reported. Fear of violence amongst staff is often cited as a barrier to implementation, though studies evaluating this are limited by short evaluation periods, and lack of consideration of confounding factors related to violence.

Objectives: to determine 1) the proportion of physical violence amongst inpatients that is related to smoking, before and after the implementation of a smoke-free policy and 2) the predictors of violence related to smoking

Methods: we conducted an interrupted time series analysis using ARIMA modeling, 30 months before and 12 months after the implementation of a comprehensive smokefree policy in 4 hospitals in London, England. Implementation of the policy was supported with the introduction of new tobacco dependence treatment and training pathways. We extracted monthly incidents of physical assaults against staff and patients recorded in an electronic incident reporting system, along with information re antecedents, demographic and clinical characteristics.

Results: There were around 4500 incidents of violence perpetrated by 3000 patients during the study period. Rates of overall and smoking related violence reduced over time. Predictors of violence related to smoking will also be presented along with recommendations for the prevention of violence.

Conclusion: Rigorous methods for evaluating, intended and unintended consequences of smoke free policies are needed to reassure staff and address some of the workforce related barriers that impede implementation.

15:15 – 15:45
Keynote Lecture

Dorothy Hatsukami /Minneapolis, USA/:
Reduced Nicotine Cigarettes and Alternative Nicotine Delivery Systems

D. Hatsukami, University of Minnesota, Minneapolis, USA

Two approaches that have been proposed to reduce tobacco harm include reducing nicotine in cigarettes to minimally addictive levels or shifting smokers to less harmful, non-combusted alternative nicotine delivery systems (ANDS). This presentation will provide evidence that the two approaches in tandem will accelerate the goal of eliminating cigarette smoking. To date, studies have demonstrated that relative to normal nicotine content (NNC) cigarettes, reduced nicotine content (RNC) cigarettes leads to reductions in the number of cigarettes smoked, nicotine exposure, and dependence and to increases in number of quit attempts. However, these studies have also shown that a substantial number of individuals report use of usual brand cigarettes in the course of the experiment, signifying that smokers who are switched to RNC cigarettes search for other sources of nicotine. This observation led to an experiment that randomized smokers to very low nicotine content (VLNC) cigarettes vs. NNC cigarettes and provided the opportunity to use ANDS. Comparisons were made on measures of uptake of ANDS smoking behaviors and exposure biomarkers. The results showed that smokers in the VLNC cigarette condition demonstrate greater uptake of ANDS, reductions in combusted product use, reductions in nicotine and toxicant exposure, and higher rates of quit attempts. These two approaches in tandem can address the concerns that have been raised by each of these approaches alone. Implications for policies will be discussed.

16:15 – 17:35
Symposium 7 - Improving tobacco control by introducing plain packaging, promoting electronic cigarettes, and reducing cigarette affordability. Recommendations from the International Tobacco Control (ITC) Project

The International Tobacco Control Policy Evaluation Project (the ITC Project) has been evaluating the impact of tobacco control policies since 2002 in 28 countries across the world, including Europe. The Project uses longitudinal cohort surveys to assess the impact of tobacco control policies on smokers. This symposium will present recent longitudinal findings from the ITC Project related to three important policy domains: plain packaging of tobacco products, electronic cigarettes (e-cigarettes as a cessation tool and smokers' perception and misperception of nicotine), and the price and affordability of tobacco products. Data are collected among European smokers (UK, Netherlands, France) and smokers outside of Europe (United States, Australia, Canada). The symposium will generate recommendations to strengthen tobacco control for European and national policy makers.

G.T. Fong /Waterloo, CAN/:
What Can Europe Expect from the Australian Experience of Plain Packaging? ITC Project Findings on Pack Appeal, Health Warning Impact, and Support for Plain Packaging

Geoffrey T Fong, University of Waterloo, Canada
Co-authors and affiliations: Hua-Hie Yong & Ron Borland (Cancer Council Victoria, Australia), Shannon Gravely & Pete Driezen (University of Waterloo, Canada), Romain Guignard & Raphaël Andler (The French Public Health Agency, France), Marc Willemsen & Gera Nagelhout (University of Maastricht, Netherlands), Ann McNeill & Sara C Hitchman (King's College London, UK), Anne CK Quah (University of Waterloo, Canada)

Background: Two objectives of plain packaging (PP) are to reduce pack appeal and to increase health warning impact. This study compares: (1) pack appeal and warning salience in the UK vs. Australia, and (2) PP support among smokers in UK and France (about to implement PP), and Netherlands (not considering PP) with Australia, which implemented PP in December 2012. EU-Australia comparisons were made at pre-implementation.

Method: We analyzed ITC cohort adult smoker data in the UK (3 waves, 2010-14; N=2,310), France (1 wave, 2012; N=1,717), Netherlands (5 waves, 2011-15; N=3,269), and Australia (2 waves pre-PP, 2010-12; 2 waves post-PP: 2013-14; N=2,563). Measures of pack appeal, noticing health warnings, and support for PP were compared across countries.

Results: Pre-PP UK smokers were more likely to like the look of their pack (64%) than Pre-PP Australian smokers (54%) and less likely to notice the warnings (22%) than Pre-PP Australian smokers (35%). Compared to pre-PP support in Australia (26%), pre-PP support was significantly higher in the UK (32%), no different in France (29%), and significantly lower in the Netherlands (21%).

Conclusion: These results demonstrate (1) the need for PP in the EU to reduce appeal and increase warning impact; and (2) smokers' pre-implementation support for PP is higher (UK) and comparable (France) to Australia before Australia's successful implementation. ITC pre-post studies of Australia's PP suggest that significant benefits will result from PP implementation in UK and France including lower pack appeal (-28%), greater warning salience (+29%), and higher support (+22%) among smokers.

A.McNeill /London, GBR/:
Understanding of nicotine's role in harmfulness and addictiveness of smoking: Changes across the ITC 4 Countries Surveys over time

Ann McNeill, King's College London, UK
Co-authors and affiliations: Sara C Hitchman (King's College London, UK), Pete Driezen & Geoffrey T Fong (University of Waterloo, Canada), K. Michael Cummings (Medical University of South Carolina, US), Ron Borland (Cancer Council Victoria, Australia)

Background: Consumer understanding of the role that nicotine plays in the harmfulness and addictiveness of smoking is critical to their willingness to consider nicotine substitution. We aimed to quantify, over time (2002 to 2014/5) and across countries (UK, US, Australia, Canada), smokers' understanding of these issues using the ITC 4 Country Project. Outcomes included knowing that nicotine: 1) does not cause most of the cancer in smokers and 2) is what makes people smoke.

Method: For each outcome, the adjusted percentage of smokers who were aware of nicotine's role was estimated using weighted logistic generalized estimating equation (GEE) regression models. GEE models controlled for sex, age group, income, education, daily smoking status, survey mode, and time-in-sample. Temporal trends between countries were tested. Estimates were also stratified by education level

Results: Smokers surveyed at least once during the time period were included (n=24,651 unique smokers). Around nine out of ten smokers understood that nicotine underpins their smoking behaviour, but understanding of nicotine's contribution to cancer was poor (between 40-50% believing that nicotine does not cause most of the cancer in smokers), and worse in less well educated groups. No improvements were observed over time but there was a time by country interaction for both outcomes: 1) $p<0.01$; 2) $p< 0.001$. Changes were also seen by education, e.g. knowledge of nicotine's role in cancer improved differentially in the low education group in the UK.

Conclusion: Health professionals and policy makers should address the misunderstanding that nicotine causes most of the cancer in smokers.

S. Hitchman /London, GBR/:
Does the regulatory environment for e-cigarettes influence the effectiveness of e-cigarettes for smoking cessation? Longitudinal findings from the ITC Four Country Survey

Sara Hitchman, King's College London, UK
Co-authors and affiliations: Hua-Hie Yong (Cancer Council Victoria, Australia), Shannon Gravely (University of Waterloo, Canada), Ron Borland (Cancer Council Victoria, Australia), Ann McNeill (King's College London, UK), K Michael Cummings (Medical University of South Carolina, UD), Geoffrey T Fong (University of Waterloo, Canada), for the ITC Project Collaboration

Background: There is evidence that e-cigarettes (ECs) can help smokers quit. However, little is known about the effectiveness of ECs for quitting in different policy environments.

Method: Compare the effectiveness of adult smokers using ECs for quitting compared with quitting unassisted or quitting with NRT and/or prescription medications in two countries with restrictive EC policies (Canada and Australia) versus two countries with less restrictive policies (US and UK).

Data were from the International Tobacco Control surveys, from the US and Canada (2 waves, n=318 and 380, respectively), the UK (3 waves, n=439) and Australia (4 waves, n=662), collected between 2010 and 2014. Smokers at baseline wave who reported making a quit attempt at follow-up were included. The primary outcome was self-reported abstinence for at least 30 days regardless of smoking status at follow-up. Data were analysed using generalised estimating equations.

Results: Between 2010 and 2014, 805 quit attempts were made between waves by 757 smokers in the US and the UK and 1,235 quit attempts by 1042 smokers in Canada and Australia. Compared to unassisted quitting, smokers from the US and the UK using ECs for a quit attempt were more likely to report 30-day abstinence (OR=1.95, 95%CI=1.19-3.21, $p<0.01$), whereas smokers from Canada and Australia were less likely (OR=0.36, 95%CI=0.18-0.71, $p<0.01$).

Conclusion: Use of ECs during a quit attempt is only effective for quitting in countries with less restrictive EC policies (US and UK) suggesting that the benefits of ECs for quitting are dependent on the policy environment.

T. Partos /London, GBR/:
Is tobacco in the UK becoming more affordable? Data from the ITC UK Survey (2002-2014)

Timea Partos, King's College London, UK
Co-authors and affiliations: Ann McNeill & Sara C Hitchman (King's College London, UK), R Hiscock, Anna B Gilmore & JR Branston (University of Bath, UK)

Background: Increasing tobacco price is an important population-level intervention strategy to reduce smoking. To be effective, price increases must impact tobacco affordability with respect to smokers' individual incomes and cigarette consumption. This study tracks individualised tobacco affordability among smokers purchasing tobacco from legal sources in the UK between 2002 and 2014.

Method: Data was from 10 waves of the ITC UK Survey - a longitudinal cohort study of adult smokers with replenishment (N=4487 smokers). Affordability was conceptualised as the percentage of annual

income (adjusted to 2014 values) remaining after tobacco purchases. Multilevel mixed effects regression was used to estimate affordability over time, adjusting for age, income, cigarettes smoked per day, usual tobacco type, and purchase format (pack, carton, or pouch).

Results: There was a slight but significant increase in mean tobacco affordability over time, from 89.9% (89.4 - 90.2) in 2002 to 91.7% (91.2 - 92.3) in 2014. Affordability was significantly lower for both younger and older smokers, for usual RYO and mixed users, those who purchased by the pack, those with lower income, and heavier smokers. The increase in affordability remained significant even after controlling for cigarettes smoked per day.

Conclusion: It is concerning that despite having one of the highest global rates of tobacco taxation, affordability of tobacco is increasing in the UK. There is room to increase tobacco taxes, however policymakers need to balance any increases with measures to support low-income smokers, who are spending relatively more of their income on tobacco.

PHARMACO hall

10:00 – 11:20
Symposium 6 - What works in developing and implementing tobacco control policies?
"Realist" reviews as a new method to integrate scientific evidence

There is great variation between European countries in the extent to which tobacco control policies are adopted and implemented. In addition, within countries, adoption and implementation shows much variations between local entities such as municipalities or schools. It is uncertain why tobacco control policies are adopted and implemented in some places and not in others. Answer to this “why” question can guide future efforts to promote tobacco control at different levels.

In this symposium, we show how relevant scientific evidence can be integrated by using the principles of “realist” review. Central to this novel approach is the focus on “mechanisms” (that point out how policies used to be adopted and implemented) and “contexts” (that point out why adoption and implementation succeeds in some places, but fails in others). After introducing the “realist” approach, we will illustrate its application in three literature reviews that focus on tobacco control policies at, respectively, national, municipal and school levels. Each review will end with a series of evidence-based recommendations on how to promote the adoption and implementation of these policies.

A.E. Kunst /Amsterdam, NLD/:
Principles of realist review of scientific literature

A. E. Kunst, Department of Public Health, Academic Medical Center - University of Amsterdam, Amsterdam, the Netherlands

In the first part, we will introduce the realist approach. This approach has been developed in social sciences in order to evaluate how complex programs work in practice. This approach combines three elements.

- First, it does not simply focus on the question of “whether” a program can be implemented, but on “how” and “why” a program is established in specific situations. This implies a focus on the “mechanisms” underlying adoption and implementation of policies. The key question thereby is how national and local stakeholders respond to prompts to adopt and implement a specific tobacco control policy.

- Second, it explores how the implementation of policies depends on the “context”. Once that mechanisms are understood, one may also understand why the adoption of a national policy succeeded in some countries, but not in other countries. Or why implementation of such a policy first failed, but succeeded 10 years later.

- Third, it has a systematic approach in arriving at generalising lessons, such as the lessons that we wish to transfer from one European country to another. A key role is given to the development and refinement of ‘mid-range theories’ or ‘models of change’. These models take into the lived experiences of policy makers and (potential) smokers.

We will give a few examples on how traditional “systematic” reviews can be enriched on the basis of these three "realist" principles, and how this fuller approach can yield novel lessons for tobacco control.

T.G. Kuijpers /Maastricht, NLD/:
Limiting youth access to tobacco products and banning tobacco displays at point of sale: a realist systematic review of the national-level policy process

T.G. Kuijpers, CAPHRI School for Public Health and Primary Care, Maastricht University, Maastricht, The Netherlands

Background and Objective: Policymakers agree that youth smoking is a serious problem in current day society. Several youth prevention policies can be adopted that limit the access to tobacco (e.g. legal age limit and restricting the number of tobacco outlets) or the visibility of tobacco products (a point of sale display ban). There is a considerable knowledge gap when it comes to the mechanisms that lead to the adoption of these policies. This study aims to discover these mechanisms and explore relevant contexts

by means of a realist systematic review: how and in which circumstances are these policies adopted at national level?

Method: A hypothesized model was constructed (step 1), which was further substantiated and refined by means of a systematic literature search (step 2). Because peer-reviewed literature about the national-level adoption process is scarce, a snowball method was employed to obtain additional grey literature such as policy documents.

Results: Preliminary findings suggest that licensing schemes and bans on vending machines (limiting the number of sale outlets) are often adopted in response to poor enforcement of age of sale laws and in the context of suprastate/supranational structures such as the Synar amendmend (US) and the FCTC (global). There are also indications that weak voluntary youth smoking prevention programs, as part of corporate social responsibility campaigns of the industry, formed the impetus for more stringent governmental regulation when it comes to the adoption and enforcement of legal age limits for the purchase of tobacco.

Conclusion: Only a few scientific studies assessed how national youth tobacco control policies have been adopted. Yet, we found evidence for at least two common mechanisms that explain why, when and where these policies were (not) adopted .

M. Mlinarić /Halle-Wittenberg, DEU/:
How Do Smoke-free Adoption and Implementation processes Work at the Local Level? A Realist-informed Systematic Review

Martin Mlinarić, Institute of Medical Sociology, Medical Faculty - Martin Luther University Halle-Wittenberg, Germany

Background and objective: We examined the conditions, factors, and processes that influence the implementation of smoke-free interventions at the local level, such as cities or municipalities. The research question is how strategies and programs to ban smoking from public places (e.g. restaurants, bars, parks) work at the local level and which mechanisms are crucial for successful implementation.

Method: A realist review (RR) on the scientific evidence regarding smoke-free implementations at the local level was applied.We identified mechanisms (M) of how and why multiple program components and strategies work for whom in specific contexts (C) and which outcomes (O) they likely produce. The existing scientific evidence was appraised and extracted in order to identify CMO elements.

Results: We found literature (n=36) predominantly for the Anglo-Saxon countries and China. This indicates a research gap on the implementation process of local-level tobacco control interventions for continental Europe. Globally, we could distinguish between comprehensive (prohibitive) and partial (permissive) contexts (C) in terms of smoke-free restrictions at public places. Local actors had to build up coalitions and network with other resources in order to be able to consolidate the implementation of smoke-free interventions. The literature suggested a network split into two opposing stakeholder coalitions, which are basically public health or tobacco control organizations (supporting comprehensive smoke-free policies without exemptions) versus tobacco industry-orientated third party actors. On the basis of this evidence, we developed an actor-network model including different stakeholders, policymakers, and players. This model identified three types of mechanisms (M) which can trigger different outcomes (O) of tobacco control policies at the local level: trust (1), priorities (2), and interests (3).

Conclusion: The resulting model shows that alliance building with other networks is important to achieve support to smoke-free policies. The level of implementation depends highly on actor-networks, their priorities,resources, and local coalition structures.

A.K. Linnansaari & P.L. Lindfors /Tampere, FIN/:
A realist-informed systematic review of implementing school tobacco control policies: what works, how and why?

A.K. Linnansaari & P.L. Lindfors. School of Health Sciences, University of Tampere, Tampere, Finland

Background and objective: Evidence on the effectiveness of school tobacco control policies (STCP) in preventing students' tobacco use is inconclusive, which raises the question on how these policies have been implemented. A realist-informed systematic review (RR) was conducted in order to create middle-

range theories on how different practices, processes and contextual factors influence the implementation of STCP.

Method: First, hand searching literature review and interviews with key stakeholders were conducted to develop the initial theory. Second, the initial theory was refined by appraising and synthesizing the evidence of a systematic literature review.

Results: Initial findings suggest that the implementation process of STCP tend to follow three phases: 1) preparing and planning for policy implementation, 2) introducing policy within a school, and 3) embedding policy into routine practice. Various practices and processes positively influenced the outcome of this implementation, including tobacco-free workplace for staff, a written smoking ban policy, strong leadership and management, relational and organizational support, and monitoring and evaluation. Contextual factors such as legislation, social norms and school characteristics had significant influence on the outcome of implementation as well. An example of an "inner mechanism" is the following: Providing desired and relaxed social activities for students during recess breaks (which has the same meanings as smoking) may change students` preferences, reasoning, collective beliefs and norms (social exchange theory) leading to the replacement of smoking with other actions that do promote health.

Conclusion. RR offers a promising approach to develop general lessons and reasoned guidance for the design, implementation and evaluation of school tobacco control policies in different settings.

11:45 – 12:45
2.1 M - Social media and mHealth

S.G. Ferguson /Hobart, AUS/:
Assessing the effectiveness of social media, compared to traditional advertising methods, in recruiting eligible participants to research studies

M Frandsen M Thow SG Ferguson

Recruiting participants for studies can be difficult and costly. The popularity of social media has seen researchers increasingly using these platforms to locate participants. It is unknown, however, how participants recruited via social media progress through a study. Here we 1) Compare conversion rates of participants recruited through social media (specifically, Facebook) versus traditional media; 2) Examine the cost-effectiveness of each recruitment method; and, 3) Compare the characteristics of participants recruited through each strategy. Respondents to ads for a cessation trial (see Ferguson et al., 2015 for protocol details) were grouped by how they had become aware of the study (Facebook vs traditional media). While using Facebook was more cost-effective than traditional methods at earlier endpoints of the recruitment process (cost to obtain a screened respondent: AUD$22.73 vs $29.35; cost to obtain an eligible respondent: $37.56 vs $44.77), it was less cost-effective in later endpoints (cost per enrolled: $56.34 vs $52.33; cost per completed: $103.66 vs $80.43). Participants recruited via Facebook were younger and less confident in their ability to quit. Our results suggest that while social media advertising is effective at generating interest, participants recruited in this fashion may be less conscientious. Researchers seeking to maximise their recruitment budget should consider using a combination of advertising and retention strategies.

F. Naughton /Cambridge, GBR/:
The acceptability of and real time engagement with a context-aware smartphone smoking cessation app (Q Sense)

F. Naughton, S. Hopewell, N. Lathia, C. Brown, C. Mascolo, A. McEwen & S. Sutton

Introduction: We have developed a smartphone app (Q Sense) that uses real time logging to learn about the location and context of smoking behaviour leading up to a smoker's quit date. Then, during their quit attempt, when the smoker enters or dwells in an identified smoking location ('geofence'), the app triggers support messages, tailored to context data. We assessed the app's acceptability among smokers and their speed of response to geofence-triggered support messages.

Methods: Smokers (N=43) were recruited through stop smoking services and online, and invited to use Q Sense pre and 4-weeks post quit-date. Data from three sources were analysed: the app, before and after surveys, and one-to-one interviews (n=9), analysed thematically.

Findings: Four participants withdrew. Of those followed up (30/39), three-quarters said they would use the app again. Only 13% felt the app was not easy to use, but almost half (47%) felt it was not always convenient to record smoking in real time, particularly when working and socialising. Few participants (13%) felt the messages inadvertently reminded them about smoking and 23% had some concerns about data privacy. Interviews indicated that participants considered the app a 'friend' or a convenient alternative to in-person support. Improvement suggestions included increased support duration and tailoring. 70% of eligible participants received geofence-triggered support messages and viewed them within a median of 4.5 minutes, significantly quicker than for routine daily messages ($p<0.001$).

Conclusion: Most participants considered the context-aware app to be acceptable and demonstrated relatively rapid engagement with context-triggered support.

S.G. Ferguson /Hobart, AUS/:
Using principles from serious games to boost engagement with a smoking cessation app

SG Ferguson I Bindoff G Peterson

Given the abundant evidence that behavioural processes are a major factor in smoking relapse, providing education and support has been the backbone of quit smoking programmes for decades. The recent rapid adoption of mobile devices has facilitated the proliferation of Mobile Health (mHealth) apps aimed at aiding cessation. However, little is known about how such interventions actually work, or how best to deliver them. One of the primary issues with current offerings is low levels of engagement:

apps that log activity typically see only modest engagement with active content, and a steep drop off in use over time. Poor engagement limits the potential effectiveness of an app and the ability to conduct the subsequent analyses necessary to refine app content. Here, we describe the development and initial evaluation of a mHealth smoking cessation app that employs game-based reward systems as a core development principle. In addition to using games as a distraction tool to help smokers deal with cigarette cravings, we have designed a novel approach using in-app games to facilitate engagement with the active content. Users are granted virtual currency in exchange for positive behaviours that are known to improve quit attempts, which they can then redeem for bonuses in an addictive mobile game. This approach may be particularly valuable for young smokers, who currently have few treatment options available.

J. Emery /Cambridge, GBR/:

Multicentre, randomised controlled trial of a low-cost, smoking cessation text message intervention for pregnant smokers (MiQuit)

J. Emery, F. Naughton*, K. Foster§, S. Cooper§, S. Sutton*, J. Leonardi-Bee%, M. Jones§, M. Ussher**, M. Leighton§§, A. Montgomery§§, S.Parrot%%, T. Coleman§*
** Department of Public Health and Primary Care, University of Cambridge, Cambridge, UK*
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%% Department of Health Sciences, University of York, York, UK

Background: Low-cost text message cessation interventions have the potential to change pregnancy smoking behaviour but their effectiveness is unknown. This study aimed to estimate the likely effectiveness and cost-effectiveness of a pregnancy-specific, theory-guided, tailored text message cessation program, and to estimate key parameters for delivering a full, UK-wide trial.

Methods: Multicentre, single-blinded, randomised controlled trial. Pregnant smokers (<25 weeks gestation) were recruited from 16 antenatal screening clinics in England. Control participants received usual care and a smoking cessation leaflet. Intervention participants received the control components plus 12 weeks of individually-tailored, automated, interactive, cessation text messages (MiQuit). Key parameters to inform a full trial were recruitment and outcome ascertainment rates. Seven smoking outcomes were assessed, with continuous abstinence from 4 weeks post-randomisation until 36 weeks gestation, validated biochemically, the defined primary outcome for a full trial. Estimated costs were calculated per additional, validated quitter and per QALY.

Results: 407 participants (203 MiQuit, 204 control) were randomised (39% of those eligible). At follow-up, similar proportions per group provided self-report smoking status and a validation sample. More MiQuit participants achieved validated continuous abstinence relative to controls (5.4% vs. 2.0%; odds ratio [adjusted for site and gestation] 2.7, 95% CI 0.93 to 9.35). Adjusted odds ratios on other smoking outcomes ranged from 1.03 to 3.28 in favour of MiQuit.

Incremental costs per quitter at the end of pregnancy/per QALY were ?133.53/?69.09, respectively.

Conclusions: Findings imply that this low-cost text message intervention is likely to be effective and cost-effective. A full trial is warranted.

16:15 – 17:35
Symposium 8 - Discrepancies between regulatory texts of smoking cessation medications, the evidence and clinical practice: A comparison across four countries.

This symposium will compare the differences between regulations for smoking cessation medications with what happens in clinical practice. For example, in some countries there are no mention in regulatory texts of combined NRT which is now a very frequent clinical practice; or duration of NRT treatments which are much shorter in regulatory texts than NRT use in clinical practice. Some countries have strict health warnings regarding the use of Varenicline and others have none. This symposium will highlight the confusion amongst tobacco treatment clinicians and their patients regarding the evidence base and the formal instructions and prescribing information for use of pharmacotherapies for smoking cessation.

R. Bittoun /Sydney, AUS/:
The dilemma with prescribing instructions and contradictory evidence for smoking cessation products: an Australian perspective

Renee Bittoun, University of Sydney

There are the specific discrepancies and regulations in prescribing or recommending smoking cessation products that are contrary to the current evidence of best practice. For example, the recommended warnings for nicotine products in patients with cardiovascular disease, or in pregnancy, where the evidence for safety is clear. Varenicline prescribing is also contradictory as evidence for safety in depression for example is also clear. There are various regulations about the“side-effects" of concomitant smoking while using nicotine products, lower doses for those smoking less, and conflicting information regarding the combination of products for optimal smoking cessation treatment. The Australia experience has been to legitimise "off label" recommendations and directions around these issues and that health care professionals are providing current best practice and that pharmaceutical companies print this in their product information materials.

C. Clair /Lausanne, CHE/:
Smoking cessation treatment in Switzerland: toward more permissive prescriptions with the help from the new national guidelines

Clair Carole & Cornuz Jacques, University of Lausanne

Switzerland is a country with a universal coverage system. Smoking cessation counseling is principally provided by general practitioners and or physicians/nurses with a specific training in smoking cessation. While varenicline and bupropion are both reimbursed for 12 weeks under prescription and fulfilling specific, NRT are sold over the counter but are not reimbursed. There are discrepancies between the recommendations made by the Swiss drug directory, Swiss guidelines for smoking cessation and clinical practice. For example NRT transdermic patches are contra-indicated for pregnant/lactating women and patients with acute heart diseases but in practice and according to the Swiss guidelines NRT can be prescribed to pregnant/lactating women who cannot quit without pharmacologic support even though short acting NRT should be preferred. The guidelines are reassuring regarding NRT and heart disease; however caution is advised with patients suffering for unstable angina, severe ventricular arrhythmia and during the first 2 weeks following a myocardial heart infarct. For varenicline, the treatment is contraindicated for pregnant/lactating women and there is a warning regarding potential neuropsychiatric effects. The Swiss guidelines ask for caution with patients presenting depressive or other acute psychiatric symptoms. Bupropion is contra-indicated for pregnant/lactating women, for patients at risk of seizures, patients with bipolar disorders or taking drugs with a risk of interaction. In practice these contra-indications are observed. Regarding treatment combinations, the guideline clearly advise to systematically combine treatments for smokers with a strong nicotine dependence and/or smoking ≥ 20 cig/d. Suggested combinations are: short acting NRT + long acting NRT or bupropion + NRT or varenicline + short acting NRT.

E. Králíková /Prague, CZE/:
Discrepancies between regulatory texts of smoking cessation medications, the evidence and clinical practice: Czech Republic

Eva Kralikova, Institute of Hygiene and Epidemiology, First Faculty of Medicine, Charles University and General University Hospital,and Centre for Tobacco-Dependent, the 3rd Department of Medicine - Department of Endocrinology and Metabolism, First Faculty of Medicine, Charles University in Prague and General University Hospital, Prague

INRT (patch, gum, lozenge, orodisprsible film, and mouth spray), all OTC in pharmacy only, and bupropion and varenicline, both per prescription only, are available. NRT could be used after consultation with a doctor only: in pregnancy, age under 18, hospitalisation within past 4 weeks because of cardiovascular event., serious liver/kidney disease, high blood pressure, insulin treatment of diabetes, gastric or duodenal ulcers, thyreopathy or feochromocytome. No use of NRT during breast-feeding. Several medical Czech publicaions introduced nicotine as carcinogen and/or neuroteratogen, although it is on the WHO list of essential medications since 2009. So, many smokers, but also health care professionals, are afraid of NRT. Concerning Champix, contraindication is pregnancy, but neuropsychiatric symptoms are described as possible during smoking cessation (with or without Champix). Our experience is fear of them, including doctors, namely psychiatrists. In contrary, not so many health professionals are afraid of smoking, namely in frame of psychiatry, oncology, and addictology. Several our motivated patients after consultation with their psychiatrist, became more afraid of cessation side affects or smoking cessation medications than smoking itself and did not see smoking cessation as their priority any more. Also, majority of our patients is afraid more of the electronic cigarettes/vaping then smoking. We had also a case when a smoker in alcohol dependence treatment (not using disulfiram) refused nicotine mouth spray because of ethylalcohol traces after her detox doctor advise. Guidelines for clinical practice (for doctors, pharmacists, nurses, all published in 2015, are in fact in line with the current evidence.

I. Berlin /Paris, FRA/:
Discrepancies between marketing licenses of smoking cessation medications and clinical practice in France

Ivan Berlin, Université P.& M. Curie, Faculté de médecine, Dept. of pharmacology, Hôpital Pitié-Salpetrière

NRT, varenicline and bupropion (almost not prescribed) are licensed smoking cessation medications in France. Contraindication of NRT in cardiovascular disease has been suppressed several years ago; NRT is used also in the acute phase of coronary syndrome. Warnings include renal or hepatic failure and gastric/duodenal ulcer. The license monograph stipulates that nicotine patch's dose should be chosen according to FTND total score or cigarettes/day; this has no demonstrated justification. Clinical practice is based on dose titration according to complementary cigarette use, withdrawal symptoms or desire to smoke. NRT licenses do not mention their higher efficacy with combined NRT use. All NRT are indicated in pregnancy despite lack of firm evidence of their efficacy in this population. In breastfeeding women use of buccal absorption forms are prioritized. Short acting NRT are proposed for maximum 9 months but no minimal effective treatment duration is suggested despite evidences that less than 5 weeks treatment has no efficacy. Varenicline's monograph seems to be the most updated. It includes flexible quit date, recycling and data from studies in smokers with COPD, cardiovascular or mental disorders. Despite these the warning concerning the neuropsychiatric and cardiovascular adverse events persist. Conclusion: Product monographs, the regulatory base of clinical practice, should reflect evidence based data and should be regularly updated to inform practitioners without delay. Updating is a mission of manufacturers but if they do not comply, this role should be undertaken by regulatory agencies to allow providing best evidence clinical practice.

UBLG hall

10:00 – 11:20
Workshop 3 - Smoking and Substance Abuse

11:45 – 12:45
2.1 S - Smoking cessation in specialist populations

P.M. Smith /Thunder Bay, CAN/:
Tailoring Smoking Cessation Services to Indigenous Populations

Patricia M. Smith, Lisa Seamark

Objective: A standardized smoking cessation program was implemented into practice with Aboriginal peoples in Northern Ontario, Canada, to determine the effectiveness in rural and remote areas.

Methods: Moving On to Being Free™ is a behavioural intervention delivered by a full-time nurse to help interested patients develop a personalized quit or reduction plan. The intervention is grounded in Bandura's self-regulation and self-efficacy theory, and Marlatt & Gordon's relapse prevention model. The program has been successful in urban inpatient settings. The intervention includes an initial 1-hr session followed by an 8-week program and follow-up at 3, 6, and 12 months.

Results: Of the 100 patients enrolled from 37 northern communities; 71% were from remote First Nations reserves, 89% self-identified as Indigenous peoples, 50% were unemployed or disabled, 60% were female, 43% had less than high school education, and the average confidence to quit smoking was 73%. At one-year after enrollment, 50% were smoke-free (lost-to-follow-up were considered smokers).

Conclusions: The intervention was highly effective with this population in remote areas of Northern Ontario, much higher than the 35% one-year cessation rate in randomized trials. Based on the success, it is recommended to implement this program more widely into standard practice.

H. Walsh /London, GBR/:
"Planting a seed": A qualitative study of experiences of smoking and smoking cessation amongst adults with a substance misuse disorder

H Walsh, M Duaso*, A McNeill§*
**Florence Nightingale Faculty of Nursing and Midwifery, Kings' College London, UK*
§ National Addiction Centre, Institute of Psychiatry, Psychology and Neuroscience, Kings' College London, UK

The UK smoking rate amongst the general population is around 20% but amongst people with a substance misuse disorder, rates may be as high as 85%. Little is known about their experiences of smoking cessation.

The aims and objectives of the study were to explore experiences of smoking and smoking cessation amongst people with a substance misuse disorder, to compare attitudes and to identify potential barriers and facilitators to quitting.

A qualitative, exploratory study collected data using semi-structured interviews. The sample included adults with a history of substance misuse, or substance and alcohol misuse, and current or ex-smokers. Participants were recruited through inner-city substance misuse community and residential services. Participants received no remuneration. Interviews were carried out at the service, were audio-recorded and transcribed, and analysed using the Framework approach with Nvivo.

Fifteen participants were interviewed; aged 26-56 years, the majority were male, had substance and alcohol use disorders, and faced additional challenging social circumstances.

Analysis to date suggested the following themes: 1) accessibility, awareness, timing and use of nicotine replacement therapy (NRT); participants were offered NRT only on first day of treatment, though interest in quitting often higher once detox completed; 2) influence of environment, peers and staff; socialisation amongst peers was facilitated by smoking; 3) relationship between substance use and smoking; how skills acquired to quit substances were applied to smoking.

This study will be used to inform smoking cessation interventions for this vulnerable group who are often under-represented in both smoking studies and smoking treatment services.

J. Thrul /San Francisco, USA/:
Smoking cessation outcomes among sexual and gender minority and nonminority young adult smokers participating in a Facebook trial

J. Thrul, D. Ramo§*
** Center for Tobacco Control Research and Education, University of California, San Francisco, San Francisco, CA, USA*
§ Department of Psychiatry and Weill Center for Neurosciences, University of California, San Francisco, San Francisco, CA, USA

Sexual and gender minority young adults (i.e., lesbian, gay, bisexual, and transgender [LGBT]) have a higher smoking prevalence than nonminority individuals. There is limited evidence for the efficacy of digital smoking cessation interventions among LGBT smokers. This study compared young adult LGBT and nonminority smokers participating in a trial of a Facebook smoking cessation intervention.

Participants (n=500) were randomized to the 90-day intervention consisting of daily posts and weekly live counseling sessions tailored to readiness to quit, and the control group was referred to Smokefree.gov. Participants completed surveys at baseline and 3-month follow-up (70.8% retention).

The full sample was 73% non-Hispanic White, with a median of 12 years of education and household income between $21k – $40k. Participants smoked 10.9 (SD=6.5) cigarettes per day and had low nicotine dependence (FTND=3.2; SD=2.1). At baseline, 27% of the sample identified as LGBT. LGBT young adults were more likely to be female, reported more years of education, a lower household income, and smoking fewer cigarettes per day compared to nonminority smokers. A total of 7.6% self-reported 7-day point prevalence abstinence at follow-up (assuming missing = smoking). Logistic regression analyses showed no significant differences in abstinence between LGBT (7.5%) and nonminority (7.7%) young adult smokers at follow-up and there was no interaction effect between condition and LGBT status. No between group differences were found for readiness to quit or quit attempts at follow-up either.

Young adult LGBT smokers appear as likely to quit smoking as nonminority smokers following a Facebook intervention.

M. Hollý /Prague, CZE/:
Place of Tobacco Dependence Treatment in Psychiatric Healthcare System

M. Hollý, K. Sadílková*, Z. Provazníková*, E. Kalinová*, V. Fibigerová**
** Bohnice Psychiatric Hospital, Prague, the Czech Republic*

Introduction: Despite the proven positive effects of quitting smoking on overall health, including an improved prognosis of mental illness, so far, in the Czech Republic no systematic treatment of tobacco dependence is offered in psychiatric clinics, and closed psychiatric and detox wards have an exception from smoking ban in hospitals, with no free nicotine replacement therapy available.

Methods: Based on this evidence, the Bohnice Psychiatric Hospital (BPH) as the leading mental health care provider in the Czech Republic (7300 new patients/year) decided as the first in the country to provide a sustainable tobacco dependence treatment including treatment of metabolic diseases, which are frequent among psychiatric patients-smokers.

Results: There was equipped and opened a specialized department named AMETA (Ambulance pro metabolická onemocnění a léčbu závislosti na tabáku / An outpatient ward for metabolic diseases and tobacco dependence treatment) which provides treatment of tobacco dependence to interested patients or to any staff of BPH (BPH employs 110 doctors, 400 nurses and around 490 other staff in total). In test mode several patients have been already treated on temporary premises. Training of internal health care professionals in brief intervention to be delivered to all BPH smoking patients is in process.

Conclusion: These tobacco dependence treatment initiatives will give the good practice for other mental health care providers.

16:15 – 17:35
Workshop 4 - Smoking and Disadvantage

The theme of this workshop is inequalities and smoking in Europe. The workshop will be in two parts. The first half aims, through three short presentations, to give an overview of patterns and trends in inequalities in smoking in young people and adults in Europe; to share insights about how and why the impact of tobacco control policies on young people may differ by their socioeconomic status; and to consider the possible negative impacts of tobacco control policies on low socioeconomic groups, in particular increased stigmatisation. The second half of the workshop will be a discussion where participants will identify gaps in the current knowledge and evidence base on inequalities in smoking, and consider what types of research are needed to address these. While the three presentations will focus primarily on socioeconomic inequalities, the discussion will be broadened to include other forms of disadvantage.

A.E. Kunst /Amsterdam, NLD/
Overview of inequalities in smoking in Europe

A. E. Kunst, Department of Public Health, Academic Medical Center - University of Amsterdam, Amsterdam, the Netherlands

This first presentation will provide an overview of socioeconomic inequalities in smoking in Europe in the 2000's. We will show that smoking initiation is more common among socially disadvantaged adolescents, such as those from poor families. A strong relationship is observed especially with young people's own academic achievement. These inequalities have not diminished since 2000, but instead tended to widen. Furthermore, we will show that smoking cessation rates are much lower among adults with lower education or income levels. Inequalities in smoking cessation have widened since 2000 in many European countries. In-depth analyses of some countries suggest that disadvantaged smokers were less influenced by new tobacco control policies that were developed in Europe in the 2000's.

M.A.G. Kuipers /Amsterdam, NLD/
Equity impact of tobacco control policies

M.A.G. Kuipers, Department of Public Health, Academic Medical Center - University of Amsterdam, Amsterdam, the Netherlands, and Department of Epidemiology and Public Health, University College London, London, UK

This presentation will discuss in more detail whether and how tobacco control policies affected disadvantaged smokers, specifically smoking initiation by disadvantaged adolescents. Across Europe, the introduction of comprehensive tobacco control policies has been associated with lower rates of youth smoking, but policies were possibly less effective among disadvantaged youth. In a series of examples, we will document the equity impact of specific policies, such as smoke-free policies around schools and bans on sales to minors. We will provide a systematic framework to explain why youth smoking remains strongly related to social disadvantage. Based on this framework, we outline how future policies could be more effective in reducing smoking inequalities.

S. E. Hill /Edinburgh, GBR/:
Smoking, inequalities and stigma

In the past 50 years, tobacco use has fallen in most European countries with substantially greater declines in more advantaged social groups. The resulting inequalities have led to increased efforts to address smoking in lower socioeconomic groups. While such attention is appropriate in health equity terms, an increased focus on disadvantaged social groups in the context of smoking denormalisation arguably contributes to stigmatisation of smoking and of those who continue to smoke.This presentation draws on recent literature on smoking and stigmatisation to explore some of the unintended consequences of tobacco control for social disadvantage and marginalisation. It will explore the concerns and challenges raised in some of this work – including the risk that tobacco control may inadvertently exacerbate the marginalisation of particular social groups – and consider how we might respond to these challenges by ensuring tobacco control pays appropriate attention to social context and the structural drivers of inequalities in smoking.

Saturday
September 10, 2016

AUDITORIUM hall

9:00 – 11:00
3.1 L - Protecting children and adolescents from tobacco use

P.A.W. Nuyts /Amsterdam, NLD/:
Trends in smoking behavior in adolescents and young adults in the Netherlands: increasing age at initiation?

PAW Nuyts, MAG Kuipers*, MC Willemsen**,***, AE Kunst**
** Academic Medical Center, Amsterdam, The Netherlands*
*** Maastricht University, Maastricht, The Netherlands*
****Alliantie Rookvrij Nederland, Den Haag, The Netherlands*

Background: As most current smokers start smoking before their 18th birthday, adolescence is the primary target group for smoking prevention. However, recent declines in youth smoking prevalence rates, due in part to increasingly stronger youth access laws, might lead to an upward shift in the age of smoking initiation. This study aims to assess whether such a shift is occurring, through analysis of smoking initiation in four subsequent birth cohorts in The Netherlands.

Methods: This study used cross-sectional data from the National Health Survey 2010-2013 in The Netherlands. Using retrospective questions on smoking, we constructed the smoking history of four 5-year birth cohorts (1980-84 to 1995-99). Main outcome measures were smoking prevalence per age and age of smoking initiation. Differences between birth cohorts were analyzed using logistic regression.

Results: We found a decrease in smoking prevalence in subsequent cohorts from 1980-84 to 1995-99. No decline occurred between the 1985-89 and 1990-1994 cohorts. The majority of smokers initiated smoking between 12 and 16 years of age, with 16 years as the peak age of initiation. This age pattern did not change between cohorts. Age patterns were stable for both males and females, and in low and high educational groups.

Conclusions: Even though smoking prevalence rates declined over time, age of smoking initiation did not shift. This would suggest that young adolescents remain the most important target group for tobacco prevention measures.

S.H. Choi /East Lansing, USA/:
Impact of age at smoking initiation on smoking-related morbidity and all-cause mortality

SH Choi, M Stommel

The effects of early smoking initiation on morbidity and mortality are still not fully documented. Using a nationally representative sample of the US adult resident population, the aim of this study is to examine the impact of the age of smoking initiation on the development of smoking-related morbidity and all-cause mortality. National Health Interview Survey (NHIS) data from 1997 through 2005 were linked to the National Death Index (NDI) with follow-up to December, 31, 2011. The two dependent variables were presence or absence of smoking-related morbidity at the time of the interview and subsequent all-cause mortality; the primary independent variable was age of smoking initiation. The analyses controlled for covariates, including demographics, socio-economic and health insurance status, and health behaviors. The analysis relied on fitting logistic regression and Cox proportional hazards models. During the years 1997-2005, 76.5 millions were current or former adult smokers where 7.3% started smoking before the age of 13, 11.0% at ages 13-14, 24.2% at ages 15-16, 24.5% at ages 17-18, 14.5% at ages 19-20, 12.7% at ages 21-25, and 5.8% started at age 26 or later. Early smoking initiation was associated with increased risk for smoking-related morbidity (vascular and pulmonary diseases and cancers) and all-cause mortality. Early smoking initiation also had a positive relationship with years of smoking, cigarette consumption, and pack years. Smoking-related morbidity contributed.

M. Schreuders /Amsterdam, NLD/:
Unravelling the black box of anti-tobacco policies at schools and their impact on adolescents' smoking: a realist-informed systematic review

M Schreuders, PAW Nuyts*, SJHM van den Putte§, AE Kunst**
** Department of Public Health, Academic Medical Center - University of Amsterdam, Amsterdam, The Netherlands*
§ Faculty of Social and Behavioural Sciences, University of Amsterdam, Amsterdam, The Netherlands

Background
Secondary schools increasingly attempt to avert and stop adolescents from smoking by implementing and enforcing school tobacco policies (STPs). Notwithstanding the popularity of STPs, the scientific evidence about their actual impact remains largely inconclusive. This systematic realist review aimed to understand why these inconsistencies in evidence occur by identifying and refining the mechanisms that explain how and why (i.e. black box) STPs impact adolescents smoking behaviour.

Methods
We performed a systematic search through Medline/PubMed, PsycInfo and Embase between January 1991 and 2016. We identified 41 primary articles, reporting on quantitative and/or qualitative evidence, for inclusion.

Results
Evidence showed that STPs may decrease youth smoking as these make them (i) want to avoid the sanctions associated with smoking, (ii) feel weaker social pressure to smoke, (iii) develop anti-smoking personal beliefs, and (iv) experience more control over the decision not to smoke. The impact of each mechanism, however, depends largely on the extent to which connected counter-mechanisms occur. For example, adolescents do not feel the need to avoid the sanctions when they perceive no personal threat for the sanctions. Another example is that adolescents may not develop anti-smoking beliefs when they experience contradictions between school's non-smoking messages and actual practice.

Conclusion
The findings demonstrate that it is crucial to monitor and steer on how adolescents experience and deal with STPs in order to make STPs effective in decreasing smoking.

V. Nădăsan /Târgu Mureş, ROU/
The short term effects of ASPIRA – a computer-assisted smoking prevention program for adolescents in Tirgu Mures, Romania: A cluster randomized parallel group prevention trial

V. Nădăsan, K. Foley§, Z. Ábrám*, S. Mihăicută%, J. Bálint*, M. Csibi*, M. Pénzes**, E. Paulik §§, R. Urban%%*
** Department of Hygiene, University of Medicine and Pharmacy Tirgu Mures, Romania*
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§§ Department of Public Health, Faculty of Medicine, University of Szeged, Szeged, Hungary
%% Institute of Psychology, Eötvös Loránd University, Budapest, Hungary

Background: Computer-assisted interventions are a promising tool for smoking prevention in adolescent populations.

Main objective: The objective of the study was to measure the short-term effects of ASPIRA, a National Cancer Institute Research Tested Intervention Program. This is the first implementation of a computer-assisted multimedia smoking prevention program translated and adapted for Romanian and Hungarian speaking adolescents in Romania.

Methods: 1,835 students (79 classes from 16 high schools in Tirgu Mures, Romania) were randomly assigned to the intervention or control group. The primary outcomes were experimentation with smoking and cigarette use during the last 30 days (current use). The intervention group received the ASPIRA curriculum. A baseline and 6-month post-intervention online survey was administered. Logistic regression models were applied to compare the odds of smoking experimentation and cigarette use during the last 30 days in the intervention vs. control group among 1369 participants who comprised the analytical sample. Cluster effect and gender were controlled in all analyses.

Results: Among students who never tried smoking at baseline, 14% vs. 20% reported experimentation at 6-months in the treatment and control groups, respectively [OR=0.67, 95% CI: 0.45-0.98]. Among those who did not smoke during the past 30 days at baseline, 10% vs. 17% reported current use in the treatment and control groups, respectively [OR=0.59, 95% CI: 0.34-1.04].

Conclusions: The ASPIRA prevention program had a significant impact on smoking experimentation and current use among adolescents in Romania.

Recommendations for practice: Dissemination of the ASPIRA program in Eastern Europe could prevent smoking initiation in adolescents.

L. Ferencz /Târgu Mureș, ROU/:
Smokefree Policies and Policy Enforcement to Prevent Secondhand Smoke Exposure among Foster Care Children in Romania

K FOLEY, I L FERENCZ , M FERENCZ, P BALAZS, M PÉNZES, A FOGARASI-GRENCZER, Z ABRAM, N TUBAK, L SCHMIDT

Background: Secondhand smoke exposure increases the risk of asthma attacks, respiratory and ear infections, and sudden infant death syndrome among infants and children.

Objective: This study evaluated the adoption and enforcement of home- and car-based policies to reduce SHS among children and employees in Romanian foster care homes.

Methods: A cross-sectional, self-administered questionnaire among foster care employees was conducted in 2015 (n=579). Descriptive statistics were used to assess the prevalence and enforcement of SHS policies. Correlates of SHS policies and enforcement were evaluated using multivariate logistic regression analysis via Stata 14.0.

Results: Most respondents reported that their home has a policy prohibiting indoor tobacco use among children (86%) and adults (79%). 65% report a policy that prohibits smoking in cars while transporting children, and 47% have a policy prohibiting tobacco use among personnel at family care home-sponsored activities (regardless of location). Among 515 respondents who indicate having any policies related to tobacco use targeting youth and adults, 51% report the policy is completely enforced. Factors associated with a reduced odds of complete enforcement for adults and youth, respectively include: male employee (Adults: OR 0.61, 95%CI: 0.0.37-0.99; Youth: OR 0.59, 95%CI: 0.3-0.95) and being a smoker (Adults: OR 0.45, 95%CI: 0.30-0.68; Youth: 0.51 (0.34-0.77).

Conclusion: Home- and car policies are neither comprehensive nor enforced in Romanian foster care.

Recommendation for Policy or Practice: Adoption and enforcement of comprehensive SHS policies should be a priority to reduce the health risks to vulnerable children and non-smoker employees in foster care homes.

E. Ratschen /York, GBR/:
A Randomised Controlled Trial of a Complex Intervention to reduce Children's Exposure to Secondhand Smoke in the Home

E Ratschen, R Thorley, L Jones, M Opazo Breton, J Cook, A McNeill, J Britton, T Coleman, S Lewis

Background
Exposing children to secondhand tobacco smoke causes significant harm, and occurs predominantly through smoking by caregivers in the family home. We report a trial of a complex intervention designed to reduce secondhand smoke exposure of children whose primary caregiver feels unable or unwilling to quit smoking.

Methods
In an open-label randomised controlled trial of 205 families from deprived communities in England, we compared a complex intervention combining personalised feedback on home air quality, behavioural support and nicotine replacement therapy (NRT) for temporary abstinence with usual care. Our primary outcome was change in air quality in the home, measured as average 16-to-24-hour levels of particulate matter of <2.5µm diameter (PM?.?), between baseline and 12 weeks. Secondary outcomes included changes in maximum PM?.?, proportion of time PM?.? exceeded World Health Organisation (WHO) recommended levels of maximum exposure of 25µg/mg3, child salivary cotinine, caregivers' cigarette

consumption, nicotine dependence, determination to stop smoking, quit attempts and quitting altogether during the intervention.

Findings
Geometric mean PM?.? decreased significantly more (by 35.2%; 95%CI: 12.7-51.9%) in intervention than in usual care households, as did the proportion of time PM?.? exceeded 25µg/mg3, child salivary cotinine concentrations, caregivers' cigarette consumption in the home, nicotine dependence, determination to quit, and likelihood of having made a quit attempt.

Interpretation
By reducing exposure to secondhand tobacco smoke in the homes of children who live with smokers unable or unwilling to quit, this intervention offers huge potential to reduce children's' tobacco-related harm.

B. Szabó /Cluj-Napoca, ROU/
Motivating Activities as Protective Factors in Adolescents' Smoking Behavior

*K. BERNATH * E. ALBERT-LŐRINCZ § M. ALBERT-LŐRINCZ % K. BARNA § I. GÁSPÁRIK ** B. SZABÓ §*
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Most smokers start during adolescence. Romania has among the highest percentage of teen smokers in the EU and among the lowest average age of smoking initiation. We studied the association between peer-group and other environmental influences and smoking behavior among Romanian adolescents to inform development of community-based smoking prevention programs.

A stratified random sample of 1,313 7th and 8th grade students from three counties in Transylvania, Romania completed a self-administered questionnaire on smoking-related knowledge, attitudes and behaviors. Respondent smoking status was classified as: current smokers (more than 1 cigarette daily); experimenters (maximum 1 cigarette daily); and never smokers (no cigarette during the past 30 days). The impact of different type of activities (operationalized into independent variables such as joint and individual leisure time activities, network size, joint community activities, respondent's school achievement and smoking related knowledge, membership in civil groups, number of smoking friends and classmates, gender). Multinomial logistic regression models were used to measure the impact of various factors upon smoking.

Most respondents were classified as non-smokers (87.1%) rather than experimenters (7.0%) or smokers (5.9%). Having as reference category "smokers", significant factors for no smoking attitude are (95%): good school grades (OR=1.20, CL 1.03-1.4), frequency of joint community activities (OR=1,23, CL 0.90-1.62), number of smoking classmates (OR=0.91, CL 0.83-0.98), smoking habits of the closest friends (OR 0.40, CL 0.31-0.54), attitude of close neighbors (OR=1.47, CL 1.17-1.84, participation in active leisure time activities with friends (OR 0.73, CL 0,59-0.90). No significant correlation were found for the "experimenter" group.

Community-wide prevention programs need to address peer and other environmental influences on susceptible adolescents.

11:30 – 12:30
3.2 L - Treatment optimisation

V.W. Madurasinghe /London, GBR/:
Smoking treatment optimisation in pharmacies (STOP): a cluster randomised pilot trial of a training intervention

VW MADURASINGHE, R SOHANPAL*, W JAMES*, L STEED*, S ELDRIDGE*, SJC TAYLOR*; C GRIFFITHS*; R WALTON**
** Centre for Primary Care and Public Health, Queen Mary University of London, London, United Kingdom*

Introduction
UK government policy aims to strengthen the role of community pharmacies. Thus we assessed the feasibility of a randomised controlled trial to evaluate a training intervention to enhance delivery of the NHS Smoking Cessation Service.

Methods
In this cluster randomised parallel group pilot trial twelve community pharmacies in east London were allocated to the STOP intervention or usual practice using simple randomisation (allocation ratio 2:1). Data were analysed descriptively.

Results
Twelve of 54 (22.2%; 95% CI 12.0% to 35.6%) pharmacies and 20 of 23 (87.0%; 66.4% to 97.2%) advisors invited agreed to participate. Over five months, 302 smokers in intervention pharmacies (mean per pharmacy 43.1, 95% CI: -4.3 to 90.5) and 319 in usual practice (mean per pharmacy 79.8, 95% CI: 19.0 to 140.5) joined the service. 51 of 621 smokers (8.2%; 6.3% to 10.7%) consented to provide additional data on cessation. 17 of 19 smokers that consented were retained at four weeks in intervention arm (89.5%, 95% CI: 66.9% to 98.7%) and 24 of 32 in usual practice (75.0%, 95% CI: 56.6% to 88.5%). 10 of 19 in the intervention arm (52.6%, 95% CI: 28.9% to 75.6%) stopped smoking compared to seven of 32 in usual practice arm (21.9%, 95% CI: 9.3% to 40.0%).

Conclusions
Recruitment rates show that the main trial is feasible and the results suggest that the intervention may improve retention and quit rates in smoking cessation services. We gained insights on how best to conduct the definitive trial which will commence recruitment in August 2016.

E.M. Brown /Manchester, GBR/:
Evidence that self-rewards boost cessation in community based stop smoking services: A randomised controlled trial

E. M. Brown, D. M. Smith*, C. J. Armitage**
**University of Manchester*

Background: Self-rewards are frequently embedded within complex health behaviour change interventions and are regularly referred to within stop smoking contexts. However, the unique effect of self-rewarding has not yet been tested in a randomised controlled trial.

Objective: To test whether self-rewards can boost smoking quit rates within community based stop smoking programmes.

Methods: One hundred and one participants were recruited from community stop smoking clinics and randomised to a control (asked to form a plan to quit smoking; 57 participants) or an intervention (asked to form an if-then plan to reward themselves at the end of the month if they had not smoked at all; 44 participants) condition. The main outcome measure was quit status at 3-month follow-up, which was self-reported by all participants. Chi square assessed the effectiveness of self-rewards on quit status.

Main results: Self-rewarding significantly boosted the effects of the community stop smoking programmes: Nineteen participants (43.2%) reported successfully quitting in the self-rewarding condition, compared with 11 participants (19.3%) in the control condition (?2 = (1, n = 101) = 6.78, p =.01, d = 0.54). Biochemical verification (exhaled carbon monoxide) was obtained from a subsample of participants and correlated strongly (r = 0.81, n = 32, p <.01) with self-reported quitting at follow-up.

Conclusion: Encouraging smokers to self-reward significantly boosted the effectiveness of the standard stop smoking programme.

Recommendations for practice/policy: The effectiveness of community based stop smoking programmes could be augmented with widespread deployment of self-rewards.

J. Scholz /Sao Paulo, BRA/:
Perspective of using genetic markers in the choice of pharmacological treatment of smoking

J SCHOLZ, J R SANTOS, P R X TOMAZ, P C J LIMA,P V GAYA, T M O ABE, A C PEREIRA

Introduction: The interruption of smoking is best way to reduce cardiovascular risk; however the treatment of smoking is usually overlooked by medical doctors for the subjectivity of the treatment. The perspective of using genetic markers that might indicate the medicine more effective tobacco treatment for each patient can change this scenario bring more objectivity in the treatment of this disease. Pharmacogenomics of smoking treatment was evaluated in over 1000 patients of Outpatient Treatment Program of smoking of the INCOR-HCFMUSP in 2009 to 2014 period.

Methods: In the study sample was considered the outcome of the treatment of smoking as success and failure after 1 year of follow-up and the type of medication used (Bupropion, Varenicline and Bupropion + Varenicline). We researched 9 polymorphisms related to pharmacogenetics of these medicines in this sample. Statistical analysis SPSS software (v. 16.0, IBM, New York, NY) with a significance level of $p < 0.05$.

Results: We found the association of the CHRNA4 rs1044396 polymorphisms for Varenicline. Patients with CT or TT genotype had a higher chance of success than the CC (OR = 1.67; CI = 1.10 -2.53; p = 0.02) in multivariate model. We also found the association of the polymorphism CYP2B6 rs2279343 for Bupropion. Patients with AA genotype had a higher chance of success compared to the AG or GG genotype (OR = 1.92; IC = -3.42 1.08; p = 0.03) in multivariate model.

Conclusions: These findings are pioneers in the world. And whereas the success rates in treatment of smoking can be relatively low in non-specialized clinical practice, the prospect of having genetic markers for the treatment of smoking could optimize the success rate. These results must be tested through randomized prospective study in order to confirm this hypothesis.

S.G. Ferguson /Hobart, AUS/
The effect of varenicline and nicotine patch on smoking rate and satisfaction with smoking: An examination of the mechanism of action of two pre-quit pharmacotherapies

SG Ferguson W Lu K Chappell GP Wells

There is substantial scope to improve the current arsenal of cessation methods. Gaining a better understanding of how treatments influence abstinence may allow for better tailoring of treatments and, ultimately, better outcomes. The objective of the current study (see Ferguson et al., 2015 for a detailed protocol) was to test the effects of the pre-quit use of varenicline and patch on smoking rate and satisfaction with smoking. Participants were randomised (open-label) to receive either standard patch treatment (10wks starting from a designated quit day; SP), pre-quit patch treatment (starting 2wks prior to a quit day, followed by 10 wks post-quit; PQP) or varenicline (starting 2wks prior to quit day followed by 10 wks post-quit). Participants used modified smart-phones to monitor their smoking in real-time during the pre-quit period. During the pre-quit period, participants in both the PQP and VAR groups reported significant reductions in both the satisfaction gained from smoking ($p<.001$) and their daily cigarette intake ($p<.001$). Participants in the SP group did not. The results are consistent with hypothesis that the reduction in daily smoking typically observed during pre-quit treatment is linked to reductions in satisfaction, and that they are a result of treatment (as opposed to happening naturally as smokers approach a quit day). Monitoring such reductions may prove a useful method of evaluating responsiveness to treatment and allow for tailoring.

PHARMACO hall

9:00 – 11:00
3.1 M - Genetics, biomarkers and smoking behaviour

S. Bollepalli /Helsinki, FIN/:
Smoking Status Phenotype Refinement in the Finnish Population Using DNA Methylation Biomarkers

*S BOLLEPALLI § % **, K ISMAIL § % **, M PEROLA § * %% , T KORHONEN % * §§, J KAPRIO § % *, A LOUKOLA § % , M OLLIKAINEN § %*
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*** Equal contribution*

Classification of individuals based on self-reported smoking status is prone to errors due to under-reporting. It also fails to account for passive exposure to cigarette smoke. Traditional biomarkers, such as cotinine and CO, only measure short-term exposure. A reliable indicator of long-term exposure is needed. Recently, a smoking score derived from 187 smoking-responsive DNA methylation loci was suggested as a biomarker of smoking status.

We aimed to (1) compare classification based on self-reported smoking status vs. methylation-derived smoking score, (2) further develop the smoking score by performing an epigenome-wide association study (EWAS) to identify differentially methylated loci between ever and never smokers, and (3) identify optimal thresholds for smoking scores in the Finnish population.

Within the Younger Finnish Twin Cohort we initially identified 84 smoking discordant monozycotic (MZ) twin pairs based on self-reported smoking status (never, former, current). A discrepancy between self-reported smoking status and smoking score was detected in 17 pairs, with the never smoking co-twins having higher scores than their current smoking co-twins. The previously proposed smoking score threshold for classification of smokers and non-smokers was not applicable to our data. We then used the smoking score-verified smoking status (non-smoker vs. smoker) of the remaining 67 smoking discordant MZ twin pairs as a phenotype in EWAS, and identified 18 significant genes, including a known smoking-related gene AHRR. We are currently using FINRISK/DILGOM2007 data, with self-reported smoking status never, former (>6mths of abstinence), recent quitter (<6mths), occasional, daily) to replicate the EWAS findings, and to identify optimal smoking thresholds for the Finnish population.

DNA methylation-derived smoking scores seem promising as biomarkers of smoking status. Population-specific panels and smoking thresholds may need to be developed for optimal classification.

J. Hällfors /Helsinki, FIN/:
Finnish GWAS highlights the connection between neurotrophin signaling pathway and smoking

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BACKGROUND. Smoking causes a heavy burden on the public health, as it is a major risk factor for many chronic diseases. We aim to extend the portion of known genetic variants responsible for inter-individual differences in smoking behavior.

METHODS. We performed a genome-wide association study (GWAS) on 2063 subjects drawn from the population-based Finnish Twin Cohort Study. We utilized genotype data jointly imputed to 1000Genomes and an all-Finnish reference panel. We analysed nicotine dependence (ND) and nicotine withdrawal (NW) diagnosed by DSM-IV criteria, and amount smoked defined as self-reported cigarettes

per day (CPD). We used linear mixed models in GEMMA with a relatedness matrix to account for the family structures in the twin data, and adjusted the analyses for age and sex.

RESULTS. First, our study yielded genome-wide significant association on 16p12 with CPD (P=8.5x10-9), overlapping a gene called CLEC19A, with unknown function. Within the association locus stands a transcription factor binding site for NF-?B and NF-?B1, which have established roles in the neurotrophin signaling pathway. Second, association signals were detected on 2q21 and 11p15 with DSM-IV NW. On 2q21 the genome-wide significant signal arises in an intron of TMEM163 (P=2.1x10-9). Previous studies have associated this gene with Parkinson's disease. On 11p15 association signals highlight AP2A2 (P=6.6x10-8) and MUC6 (P=4.2x10-7). Both of these genes have a link to neurotrophin signaling pathway. No significant association was detected with DSM-IV ND.

CONCLUSION. A member of the neurotrophin signaling pathway, brain-derived neurotrophic factor (BDNF) has previously associated with both smoking initiation and with depression. Our study further highlights the role of neurotrophin signaling pathway in smoking behavior.

R. Gupta /Helsinki, FIN/:
Neuregulin Signaling Pathway in Smoking Behavior

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Smoking is a major risk factor for many somatic diseases and is also emerging as a causal factor for neuropsychiatric disorders. Understanding the molecular processes that link comorbid disorders such as smoking and mental disorders can provide new therapeutic targets. Neuregulin signaling pathway (NSP) genes have previously been implicated in schizophrenia, a neurodevelopmental disorder with high-comorbidity to smoking. Recently, we performed a genome-wide association study in a Finnish twin family sample (N=1104) and detected association between DSM-IV defined nicotine dependence and ERBB4, a neuregulin receptor. Using families from the same sample, we have earlier identified linkage for regular smoking at 2q33, overlapping the ERBB4 locus. Further, Neuregulin3 has been shown to associate with nicotine withdrawal in a behavioral mouse model. In this study we scrutinized association and linkage between 22450 common and rare genetic variants in ten NSP genes and the phenotypes of being a regular smoker, DSM-IV nicotine dependence, and DSM-IV nicotine withdrawal. By using an extended Finnish twin family sample (N=1998), we detected 183 significantly (FDR p<0.05) associated variants. We performed a comprehensive annotation of the associated variants using expression (eQTL) and methylation quantitative trait loci (meQTL) analysis in a Finnish population sample (DILGOM), as well as publicly available eQTL and splicing quantitative trait loci databases. Among the 183 associating variants, we identified 31 eQTLs (in NRG1), 19 meQTLs (in ERBB4, NRG1, NRG3 and PSENEN) and 7 splicing disruption variants (in ERBB4, PSEN1 and APH1A). Our results further support the involvement of NSP in smoking behavior and highlight the utility of functional annotations.

V. Adámková /Prague, CZE/:
No association between polymorphisms within the cholinergic receptors genes and smoking cessation treatment outcome

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2 - Centre for Tobacco-Dependent, the 3rd Medical Department
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Tobacco/nicotine dependence has a significant heritable component. Genome-wide association studies have associated the single nucleotide polymorphisms (SNPs) rs578776, rs16969968, rs6474412, rs3733829 and rs4105144 with nicotine dependence in Western European populations. We examined

whether these SNPs influence nicotine dependence and successful treatment of tobacco dependence in the Czech middle-European population. Variants were analysed by PCR-RFLP or by TaqMan assay in 807 adult heavy tobacco-dependent smokers ? patients of the Centre for Treatment of Tobacco Dependence (Prague) as well as 1,362 self-reported non-smokers. Except for rs3733829, association with tobacco dependence was confirmed for all other genetic variants. In agreement with previous studies, the strongest determinant of tobacco dependence was rs16969969 with OR (96%CI) 1.32 (1.08-1.62) for A allele carriers vs. GG comparison (P = 0.003). In contrast, none of the analysed variants reached significance with respect to a 1-year course of successful tobacco dependence treatment (all P over 0.18) in a subset of 525 patients. We confirmed the association between variants within genes that code nicotinic-acetylcholine receptors (-?3, -?5 and -ß3), EGLN2 and tobacco dependence development in the Czech population. The success of the tobacco dependence treatment was not influenced by the analysed SNPs.

J. Buchwald /Helsinki, FIN/:

A Study of Rare and Low Frequency Genetic Variant Associations with Nicotine Clearance Rate

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%%%% Campbell Family Mental Health Research Institute, CAMH, and Departments of Pharmacology & Toxicology and Psychiatry, University of Toronto, Toronto, Canada

Background: Nicotine clearance rate affects the efficacy of smoking cessation pharmacotherapy. Understanding its underlying factors could facilitate developing more effective and personalized smoking cessation interventions. We recently performed a genome-wide association study (GWAS) on a biomarker of nicotine clearance rate and 1000Genomes imputed data, using variants with minor allele frequency (MAF) >1%. In a sample of 1518 Finns, we found four independent genome-wide significant variants on 19q13 that explained 31% of the phenotypic variance.

Objective: Our aim was to follow-up these results by including common (MAF>5%), low frequency (MAF 1-5%), and rare (MAF<1%) variants. The objective was to use the same Finnish sample with re-imputed genotype data based on the Sequencing Initiative Suomi reference (1941 Finnish whole genomes) in addition to the 1000Genomes reference, providing us with higher imputation accuracy. Further, a strong increase of variants with MAF 1-5% is detected in Finns, empowering our study of low frequency variants.

Methods: We used the ratio of 3-hydroxycotinine and cotinine (i.e. nicotine metabolite ratio, NMR) as a biomarker for nicotine clearance rate. We re-conducted the NMR-GWAS with the refined genotype data and performed association analyses for rare and low frequency variants within the 19q13 region.

Results: We identified 850 genome-wide significant variants in our GWAS within a 3.5 Mb region on 19q13. In our analyses of rare and low frequency variants on 19q13, we found 200 low frequency and 90 rare variants, annotated to coding/splice site/promoter/UTR regions, that were associated with NMR (FDR corrected $p<0.05$); 54% of these not having been included in our previous GWAS. We are currently scrutinizing these results to identify the independently associated genetic variants.

Conclusion: The genetically more informative data set enabled us to enrich our understanding on the genetic architecture of nicotine clearance rate.

J.M. Vink /Nijmegen, NLD/:
Do genetic risk factors for cannabis and smoking predict e-cigarette and water pipe use?

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There seems to be a shift from traditional cigarette smoking to the use of other smoking-related products like e-cigarettes and water pipe. Recently we have shown that the genetic correlation between cigarette smoking initiation and cannabis initiation is 0.84 suggesting a large overlap in genetic factors influencing nicotine and cannabis use (both often smoked).

The main objective is to explore the association between the polygenic risk score for cannabis and smoking with e-cigarette use and water pipe use in order to test for an underlying genetic vulnerability for the use of these alternatives for smoking. The analyses will be carried out separately in current cigarette smokers and in non-smokers.

Preliminary results show that current cigarette smoking is the strongest predictor of e-cigarette use. However, e-cigarette use is also associated with cannabis use and with water pipe use, within cigarette smokers and non-smokers. We will explore whether these associations are explained by overlapping genetic factors. The summary statistics of the Tobacco and Genetics Consortium (for cigarette smoking) and the International Cannabis Consortium (for cannabis initiation) will be used to calculate polygenic risk scores in an independent sample of the Netherlands Twin Register (N?3500 subjects).

We expect that genetic factors for cigarette smoking and cannabis use will significantly predict e-cigarette use and water pipe use. This would suggest a general genetic vulnerability for smoking or smoking-related behavior. Consequence for practice or policy could be that with cigarette smoking cessation programs the use of other tobacco-related products should be monitored too.

M.R. Munafò /Bristol, GBR/:
Evidence for a causal effect of smoking on caffeine consumption: a Mendelian randomisation analysis in the UK Biobank

A. E. Taylor M. R. Munafo

Smokers tend to consume higher amounts of caffeine than non-smokers and there is evidence for a positive relationship between cigarette consumption and caffeine consumption in daily smokers. Cigarette smoke increases the metabolism of caffeine, so it is plausible that the positive association represents a causal effect of smoking on caffeine intake.

To investigate this, we performed a Mendelian randomisation study in 114,321 individuals (aged 40-70 years) from the UK Biobank. We used a genetic variant, rs16969968, in the CHRNA5 nicotinic receptor as a proxy for smoking heaviness, to reduce bias from confounding and remove the possibility of reverse causality. Daily tea and coffee consumption (cups per day) were self-reported at the UK Biobank assessment centre. We used information from the Food Standards Agency to assign values of caffeine to tea and coffee.

In observational analysis, each additional cigarette per day consumed by smokers was associated with a 5.4 mg increase in caffeine consumption from tea and coffee (95% CI: 5.1, 5.8). In Mendelian randomisation analysis, each additional copy of the minor allele of rs16969968 (which increases daily cigarette consumption) was associated with an 8.24 mg increase in caffeine consumption from tea and coffee (95% CI: 0.88, 15.61) in current smokers. However, there was no clear evidence that rs16969968 was associated with caffeine consumption in never or former smokers.

These findings suggest that higher cigarette consumption causes increased caffeine intake. This is consistent with faster metabolism of caffeine by smokers, but may also reflect behavioural links between smoking and caffeine intake.

T. Korhonen /Helsinki, FIN/:
Smoking and cancer among monozygotic discordant twin pairs: The Nordic Twin Study of Cancer

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There is strong evidence of the role of smoking in cancer. However, analysis of discordant monozygotic (MZ) twin pairs is one of the most powerful designs to investigate causal nature of such association. We investigated the associations of smoking with selected cancer types while controlling for genetic and shared environmental confounding. The NorTwinCan consortium includes population-based cohorts from the Danish, Finnish, Norwegian, and Swedish twin registries. Each twin has an individually unique national registration number, allowing for linkage to the national cancer and mortality registries with complete follow-up, drop-out being only due to death or emigration. Cancer occurrence was obtained from the national cancer registries and computed from the baseline when smoking status was determined until the end of follow-up. We classified the participants as never, former or current smokers. We focused on MZ twin pairs where one co-twin had any of the following cancer types (Bladder, Kidney, Larynx, Liver, Lung, Oesophagus, Oral cavity, Pancreas) while his/her co-twin had no cancer. We recorded total of 988 incident cancers among never smokers, 2394 cases in current smokers, and 630 cases in former smokers. Time-to-event analysis based on individuals showed that in comparison to never smokers, current and former smokers had elevated Hazard Ratios: HR=3.06 (95%CI:2.47-3.79) and HR=1.77 (95%CI:1.40-2.25), respectively. Then we analyzed MZ twin pairs which were discordant for cancer status (one twin had while his/her co-twin did not have cancer). In comparison to never smoking co-twin, the currently smoking co-twin had HR=2.66 (95%CI:1.72-4.11) and for the formerly smoking co-twin HR=1.87 (95%CI:1.16-3.03). The associations of smoking with several types of cancer found in individuals were replicated among the discordant identical twin pairs. Our data indicate that the association of smoking with cancer is not confounded by shared genetic or environmental influences.

11:30 – 12:30
3.2 M - Assessing e-cigarette use

S. Kelder /Austin, USA/
Results from an e-cigarette pilot test in 25 USA middle schools: Catch Clean Air

S Kelder; A Prokhorov §; D van Dusen %*

Given the exponential incidence in E-cigarette among American youth, a rapid response to the epidemic is needed to inform students, parents, and schools about nicotine addiction, and other potential health hazards. The CATCH Clean Air program was designed and pilot tested in spring 2016 for 6th, 7th, and 8th grade students (age 10-13), in 35 US middle schools, in 7 states. CATCH Clean Air was developed using Social Cognitive Theory, and was based on a) the MN Smoking Prevention Program, b) empirical evidence describing potent intervention methods from cigarette smoking prevention trials, and c) with experienced curriculum writers and middle school teachers. The finished CATCH Clean Air program is peer-led and includes six 20-30 minute classroom lessons focusing on: norm leveling of teen E-cigarette use, media literacy, social inoculation refusal skills, knowledge, attitudes, and beliefs. In Phase (1), 15 experienced middle school teachers critiqued the program; in Phase (2), 23 teachers taught the program and provided detailed feedback, and 1,371 students provided pre and posttest feedback. Results from teachers include: a) high teacher agreement on cultural appropriateness (91%), confidence teaching the program (91%), sufficient e-cigarette background information (86%), and reported peer leadership success (73%). Results from students include: a) 68% liked the lessons. b) 86% felt less likely to use an e-cigarette; 86% increased what they know about e-cigarettes, 70% discussed what they learned with family and friends. In Phase (3), the program will be refined based on the pilot test and prepared for more formal evaluation.

M. Lucherini /Edinburgh, GBR/:
Young adults' perceptions of e-cigarettes: a qualitative study

M. Lucherini A. Amos

Smoking is declining among young adults in the UK. However, this remains an important age group for smoking uptake, with smoking prevalence increasing between the ages of 16 and 24. It is unclear what impact, if any, e-cigarettes are having on young adults' smoking behaviours. This paper presents findings from a qualitative study which explored the perceptions of e-cigarettes held by young adults (aged 16-24). Small friendship group interviews were undertaken with over 60 participants between September 2015 and April 2016. Purposive sampling drew participants to reflect a range of age, gender and economic status. Most participants were smokers or ex-smokers and were drawn from disadvantaged communities in Scotland, where smoking is more prevalent. This paper considers three main findings. The first is the participants' wariness of replacing one addiction with another. The second is the perceived inability of e-cigarettes to fulfil the social, cultural and physiological value of cigarettes in participants' lives. The final finding is the perceived increasing normalisation of e-cigarette use among disadvantaged young adults, with participants noting how e-cigarettes have evolved from just smoking cessation products to become also lifestyle devices. This research suggests that more consideration should be given to the role of smoking in young adult's lives and social worlds, and in what ways e-cigarettes are understood in this context. Given the increasing debate about the role of e-cigarettes in harm reduction strategies, this research provides insight into how these devices are understood and experienced by a disadvantaged section of the UK population.

E. Soule /Richmond, USA/:
Positive Outcome Expectations of Electronic Cigarette Use: A Concept Mapping Study

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Background: Little is known about positive electronic cigarette (ECIG) use outcome expectations. This study used concept mapping (CM), a mixed method approach, to describe the positive outcomes associated with ECIG use.

Methods: Past 30-day ECIG users (n=63; 38.1% female, 84.1% lifetime cigarette smokers) over the age of 18 from the US were recruited from ECIG forums and Craigslist websites from across the US to complete

a CM module. Participants brainstormed statements that completed the prompt "A specific positive, enjoyable, or exciting effect (i.e., physical or psychological) that I have experienced while using or immediately after using an electronic cigarette/electronic vaping device is..." Forty participants sorted 124 brainstormed statements into groups of similar content and 43 participants rated statements based on if they felt this was a positive outcome personally. A concept map of themes was created based on participants' aggregated sorting data.

Results: Multivariate analyses generated a map of six clusters of ECIG use positive outcomes: Environmental Interaction, Social Effects, Physical Health Effects, Decreased Cigarette Use Benefits, Pleasurable Psychological Effects, and Sensation Enjoyment. Mean cluster ratings differed based on tobacco use characteristics. Advanced generation ECIG users rated statements in the Decreased Cigarette Use Benefits and Sensation enjoyment clusters higher. Dual ECIG and cigarette users rated statements in the Environment Interaction, Social Effects, and Pleasurable Psychological Effects clusters higher than non-dual users.

Conclusions: Positive ECIG use outcome expectations may provide benefits to cigarette smokers looking to quit, however, regulators should consider policies that limit the appeal of ECIGs to non-tobacco users.

J. Babjakova /Bratislava, SVK/:
E-Cigarettes Use Among Medical Students In Slovakia

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New York University (NYU), School of Medicine, Department of Pediatrics, New York, USA

Introduction Usage of electronic cigarettes (EC) among young adults is not well documented in Slovakia.

Methods Our online survey (opened from May 2015) includes questions about personal use of EC, perceptions of harm, ideas about their role in disease causation, education and cessation training related to EC, classical cigarettes and alternative tobacco products (ATP). The survey was adapted from American Survey on Tobacco and ATP (NYU).

Results As of now, 577 students from FMCU have filled in the questionnaires; the average age was 22.7±2.4 yrs. The sample was comprised of 486(84.2%) Slovak and 91(15.8%) foreign students, 415(71.9%) women, 162(28%) men; 385(66.7%) non-smokers, 111(19.3%) ex-smokers and 81(14%) current smokers.

EC are currently used by 13.5% medical students, more males than females (22.2%vs10.12%; OR 2.53, 95% CI 1.55- 4.13), more foreign students than Slovak students (24.2%vs11.52%; OR 2.44, 95% CI 1.41-4.26), more smokers of classical cigarettes than non-smokers (46.9%vs8.06%; OR 10.07, 95% CI 5.85-17.34). EC seem to be less harmful for 59.97 % students, mostly in the age groups<=24 (61.76%vs51.49%; OR 1.46, 95% CI 1.03-2.07), 41.25% of students consider EC to be less addictive, 48.5% of foreign students and 58.4% of Slovak students do not have any idea what EC contain, 55.6% think they do not to get enough education on ATP and EC during their study.

Conclusions The results show the lack of knowledge about EC and ATP among medical students. The information about the new tobacco products and effective smoking cessation should be added into curricula of the future physicians.

UBLG hall

9:00 – 10:00
3.1 S - Tobacco treatment to improve mental health

J. McGowan /London, GBR/:
Offer and use of clinical support for smoking cessation in smokers with anxiety and depression: a cross sectional survey

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§Addictions Department at the Institute of Psychiatry, Psychology & Neuroscience (IoPPN), King's College London, UK

Aims: Depression and anxiety are prevalent in the smoking population. Both undermine the success of quit attempts, but the underlying causes of this are unclear and may relate to service uptake or support. Here we examine whether GP advice and offer of support may contribute to this difference.

Methods: Data came from the Smoking Toolkit Study. Participants were 1,162 English current or recent ex-smokers, aged 40 years or over, surveyed in 2012. Participants with and without anxiety and/or depression (as determined by EQ-5D) were compared on smoking characteristics, GP quit advice and offer of support as well as stop smoking aid use with logistic regression analyses, adjusted for age, gender and social grade.

Results: Participants with depression/anxiety had greater nicotine dependence (OR=1.22, 95% C.I.=1.11-1.34), and slightly higher motivation to quit (OR=1.08, 95% C.I.=1.00-1.16) than those without. Smokers with depression/anxiety were more likely to recall being offered support to stop smoking (OR=1.50, 95% C.I.=1.05-2.13). However, there was no difference in use of stop-smoking aids during the past year compared with smokers without depression/anxiety.

Conclusions: Smokers who report feeling anxious or depressed appear more likely to be offered support with stopping than other smokers but are no more likely to take up the offer, despite being more motivated to stop. Tailored support for smokers with mental health problems may be needed, and more needs to be done to make the offer of aid more attractive.

A. Brinzaniuc /Cluj-Napoca, ROU/:
Secondhand tobacco smoke exposure and depressive symptoms during pregnancy

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Introduction: Recent evidence suggests that secondhand tobacco smoke (SHS) exposure is associated with depression symptoms during pregnancy. However, data are limited to few studies, none from Eastern Europe. We report findings from a large clinical sample of pregnant women in Romania, on the association between prenatal depression symptoms and self-reported SHS exposure.

Methods: Data were collected using a self-administered questionnaire, administered to women while attending prenatal care (n=2,197). Depression symptoms were measured using the Edinburgh Prenatal Depression Scale (EPDS). Women estimated SHS exposure (in hours), and were subsequently grouped into no-, moderate- and high exposure groups. Data was analyzed using univariate and multivariate logistic regression, controlling for main confounders for depression. Stratified analysis by maternal smoking was also conducted.

Results: The prevalence of depression symptoms was 24.1%. Unadjusted analysis suggested that women exposed to SHS during pregnancy were more likely to report depression symptoms with OR=1.70, CI:1.34-2.15 (p=.000) for the moderate exposure group and OR=2.46, CI:1.77-3.42 (p=.000) for the high exposure group. After adjusting for confounders, the association weakened but remained statistically significant in both groups (moderate exposure: OR=1.66, CI:1.29-2.14, p=.000; high exposure: OR=1.86, CI:1.30-2.64, p=.001). The stratified analysis suggested that women who have quit smoking and were

heavily exposed to SHS during pregnancy were a particularly vulnerable group (OR=3.26, CI:1.39-7.60, p=.006) compared to non-exposed women.

Discussions: Findings suggest a positive association between SHS exposure during pregnancy and depression symptoms. Public health efforts should focus on protecting pregnant women from SHS, with heightened attention towards women who quit smoking during pregnancy.

M.J. Duaso /London, GBR/:
Smoking cessation in substance misuse settings: exploring attitudes of staff who smoke or have recently stopped

*M.J. DUASO * A. McNEILL§ J. NEALE§*
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§ National Addiction Centre, Institute of Psychiatry, Psychology and Neuroscience, Kings' College London, UK

Tobacco treatment guidelines recommend that substance misuse clients who smoke should be offered assistance to quit smoking. High levels of smoking amongst addiction service staff may negatively affect smoking cessation support offered within those services.

The aim of this study was to explore behaviours and attitudes of tobacco smoking healthcare staff towards the provision of smoking cessation support in substance misuse services.

Semi-structured interviews were conducted with 30 addiction service staff who smoked or had quit during the previous 12 months. The study was undertaken in community drug services, in-patient addiction units and residential drug and alcohol services across the South East of England. Maximum variation sampling ensured a mix of males and females, different age groups and job roles. Interviews were transcribed verbatim and analysed using the Framework approach.

Staff viewed smoking cessation by clients as important but not a priority. Most argued that clients' smoking was a way of coping with the stress of treatment and so tobacco cessation attempts should be delayed until late recovery. Only a minority of staff supported quit attempts early in treatment. Staff attitudes towards smoking cessation by clients could be divided into 4 categories: "Supportive", "Laissez- affaire" "Compassionate paternalism" and "Therapeutic nihilism".

Results indicate that despite a variety of responses, the majority of participants presented a relatively passive attitude towards the delivery of smoking cessation interventions. Professionals' own smoking and misconceptions about best practice should be addressed to encourage a more pro-active implementation of smoking cessation provision in substance misuse services.

J.A. Bowman /Newcastle, GBR/:
An integrated smoking cessation intervention for mental health patients: a randomised controlled trial

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§§§ Stanford Prevention Research Centre, Stanford, USA.

Background: Interventions with a potential population health impact are required to redress the disproportionate tobacco-related health burden experienced by persons with a mental illness. This study assessed efficacy of a smoking cessation intervention initiated within an acute psychiatric inpatient setting and continued post-discharge.

Methods: A randomised controlled trial was undertaken across four psychiatric inpatient facilities in Australia. Participants (N = 754) were randomised to receive either usual care (n = 375) or a 4-month multimodal smoking cessation intervention (n = 379), upon discharge. Outcomes assessed at 6 and 12

months post-discharge were: 7-day point prevalence abstinence, daily cigarette consumption, number and duration of quit attempts, nicotine dependence and readiness to quit.

Results: Abstinence rates were higher for intervention participants (16.9%) than controls (9.5%) at 6 months post discharge ($p = 0.03$), but not at 12 months ($p = 0.46$). At both 6 and 12 months post-discharge, intervention group participants were smoking fewer cigarettes per day ($p = 0.005$), were more likely to have reduced their cigarette consumption by at least 50% ($p = 0.02$), and to have attempted to quit one ($p = 0.001$) or more ($p = 0.002$) times, relative to controls.

Conclusions: Additional research is required to identify strategies for further promoting quitting behaviours and ultimately achieving sustained smoking cessation among persons with a mental illness.

10:00 – 11:00
Workshop 5 - How to give a good scientific talk

S.J. Heishman /Baltimore, USA/:
Giving a good scientific talk

Stephen J. Heishman, PhD, NIDA Intramural Research Program, Office of Education and Career Development, Baltimore, MD, USA

Aim: To help scientists give excellent presentations.

There are several important principles for creating and presenting a scientific talk. A critical first principle is to know your audience because that determines the nature and content of your talk. Conference presentations are brief, and the audience knows the topic. A general audience requires a broader approach and less jargon. In creating your talk, use the slides to tell a story. Creating effective PowerPoint slides and using them to support your talk will be discussed. Practice your talk until it flows easily. Practice is the best way to reduce anxiety, although other methods will be discussed. In delivering your talk, do not read your slides and respect the audience. Deliver your talk with excitement and enthusiasm. There are several types of questions you can anticipate. Knowledge of your field is the best way to answer questions concisely. Tips on dealing with difficult questions will be presented.

I. Berlin /Paris, France/:
The virtuous circle of knowledge acquisition

Ivan Berlin, MD, PhD, Université P. & M. Curie, Faculté de médicine-Hôpital Pitié-Salpêtrière, Paris, France

Aim: To make young researchers realize that research is not for itself.

All interventional research has only 2 objectives: improvement of life expectancy or quality of life. A research sample is a representative sample drawn from the target population in which the results will be applied. Selection criteria will reduce the representativeness of the sample but this will allow an increase in the likelihood of firm conclusions about efficacy. Research results should be returned to clinical practice, where variance is large leading to potentially controversial results at the individual level.

11:30 – 12:30
3.2 S - Nicotine dependence and abstinence

M. Grabski /Bristol, GBR/:
The Effect of Acute Abstinence on Task Performance in Smokers

M. Grabski, V. Curran, S. Husbands, D. Nutt, S. Ferguson, M. Munafo

Tobacco withdrawal symptoms are an important target for novel treatment development efforts. Tobacco abstinence has been linked to cognitive performance deficits, as well as to increased attentional bias towards smoking related cues. Tasks assessing these domains might serve as a model to indicate the withdrawal state of a smoker, which could be used as an early indicator for the effectiveness of novel smoking cessation treatments. Informed by a systematic review and meta-analysis of the relevant literature, we evaluated a battery of four laboratory tasks measuring response inhibition (go/no-go task), working memory (N-back task), impulsivity (delay-discounting task), and attentional bias (dot probe task with eye tracking) for their sensitivity to acute abstinence. After two morning laboratory sessions (overnight abstinent, smoking satiated), ecological momentary assessment (EMA) of craving levels via a smartphone app was conducted over the course of the afternoon. Participants (N=70, 41% female) were on average aged 22 years (SD 5), smoked 11 cigarettes per day (SD 4) and had an FTCD score of 4.4 (SD 1.6). Abstinence resulted in more commission errors on the go/no-go task (t[69]=-3.07, p=0.003). However, no clear difference was found in omission errors on the N-back task (t[67]=1.49, p=0.14) or the discounting parameter k on the delay discounting task (t[69]=0.18, p=0.86). A repeated measures ANOVA of the eye-tracking data for the dot probe task indicated a main effect of dwell time on picture type (F[1, 57]= 42.53; p<0.0001), but no main effect of abstinence (F[1, 57]=0.60; p=0.81), and no picture type × abstinence interaction (F[1,57]=0.22; p=0.64). Abstinence strongly predicted EMA of craving (ß=.56, p<.001). Go/no-go task performance, augmented by EMA of craving, might serve as a model for tobacco abstinence.

E.-L. Tuovinen /Helsinki, FIN/:
Nicotine dependence moderates the role of weight concerns as a predictor of smoking cessation

E-L TUOVINEN, TH KINNUNEN, SE SAARNI, S MANNISTO, P JOUSILAHTI, K PATJA, O RUOKOLAINEN, J KAPRIO, T KORHONEN

High nicotine dependence and self-reported weight concerns predict lower smoking cessation rates. However, the interplay of them on smoking cessation is less researched. We examined weight concerns (WC) and nicotine dependence and their interaction as predictors for smoking cessation in a 7-year follow-up. Our sample consists of 479 daily smokers at the baseline in 2007 aged 25-74 years from the DIetary, Lifestyle and Genetic Determinants of Obesity and Metabolic syndrome (DILGOM) study. At the baseline participants completed a questionnaire that collected information on demographics, smoking history and other smoking related variables. They also completed a modified version of the weight concern scale by Borrelli & Mermelstein. We analysed baseline WC as the predictor of smoking cessation by 2014 among participants with low nicotine dependence (Fagerström Test for Nicotine Dependence (FTND<4)) and high nicotine dependence (FTND>=4) by logistic regression; continued daily smokers were set as the reference group. We performed two analyzes, 1) in the general sample with self-ascribed smoking status in 2014 (n=479) and 2) in the carbon monoxide (CO)-verified sub-sample (n=346). Fifteen percent of the daily smokers in 2007 were former smokers in 2014 in the total sample. WC by FTND –interaction was significant in both general (p=0.03) and CO-verified (p=0.001) samples. In the general sample, adjusted for age and sex, higher WC predicted lower likelihood for cessation (OR=0.95; p=0.03) for the low-dependent (n=282), but no association was seen (OR=1.01; p=0.66) for the high-dependent participants (n=201). The results were replicated in the CO-verified sub-sample (low-dependent OR=0.93; p=0.05; high-dependent OR=1.07; p=0.14) respectively. Higher WC predict lower smoking cessation rates for low-dependent smokers, but not for high-dependent smokers. Weight concerns and nicotine dependence should be addressed concurrently in smoking cessation interventions.

C.I. Meghea /East Lansing, USA/:
Predictors of postnatal smoking relapse intent in a sample of Romanian couples

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Background: Most of the mothers who quite spontaneously during pregnancy relapse smoking soon after birth. The objective was to explore maternal and couple correlates of relapse intent, with a focus on dyadic efficacy as an emphasis for couple-focused postnatal relapse prevention interventions.

Methods: 228 women who quit smoking during or before pregnancy were recruited after giving birth in two large maternity clinics in Romania. Intention to relapse within 6 months after birth, dyadic efficacy for smoking cessation, smoking abstinence self-efficacy, partner's smoking status, partner interactions, teamwork standards, heaviness of smoking and other characteristics were assessed. We present smoking relapse intentions after birth in this sample of Romanian recent mothers and partners and explore relapse-relevant correlates.

Results: Approximately one third of the new mothers plan to relapse smoking in the first 6 months after birth. The dyadic efficacy smoking cessation score was 75/100. A dyadic efficacy for smoking cessation score above the median was strongly correlated with reduced odds for smoking relapse (OR=0.23, $p<0.01$). No other considered covariates were associated with intent to relapse, including whether the partner smokes, daily smoking in the house, discussing smoking with a medical provider, and high teamwork standards relating to the partners.

Conclusion: The results of this study lend support to couple-focused smoking relapse prevention interventions that specifically target the enhancement of the dyadic efficacy for smoking cessation. Those postpartum relapse prevention interventions may not need to focus on partner smoking and daily smoking in the house, which are however risk factors for pregnancy smoking.

C.E. Smith /Edinburgh, GBR/:
"There's no point in us stopping together… it would be a nightmare":
A qualitative study of couple dynamics during smoking cessation

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Background: Smoking represents a continuing major public health problem in the UK. While existing stop smoking interventions are cost-effective, there is still considerable scope for improvement. Recent research suggests that smokers are more likely to quit successfully if their partners also try to stop.

Objectives: To inform the development of couple-centred smoking cessation interventions by advancing our understanding of couple interactions around quitting.

Methods: A longitudinal qualitative study, exploring the complexity of interactions that occur between couples when one, or both, is attempting to quit. Twelve participants (8 with smoking partners, 4 with non-smoking partners) from diverse socio-demographic backgrounds were recruited through three NHS stop smoking services in Scotland. In-depth interviews were undertaken at approximately four and thirteen weeks after quitting, and a thematic analysis carried out.

Results: Participants portrayed their interactions with their partners in many different ways, with widespread variation in the levels of collaboration involved. More collaborative styles tended to be characterised by: (1) a negotiated decision, with couples agreeing together a plan of action; (2) a mutual investment in the quit, creating a sense of being in it together; and (3) a readiness to consider their partner's needs when deciding on a course of action.

Conclusions: Quitting is a two-way process in which couples continually respond and adapt to each other, shaping the extent to which cessation is seen as a shared endeavour.

Recommendations: Efforts to develop couple-centred smoking cessation interventions need to recognise the inter-dependent and communal nature of quitting, seeking to support both partners in devising quit strategies that work individually and collectively.

POSTERS

September 8

Poster Session 1:
Smoking cessation clinics outcomes and practice

1. Treatment of long term use of oral nicotine replacement therapy - results from smoking cessation clinic

K. Zvolska, E. Kralikova, A. Pankova, L. Stepankova, M. Blaha, P. Ovesna, M. Kuhn

Introduction: About 5% who quit smoking continue to use nicotine replacement therapy (NRT) more than a year. We examined patients intensively treated (psychobehavioral intervention and pharmacotherapy) from prolonged NRT use.

Methods: Among 4115 patients of the Centre for Tobacco-Dependent in Prague between 2007-2015, 19 used oral forms of NRT longer than a year after their quit date, plus 2 cases with NRT use 6, and 8 months respectively. All of these 21 patients were motivated to stop NRT use (61.9% men, average age 46.3, SD 13.4; average Fagerström Test of Cigarette Dependence 6.6, SD 2.3; average number of cigarettes per day 25.3, SD 12.6). The average length of NRT usage after D day was 2.59 years (0.5 - 12 years, median 1.5 years). Nicotine gums were the most common NRT form (14/21), 14.3% patients used microtabs (3/21), 16.7% inhaler (2/21) and lozenges (2/21), in average 9.7 doses per day (1-30, median 8), average daily dose of nicotine 13.1 mg (1-30 mg, median 10 mg). Follow-up in successful patients after stopping NRT use was 1.1 years on average (0.5 - 2 years, median 1).

Results: 42.9% of all patients (9/21) used varenicline with average duration of therapy 10.2 weeks (4 - 26 weeks, median 8 weeks). Two patients used patches.

47.6% patients (10/21) successfully stopped use NRT - 70% of them (7/10) used varenicline, 10% (1/10) patch and 2/10 gradually reduced NRT.

Conclusion: Treatment of prolonged nicotine replacement therapy use needs intensive and complex approach both with psychobehavioral support and pharmacotherapy.

2. Treatment of tobacco dependence outcomes from a specialist model in medical centre

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3 - Institute of Biostatistics and Analyses at the Faculty of Medicine and the Faculty of Science of the Masaryk University, Brno, Czech Republic

Introduction: Intensive psychobehavioural treatment and pharmacotherapy is the most effective smoking cessation method.

Methods: two-hour intervention plus either varenicline, nicotine replacement therapy and/or bupropion, at mean 6 visits/year, 12-months CO-validated abstinence rates according to Russell standard.

Results: From 3,770 patients who completed 12-months follow up, the abstinence rate was 39 % (n=1,468), among those using any kind of pharmacotherapy 44 % (n=3,070), depending also on the length pharmacotherapy use: in case of 3-6 months 64 % (n=727), in case of 6-9 months 73 % (n=255) patients did not smoke.
Conclusions: The most effective smoking cessation treatment was the intensive intervention combined with prolonged pharmacotherapy use (about 6 months).

3. No difference in one-year abstinence from smoking between first and second treatment

L. Stepankova, E. Kralikova, K. Zvolska, A. Pankova, P. Ovesna

Background: Tobacco dependence is a relapsing disease, often requiring retreatment.

Aim: To evaluate one-year-abstinence and related aspects in recurrent intensive tobacco dependence treatment (same settings).

Method: From 4,992 patients treated in the Center for tobacco-dependent, 4,415 completed one-year follow-up. We compared their data with 85 of them, who also completed the second cycle of treatment between 2012-2014, including the type and length of pharmacotherapy.

Results: CO-validated abstinence of patients passing the 2-hour-intervention (second visit) was 34.6% (1528/4415). From total number of 85 patients, who completed two cycles of treatment, there were 26 (30.6%) successful in first treatment and 29 (34.1%) successful in second treatment (P=0.805). The similar proportion of patients was treated by Champix in both treatment (58.8% vs 65.9%) and they smoked similar number of cigarettes before first and second treatment (23.3 vs 20.0). The difference between lengths of pharmacotherapy was tested by pair samples T-test. The mean and standard deviation for both treatments were 2.61 (+-3.25) and 2.89(+-3.29) months for first and second treatment respectively (P=0.498).

Conclusions: No differences were found in the treatment outcomes and length of pharmacotherapy use between the first and second cycle of intensive tobacco dependence treatment. It is important and valuable to provide a possibility of retreatment in case of relapse.

4. Using Randomized Trial Benchmarks for a Smoking Cessation Program in Hospitals: Translating Research into Practice

Patricia M. Smith

Objective: This presentation reports on a project designed to translate an intensive tobacco cessation inpatient program into standard hospital care using the standardized protocols and benchmarks set for the program in randomized trials (RCTs).

Methods: All inpatients hospitalized were asked if they used tobacco in the last month. A full-time smoking cessation nurse (RN) was hired to screen the daily census for smokers, review charts for eligibility (18+ yr, medically stable, >36-hr stay), enroll patients, deliver the in-hospital intervention and post-discharge follow-up, and collect the same data collected in the RCTs. The intervention included 60 minutes of bedside education/counseling, telephone counselling at 2, 7, 14, 21, 30, 45, and 60 days post-discharge, and follow-up calls at 3, 6, and 12-months. Pharmacotherapy was offered at no-cost during, but not after, hospitalization. Patients those who dropped or were lost-to-follow-up were counted as smokers for the analyses.

Results: Since inception, 68% of smokers were ineligible, primarily due to being medically unstable or missed, 25% refused the program, and 7% enrolled, among whom 35% were abstinent at 1-yr post-discharge. Refusal rates and abstinence were identical to the RCTs. Enrollment was lower than the RCTs due to higher ineligibility (patient acuity) and higher percentage of patients being missed due to shorter stays and heavy nursing workload.

Conclusion. The RCTs benchmarks provided standards by which to interpret outcomes, and enhanced confidence that the program was effective in practice. The intervention, successful in different countries and outside of RCTs, has sufficient evidence to recommend translation into practice.

5. Knowledge and Practice on Smoking Cessation Among Healthcare Providers in Malaysia: A Preliminary Report.

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Introduction: Healthcare providers are in an ideal position to advise the patients to quit smoking by providing effective brief intervention. However, research has shown that many healthcare providers have not received adequate training on advising patients to quit smoking. Aims: To determine the knowledge and practices among healthcare providers in providing smoking cessation intervention. Methods: A cross-sectional study was conducted from January 2016 to April 2016 among healthcare providers in Malaysia. A questionnaire assessing their demographic background, smoking cessation knowledge and practices was conducted. An online survey was designed specifically for this study and submitted to participants via email. Chi-square analysis was conducted using for testing the difference of knowledge and practices across the training status. Results: Approximately 71.9% (189) was completed the online survey and more than half of them (66.7%) had received smoking cessation training during their working lifetime. Among healthcare providers who had received smoking cessation training, 68.9% (p=0.093) asked patients/clients regarding their smoking status and only 46.6% (p=0.273) asked about quitting smoking. Just under half of them were confident in providing assistance for patients/clients to quit smoking (44.4%, p<0.001), use NRT as treatment to quit smoking (47.6%), and were confident to use Varenicline/ Champix as treatment to quit smoking (42.9%, p=0.003). Conclusion: Healthcare providers were still lacking in knowledge and practices for smoking cessation despite prior training at work. Prior research has found that training improves practice and therefore accredited training is needed, urgently. A larger study is needed to confirm these findings.

Poster Session 2:
Tobacco cessation in mental health settings

6. Tobacco addiction in patients with mental illness: the role of other substance use disorder

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Background: Smoking rates are higher in individuals with mental disorders than in general population. Little is known about tobacco addiction of those with mental disorders and co-occurring addictions (other than nicotine).

Main objective: Compare tobacco addiction among three groups of smokers: individuals with mental health disorders (other than substance use) (MHD), individuals with other substance use disorders (SUD) and individuals with both conditions (MHD+SUD).

Methods: Clinical data, including demographic variables, psychiatric diagnosis and tobacco history were analyzed in a cohort of 731 smoking cessation treatment seekers.
A multivariate analysis was performed including covariables that reached significance at bivariate level.

Results: Age is not different among groups. Women are more likely to have MHD rather than SUD or MHD+SUD (?2=88.1; df=2; p<0.001).

Individuals with MHD+SUD, smoke more cigarettes per day in the previous 6 months (F=3.5; p=0.032) and have higher exhaled carbon monoxide levels than individuals MHD and SUD (F=7.9; p<0.001).
Individuals with MHD+SUD and SUD start smoking at younger age (F=6.5; p=0.002) and SUD have less quit attempts than MHD and MHD+SUD (F=3.3; p=0.036).

There are no differences in Fagerström Nicotine Dependence Test, nor in cigarettes per day in their lifetime.

Concluding statement: Individuals with MHD+SUD have some measures of severity of tobacco addiction higher than individuals with MHD and SUD. Individuals with SUD were less likely to make any quit attempt than the other groups.

Recommendations for practice: Individuals with MHD+SUD could need more treatment intensity as their tobacco addiction may be more severe.

7. Addressing tobacco cessation in an inpatient addiction unit

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Background: Smoking rates are very high in individuals with other substance use disorder (SUD). However, only limited effort has been done in order to increase tobacco cessation rates among this patients.

Main objective: To collect data about patient motivation to maintain tobacco abstinence, after discharge from a smoke-free inpatient addiction unit, and assess the evolution of cessation.

Methods: The inpatient intervention consisted in a weekly motivational group and free tobacco pharmacological treatment, which was maintained after discharge.

Sociodemographic and clinical data, motivation for cessation and evolution after discharge were analysed in a cohort of 66 patients followed throughout 12 months.

Descriptive statistics were used to characterize the study sample at baseline and sustained-abstinence rates at follow-up.

Results: The 66 patients represent the 12.11% of total admissions. 33.3% women. The mean age was 46.6 years (SD=8.8).

Alcohol was in 48.5% the main addiction. 54.5% of patients had more than one non-tobacco SUD.

Tobacco history: cig/day M=26.7 (SD=11.5), 63.6% had a previous cessation attempt, Fagerström test M=7.1 (SD=1.2), Richmond Test M=8.9 (SD=1.2).

Continuous abstinence rates were 66.7% at first week, 40.9% at first month, 28.8% at third month, 18.2% at 6 months and 13.6% at one year follow-up.

Concluding statement: Intervention for tobacco cessation is useful in SUD patients treated in detoxification units. A significant number of individuals can maintain abstinence after discharge.

Recommendations for practice: Addressing tobacco cessation in SUD patients is possible and sustained-abstinence rates are clinically significant. Mental health professionals must be aware about this evidence.

8. Tobacco and bipolar disorder: A therapeutic challenge

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Background: Smoking prevalence in patients with bipolar disorder is one of the highest among psychiatric patients. Even though, there are few studies that evaluated smoking cessation in this population.

Main objective: To collect data from the bipolar patients who attended a tobacco cessation unit and analyse the results of a cessation attempt.

Methods: Sociodemographic and clinical data; motivation for cessation, self-efficacy; pharmacological treatment and evolution of 19 patients with bipolar disorder were analysed.

The treatment consisted in a cognitive-behaviour intensive intervention and pharmacological treatment.

Descriptive statistics were used to characterize the study sample at baseline and sustained-abstinence rates at follow-up.

Results: 2.65% women. Mean age 51.8 years old. 52.6% with a medical comorbidity tobacco related. 15.8% with alcohol dependence.

Tobacco history: Cig/day M=30.1 (SD=16.9). Fagerström test M=7.32 (SD=1.7). 42.1% had a previous cessation attempt.

Follow-up: 5 patients didn't come back after the first consultation (33%), 14 patients began the treatment, 68.4% with pharmacologic treatment (69.2% nicotine patches, 15.4% varenicline and 15.4% both). 2 patients didn't come after cessation-day. Continuous abstinence rates were 63.1% at first week, 52.6% at first month, 26.3% at 3 and 6 months, and 21% at one year follow-up.

Concluding statement: Very few smokers with bipolar disorder attend our tobacco cessation program and the continuation of treatment becomes an important difficulty. Even though, a significant percentage of patients can achieve good results, and maintain the abstinence.

Recommendations for practice: Tobacco cessation programs for psychiatric patients must be aware of special difficulties of this population. The mental health professionals must to do important efforts in motivation for tobacco cessation.

Poster Session 3:
Characterising e-cigarette usage and effects

9. Effect of E-Cigarette Treatment on Cigarette Craving and Nicotine Withdrawal Intensity in a the prospective randomized control design study to evaluate long term safety, abstinence and reduction rates in smokers not willing to quit: (ECLAT Study)

authors: Pasquale Caponnetto, Christopher Russell, Riccardo Polosa.

Background: Craving is a central feature of tobacco addiction. Craving is thought to predict smoking relapse and may deter individuals from ever trying to quit. Severity of nicotine withdrawal symptoms are known to be predictive of smokers' reduced odds of achieving and sustaining abstinence from smoking in the long-term.

Methods: We designed a prospective 12-month double-blind, randomized, controlled trial to evaluate cigarette craving, nicotine withdrawal intensity, smoking reduction/abstinence, and adverse events in 300 smokers not intending to quit who were randomised to 12-week use of one of three 'cig-a-like' electronic cigarettes: Group A (n =100) used 7.2 mg cartridges, Group B (n =100) used 5.4 mg cartridges and Group C (n =100) used zero-nicotine cartridges.

Results: The two nicotine-containing e-cigarette treatments suppressed baseline craving for cigarettes, for the first two weeks of treatments, to a level that was then maintained for the remaining ten weeks. In contrast, the non-nicotine e-cigarette had no significant effect on baseline cigarette craving at any point across the 12 weeks of use. All three e-cigarettes showed efficacy for suppressing nicotine withdrawal symptoms in comparably small, non-significant, but consecutive increments over the full 12-week treatment period.

Conclusion: Despite the low nicotine level delivered from the e-cigarettes used in this study, in these smokers not intending to quit, the use of nicotine-containing e-cigarettes significantly reduced the subjective intensity of cigarette cravings over 12 weeks of use. These findings suggest that nicotine-containing e-cigarettes may mitigate smoking relapse by consistently alleviating urges to smoke.. These findings also provide a baseline against which the craving suppression efficacy of newer e-cigarette models can be compared.

10. Composition Analysis of E-Liquids and Their Effects on Healthy and Carcinoma Cell Lines

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Increasing number of people use electronic cigarettes (e-cigarettes) worldwide. These devices provide vapour from desired type of liquids (e-liquid). Numerous types of e-liquids are on the market and questions rose about their ingredients and effects.

This study aims to develop methods for analysing the contents of e-liquids and investigate the effects of these substances on cell viability.

Eleven e-liquid samples were obtained and grouped to represent different nicotine levels or flavours. Nicotine and supplementary contents (glycerol and propylene glycol) were determined via high-performance liquid chromatography (HPLC) and gas chromatography/mass spectroscopy (GC/MS), respectively. Two cell lines, (human normal liver epithelial cell line THLE-2 and human pharyngeal carcinoma cell line Detroit 562) were used to investigate the effects of e-liquids on cell viability. Dose dependent cytotoxicity was measured by using MTT assay.

A linear nicotine calibration plot was obtained with the equation of y = 31.831x + 16.661 (R2 = 0,999). Nicotine levels were found to be in concordance with product labels of the e-liquids tested. Cell culture studies showed that, there was a dose dependent decrease for THLE -2 cells. On the other hand, cell viability of Detroit 562 decreased in lower doses but cell survival was seen at mid-high doses for cappuccino and strawberry flavours. Nicotine levels were not determining factor for cytotoxicity.

Total outcome of e-liquids strongly alters regarding to target cell/tissue and it depends on the ingredients, especially flavors used.

Further research regarding dose-dependent mechanisms of action in both healthy and carcinoma cells is required.

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11. Effects of E-Cigarettes-Use in a Smoking Cessation Program – Results of a Field Study

C.B.Kroeger, S. Ofner, D. Piontek

Introduction: There is a scientific debate whether the use of e-cigarettes (EC) enhances or hinders quit smoking attempts. In Germany about 8% of quit attempts are undertaken with the aid of ECs. This study investigated smokers who participated in the "Smoke-Free-Program", a smoking cessation (SC) program for groups lasting 3 to 7 weeks. In the manualised program the participants were informed about medication (NRT) as an SC-aid, but EC-use was not specially addressed. Aim of the study was to analyse the effect of EC-use on abstinence and reduction of tobacco smoking. Method: 639 participants of the Smoke-Free Program were interviewed by telephone 12 months after the end of the program (response rate 70 %). 54 % of the participants were male; the mean age was 48 years, the average cigarette consumption 20 cigarettes per day. Results: Of the participants: 12.6 % used EC during or after the program, 25.5 % used NRT, and 61.7 % used neither EC nor NRT. 80 % of EC-users applied ECs as SC-aid, 79 % used ECs with nicotine, 41 % used medication in addition to EC, 69 % had stopped using EC one year after the program. EC- and NRT-users smoked significantly more cigarettes than non-users. The self-reported abstinence rate after 12 months was 20 % in EC-users, 36 % in NRT-users, and 40 % in non-users. Logistic regression showed a significant negative effect of EC-usage on abstinence one year after the training. Conclusion: In the sample of motivated, professional help seeking smokers the EC-use may interfere with the aim of stop smoking tobacco cigarettes. Perhaps this is because there existed no systematic procedure in applying EC in SC. Perhaps the EC-use hinders to build up a self-concept as a non-smoker.

12. Characterizing the Impact of Flavor in E-cigarette Marketing

Y. Liang, X. Zheng3, D. Zeng, S. Leischow

Background: Flavor is one of the important marketing strategies of e-cigarette industry. It is estimated that there are over 8000 kinds of flavorings or mix in the market. However, the impact of flavor on user online behavior is still unclear. This study aims to characterize the impact of flavor for user behavior.

Method: We collected e-cigarette discussions from 6,670 pro e-cigarette Facebook fan pages from September 2008 to March 2015. A total of 472,435 posts were collected, with 5,606,020 comments. All the content is grouped into 11 categories according to the mention of flavorings using the Vapor Digest Flavor Categorizing System. The most promoted flavorings in social media are Fruit (33.19%), Nut (17.72%), Candy & Sweet (9.28%) and alcohol (7.43%). We used transfer entropy to characterize the impact of each flavor on user behavior. It shows that Fruit and Candy & Sweet have long lasting effects and can attract more users to comment. Furthermore, we compared the sentimental patterns in flavor related content (FC) with that of content unrelated with flavor (UFC) using the sentimental analysis. The very negative content in FC is 12.29%, while it is 20.00% in UFC. For the very positive content, it is 17.05% in FC, and 14.24% in UFC. The ratio of positive content to negative content in FC is 1.4857, while it is 0.8801.

Conclusion: Flavor of e-cigarette in social media can attract more users to interact on social media and is more likely to gain positive comments from users.

13. Growth Pattern of Pro E-cigarette Users in Social Media

Y. Liang, X. Zheng, D. Zeng, S. Leischow

Background: The global e-cigarette and vaporizer market is growing rapidly, estimated to reach approximately $53.8 billion by 2025. This study aims to gain a better understanding of the global e-cigarette market by investigating the growth pattern of pro e-cigarette users in social media.

Method: We got 12,029 fan pages related with e-cigarette products using the keyword searching on Facebook, and coded the retrieved results into 3 types (unrelated, anti or pro e-cigarette).

Results: For the 6,670 pro e-cigarette fan pages, totally 1,350,053 user profiles including gender and country are collected, 79.87% of which are from USA (65.9%), UK (9.56%) and France (4.41%). Due to the differences of population and Facebook Penetration for each country, the Pro E-cigarette Users Per 10,000 Users (PEUPU) is introduced to measure the popularity of pro e-cigarette discussion for each country. According to PEUPU, the top 5 countries are Laos (387), U.S. (24), China (23), Hungary (21), and U.K. (18). Furthermore, for the growth rate of users exposed to the pro e-cigarette content for each country, the top 6 countries are U.S. (92.3%), U.K. (48.7%), France (45.9%), Germany (90.0%), Laos (50.5%), and Indonesia (88.3%). Compared with the male to female sex ratio of Facebook users for each country, the sex ratio of users involved in pro e-cigarette discussion is dominated by male.

Conclusion: The number of users who are in favor of e-cigarette is growing aggressively from 2008 to 2014 in the global scale. The online discussion about pro e-cigarette are mainly involved by male users.

14. Electronic cigarette use at the population level in Finland: a random sample of 7,339 adults

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Electronic cigarettes (e-cigarettes) are a new and highly contested product on the market. Still, little is known about their actual use in the adult population in Finland. We examined the use of e-cigarettes, changes in use, and the associations of e-cigarette use with tobacco products. The data were derived from the cross-sectional postal survey Health Behaviour and Health among the Finnish Adult Population in 2012–2014. Each year, a random sample of 5,000 adults aged 15–64 years was derived from the Population Register. The final data comprised 7,339 respondents. Chi-squared test and binary logistic regression were used to analyze the data. The results showed that at population level, e-cigarette use is currently low (2.3%) but higher among smokers (9.0%). Occasional use in particular has increased considerably. The use of e-cigarettes is more common among younger respondents. At the population level, e-cigarette use is more likely among males, smokers and snus users. Among daily smokers, prior use of nicotine replacement therapy predicts e-cigarette use but nicotine dependence and desire to quit smoking are not associated with e-cigarette use. Our findings indicate that e-cigarettes are used mainly by smokers and they might be used to help quitting or reducing smoking. Still, e-cigarette users who also smoke cigarettes are not more willing to stop smoking compared with other smokers. It is necessary to further monitor e-cigarette use and reasons for e-cigarette use at the population level in order to promote sound public health policy.

Poster Session 4:
Tobacco cessation in primary care and beyond

15. A qualitative evaluation of the Ottawa model for smoking cessation (OMSC) in primary care

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Background:
The Ottawa Model for Smoking Cessation in Primary Care (OMSC) is a quality improvement initiative that offers a simple, systematic approach for addressing tobacco use in clinical settings. It has been implemented in almost 180 practices, and as it continues to expand, it is important to obtain feedback on improvement opportunities to maintain its 'value-add' to its partners.

Objectives:
To conduct a qualitative evaluation to assess: 1) the value OMSC has provided to primary care clinics; 2) barriers to and enablers of successful uptake of the model, and; 3) recommendations to improve the program.

Methods:
A sample of 9 Family Health Teams were recruited with a total of 27 interviews conducted using an interview guide. Interviews were transcribed and analyzed using Nvivo10 qualitative analysis software.

Results:
Enablers included routine Electronic Medical Record documentation, training, and OMSC resources. Barriers included time pressure, competing priorities, and inconsistent provider implementation. Suggestions for improvement included ensuring physician buy-in; minimizing paperwork; providing more detailed explanation of OMSC reports, and; providing opportunities to coordinate with other organizations. Participants highlighted newly acquired cessation skills and knowledge; greater accountability for smoking cessation, and; a stronger priority placed on cessation as value-adds of the program.

Conclusion:
The evaluation recognized the OMSC as a value-added quality improvement program, and further identified specific enablers and barriers to the successful uptake of the program which can be used to further refine the program.

Recommendations:
Ongoing evaluation of the OMSC is important to ensure value-add services are provided to partner organizations.

16. Train of trainers workshops as a model to increase knowledge capacity of nurses in tobacco dependence intervention – a model for Eastern Europe

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Introduction: There is a need to increase awareness among nursing professionals about tobacco dependence and treatment, including brief interventions, in Central and Eastern Europe. The "Eastern Europe Nurses Centre of Excellence in Tobacco Control" (EE-COE) aims to increase knowledge capacity of nurses and influence current gaps in their practice in five countries through a variety of methods, including train of trainers workshops.

Methods: The intensive, all day train-the-trainer workshops are taught by nurses trained in tobacco intervention and cover the tobacco use epidemiology, physical and psychosocial dependence, diagnostics, withdrawal symptoms, treatment options, and tobacco use in selected groups. Participants leave with presentation materials on pen drive in order to implement one hour trainings in their home institutions.

Results: The Czech Republic developed a workshop model that is being disseminated in Hungary, Slovakia, Slovenia, and Romania, the four other countries involved in the EE-COE project. During

2014–2016, workshops took place in Prague (N=8) and across the Czech Republic, i.e. Roadshow (N=5). The total of 244 Czech nurses participated. The similarly structured workshops have been offered in those four countries (avg. 2/year/country). Overall nurses evaluation of the workshops demonstrated positively shifting attitudes of nurses role in smoking cessation intervention.

Conclusion: Continuing increasing interest in the tobacco control education as well as promoting positive attitudes toward smoking cessation intervention among Eastern European nurses can impact future trends in nursing practice. Follow up and support is essential to ensure that nurses participating in the TTT are able to implement additional educational activities in their home institution.

17. The Eastern Europe Nurses' Centre of Excellence for Tobacco Control – Slovak Republic 2016

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In Slovakia die due to diseases caused by the smoking about 11000 people annually, of whom 50% are in the productive age. Although there is a slight decrease compared to the previous years, smoking prevalence in the adult population is almost 30%. There is not paid sufficient attention how to solve the issue of smoking and addiction to the tobacco, although among professional health workers. We have not sufficient and objective data of the smoking prevalence among health professionals in Slovakia. According to the report from 1995, the prevalence among physicians was 30% and among nurses was more than 40%. Although officially reported a slight decrease of smoking among health professionals, the situation at the health clinical work places is still uncomplimentary. Slovakia has joined the international project The Eastern Europe Nurses' Centre of Excellence for Tobacco Control in 2015 organized by the International Society of Nurses in Cancer Care (ISNCC) in coordination with the Society for Treatment of Tobacco Control (STTD). In Slovakia were realised two focus groups, attended by twenty nurses, mostly of them smokers. Furthermore there were realised five workshops, attended by over one hundred nurses. This education module was focused on the seriousness of the issue of smoking as one of the main etiopatogenic factor causing the high rate of morbidity and mortality. Providing nurses by knowledge about steps how to support and help their patients quitting smoking. The part of the modules was to collect demographic data by questionnaire, collecting opinions and attitudes of nurses about using of tobacco and tobacco control. Processing of these questionnaires we obtained valuable and interesting data of representative group of nurses working in clinical practice. These data can be used for the further education and training of health professionals in the field of helping patients to quit smoking, as for the publication and education in this field as well.

18. Profile of Tobacco Users Identified In Primary Care Practice And Predictors of Readiness to Quit

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Background:
Increasing rates of tobacco treatment delivery in clinical settings is an important target for tobacco control and the reduction of healthcare costs, however, there remains a 'practice gap' in rates of tobacco treatment delivery. A more in-depth understanding of characteristics of tobacco users in primary care settings is critical for informing future intervention designs.

Objectives:
To document the prevalence of tobacco use and describe the characteristics of tobacco users identified in primary care practice.

Methods:
A cross-sectional survey in forty-nine primary care practices was conducted. Consecutive patients

were screened for smoking status at the time of their clinic appointment. Current tobacco users completed a survey documenting socio-demographic and smoking related characteristics. Multi-level modelling was used to examine predictors of readiness to quit smoking and the presence of anxiety/depression.

Results:
5,245 tobacco users participated in the survey with an 18.2% tobacco use prevalence. Forty-six percent of respondents reported current anxiety and/or depression. Sixty-one percent reported smoking within the first 30 minutes of waking. Seventy-one percent reported being ready to quit smoking in the next 6-months and 30% in the next 30 days. Readiness to quit was positively associated with higher self-efficacy, male gender, presence of Chronic Obstructive Pulmonary Disease, and greater years of tobacco use.

Conclusion:
This study provides a profile of tobacco users identified across primary care practices in Ontario. Our findings may have important implications for informing future research and practice and increasing both the uptake and outcomes of tobacco treatment interventions delivered in primary care settings.

Recommendations:
Integrated interventions in which both nicotine addiction and anxiety/depression are addressed is an important focus for future research.

19. Boosting efficacy of nurse-led stop smoking interventions with a Quit & Win contest: Pilot study results

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Introduction: Grave disparities in smoking prevalence exist between indigenous Maori, Pacific Island peoples, and other New Zealanders. Primary care nurses routinely provide brief stop smoking interventions to achieve national targets. This pilot study examined the feasibility of adding a novelty quit and win contest to nurses' brief interventions, and any effect on quitting in indigenous Maori, Pacific Island and European smokers.

Methods: The pilot comprised a quasi-experiment and qualitative interviews. Practice nurses collected baseline and one month data describing patients' smoking status, quit attempts and cessation support. In three intervention clinics, they delivered routine brief stop smoking interventions, and provided novelty scratch cards to win online prizes, and enter a $1,000 draw following one month smokefree. Smokers in three control clinics received brief stop smoking interventions only. Researchers conducted qualitative interviews with intervention group nurses and ten patients, and collected all three month data.

Results: Six primary care clinics recruited 67 smokers (37 intervention; 30 control). The novelty quit and win was readily incorporated into nurses' practice. It appealed to nurses and Maori and Pacific Island patients, increased time to first cigarette, and attracted first time quitters. However, it had no extra effect on smoking cessation compared with usual care.

Conclusions: While the pilot does not indicate potential for triggering mass quitting, it reduced dependency, attracted Maori and Pacific Island smokers, and engaged first time quitters. Low cost, novelty activities to refresh routine brief stop smoking interventions, and motivate practice nurses to engage more smokers in quitting are recommended.

Poster Session 5:
Tobacco control policies and future needs

20. Implementation of the WHO FCTC Article 14: a survey of tobacco dependence treatment in 142 countries

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Article 14 of the WHO Framework Convention on Tobacco Control (FCTC) and its guidelines require Parties to promote tobacco cessation and enable access to treatment. The purpose of this survey was to assess Parties' implementation of Article 14 and its guidelines. A 26 item questionnaire, including questions on infrastructure (treatment guidelines, strategy, budget, recording tobacco use, helping healthcare workers stop), and support systems (brief advice, quitlines, specialised cessation services, access to treatment, availability and affordability of medications) was sent electronically to a purposive sample of tobacco cessation and tobacco control experts in 172 countries between March and July 2015. Analyses were conducted by World Bank income level.

The response rate was 83%. Fewer than half of countries had official treatment guidelines (n=57, 40%), a treatment strategy (n=46, 32%), helped healthcare workers quit (n=63, 44%), or integrated brief advice into existing healthcare services (n=62, 44%). Only one-third mandated recording tobacco use in medical notes (n=42, 30%) and a quarter had quitlines (n=33, 23%) or specialised tobacco cessation services (n=37, 26%).

Overall, cessation support decreased with income level and was less accessible in low and middle-income countries. Affordable measures that countries should implement quickly include recording tobacco use in all medical notes, integrating brief advice into existing healthcare services, and helping healthcare workers stop using tobacco. We also suggest that countries implement the Article 14 guidelines more actively, including conducting a national situation analysis, and developing official cessation strategies and guidelines.

21. Light and non-daily smokers in Brazil: Who are they?

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The research of light (?10 cigarettes per day) and non-daily smokers in developing countries including Brazil is still scarce, despite the high prevalence of these groups among smokers. The main objective of this study is to describe health and smoking characteristics of adult light and non-daily smokers in Brazil. We analyzed data from the Brazilian National Health Research of 2013 (n = 60.202 individuals), a recent cross-sectional study representative of the Brazilian adult population. Among manufactured cigarette smokers, 12.8% were non-daily smokers, 47.4% were light smokers and 39.8% were moderate/heavy smokers. Non-daily smoking was associated with hypertension, diabetes, cancer and cohabiting with another non-daily smokers. Light smoking was associated with cancer and was the only pattern associated with a higher risk of stroke. Light smokers were more likely to live with another daily smoker. Both groups were associated with less physical activity than never smoking and higher binge alcohol consumption. Contrary of expected, light and non-daily smokers were more likely to have tried to quit in the past than moderate/heavy smokers but they were less likely to seek treatment with a healthcare professional. We concluded that low-level smoking represent a large proportion of smokers in Brazil and carry substantial health risks related to tobacco use. Future public health policies and cessation protocols in Brazil must take the different patterns into consideration to effectively target these groups in order to reduce the damage caused by smoking in Brazil.

22. Relationship between gross domestic product per capita and decrease of tobacco sales at European level and at Spanish level

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Objectives: Tobacco sales are decreasing in developed countries, but increasing in developing countries. Our goal was to assess the relationship between GDP per capita and tobacco sales in European countries and also in Spanish regions in the first decade of XXI Century. Methods: We assessed GDP per capita in European countries and also in Spanish regiosn. We assessed the decrease of tobacco sales in the first decade of XXI Century for Europen countries and for Spanish regions. We correlate both variables (GPD per capita and decrease of tobacco sales) at European level and at Spanish level. We obtained data from INE (National statistics institute) and economic publications. Results: There was a significant correlation between GDP per capita and tobacco sales decrease for European countries (Pearson correlation: 0,572; p=0.003) but not for Spanish Regions (Pearson correlation: -0,015; p>0,8 NS). Conclusions: There is a relationship between GDP per capita and GDP and the decrease of tobacco sales at European level, suggesting that richer countries in a rich region like Euroe show a favorable trend regarding tobacco sales. Nevertheless this relationship tends to desapear within a concrete country, particularly Spain. This may well be due to the effect of a common regulation and to the fact that internal differences in GPD per capita are lower for regions within the same country.

23. Network Analysis of the 2015 WCTOH: Pilot Study Mapping WCTOH Attendees

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We conducted a pilot project survey among 2015 WCTOH attendees to document the communication and collaboration networks of global tobacco experts who attend the WCTOH, and to analyze the dynamics of these networks. METHODS: An online survey link was featured on the WCTOH website prior to and during conference registration. Additional dissemination of the survey link also occurred through various international tobacco control organization listservs. The link remained open during and immediately after the WCTOH conference in March 2015. The survey was conducted in English and asked about barriers to tobacco control activities, which information sources they use for tobacco control information, and with whom they interact regarding tobacco control. RESULTS: A total of 169 respondents completed the survey, with responses from all six WHO regions. Respondents worked in all areas of tobacco control, but the most common were research (29.2%) and patient care/treatment (23.3%). The top barriers faced regarding tobacco control activities were: Funding is weak (56.8%), government commitment (45.0%), tobacco industry interference (43.8%), and lack of coordination (34.3%). The network analysis identified FCA and SRNT as the two most prominent groups that people belonged to and where they went to exchange information and best practices. Important regional and country specific groups also appear to be growing, such as the African Tobacco Control Alliance (ATCA) and the Argentinian Association of Tabacology (ASAT).

24. Due to tobacco smuggling, during the fist decade of 21st Century, cardiovascular mortality is a better predictor of smoking prevalence than legal tobacco sales.

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Objective: In Spain, legal tobacco sales doesn´t represent smoking prevalence due to smuggling. Decrease of smoking prevalence reduces the incidence of cardiovascular (CV) events. Our goal is to determine whether incidence of fatal CV events is a better predictor of smoking prevalence than legal tobacco sales. Methods: Prevalence of smoking, Legal tobacco sales, and fatal CV events (acute myocardial infarction (MI) and stroke) were assessed yearly during the first decade of 21st Century. Data was obtained from the National Institute of Statistics, Commission for the Tobacco Market and National Drug Institute of the Ministery of Health. Results: In 2001, smoking prevalence was 46%; legal tobacco sales 5 millions of packages, fatal MI 22.830 and fatal stroke 35.390. In 2002: 46,9; 45,3; 23,06; 34,82 respectively. In 2003: 47,8; 46,1; 23,59; 35,1. In 2004: 45,10; 44,40;

22,09; 33,18. In 2005: 42,40;46,30;22,15;33,72. In 2006: 42,05; 45,00; 20,72; 31,91. In 2007: 41,70; 44,60; 20,30; 32,10. In 2008: 42,25; 45,10; 19,16; 30,91. In 2009: 42,80; 40,70; 18,41; 30,22 and in 2010: 41,50; 36,20; 17,60; 29,32.

Paradoxicaly, there wasn´t a significant correlation between legal tobacco sales and prevalence of smoking (correlation coefficient (CC): 0,39; p=0,29). There was a strong correlation between smoking prevalence and fatal MI (0,79; p=0,011) and stroke (CC: 0,84; p=0,005). Curves for MI and stroke were virtually paralel (CC:0,97; p<0,001). Conclusions: Most probably due to smuggling, real tobacco sales in Spain are difficult to assess. Fatal MI and fatal stroke are better predictors of smoking prevalence than legal tobacco sales. Cardiovascular death decreased in parallel with smoking prevalence in the first decade of 21 st Century.

September 9

Poster Session 6:
Predicting and changing tobacco use in youths

25. Body weight-related predictors of cigarette smoking stages among adolescents

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Background: The relationship between body weight-related factors and adolescent smoking is controversial and researches in this topic are scarce especially in the Central Eastern European region.

Main objective: We explore the association between body mass index (BMI), weight concerns, weight control beliefs, and smoking trajectories in a longitudinal research among Hungarian adolescents.

Methods: We initiated a three-year longitudinal survey in 2009 in two age cohorts (6th and 9th school grades) of metropolitan adolescents (N=1,092) with yearly data collection by self-administered questionnaires. Using self-reported ever and current cigarette use, we empirically defined five smoking trajectories (never smokers, experimenters, initiators, regular smokers, quitters). Baseline covariates included BMI calculated by self-reported anthropometric data, perceived weight, weight loss goal and appetite-weight control expectancies of smoking.

Results: Regarding smoking trajectories, 67.5% of the sample remained nonsmoker, 3.7% were experimenter, 14.3% initiated and 3.3% quitted smoking while 11.3% were regular smoker. Significantly greater mean BMI values were detected among regular smokers ($p<0.001$), experimenters ($p=0.008$) and quitters ($p=0.038$) compared to nonsmokers. Perceived overweight was not associated with smoking trajectories (?2(4)=3,30; p=0,509), while students who desired to lose weight were significantly less likely to remain nonsmokers (?2(4)=11,66; p=0.020). Appetite-weight control expectancies of smoking were significantly higher among regular smokers compared to nonsmokers ($p<0.001$) and initiators ($p=0.003$).

Conclusions: Weight-related factors are not negligible among Hungarian adolescents and moderated by smoking stages.

Recommendations for practice: Smoking prevention programs should consider including weight-related messages and differentiating them according to stages of adolescent smoking.

26. Adolescents' Smoking and the Social Capital of Local Communities in Transylvania, Romania

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Background: Social capital is defined as the resources that individuals access through their social networks, which may influence tobacco smoking in adolescents.

Main objective: The aim of the study was to identify the effect of social capital on adolescent smoking.

Methods: A cross-sectional study based on a self-administered questionnaire was performed among 7th and 8th grade students from three counties from Transylvania, Romania. The random stratified sample involved 1,313 students. The respondents' smoking status was classified as

current smokers, triers and never smokers. The impact of social capital as personal and community activities, school achievements and smoking related knowledge were measured. Multivariate logistic regression models were used to measure the association between social participation and smoking.

Results: 51.9% of the respondents did not smoke, 31% tried at least once, 17.1% smoked on current basis (past 30 days). Going to church (OR: 0.45; 95% CI: 0.22–0.91) and the negative attitude towards smoking of the nearest neighbours (OR: 0.48; 95% CI: 0.27–0.85), were protective factors, while intensive community activities increased the risk of adolescent smoking (OR: 2.52; 95% CI: 1.59–3.99). The odds of smoking was higher among those who had less information about the dangers of smoking (not dangerous vs. dangerous, OR: 4.31, 95% CI: 2.07–8.99).

Conclusion: A high degree of attachment to a community and knowledge about the negative effects of smoking reduces the risk of smoking experimentation and regular use.

Recommendations: Stronger anti-smoking communication communities, the more effective the reduction of adolescents' smoking behaviour.

27. Differences of Tobacco Smoking Habits and Attitudes of Students in Medical and Non-medical Higher Education

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Background:
The scope of our study was to compare tobacco smoking habits and attitudes of students among medical and non-medical higher education students attending universities in Tirgu Mures Romania.

Methods:
We used the Global Health Professions Student Survey as a model for the questionnaire, as it is not currently applied in Romania. Respondents include: 512 third year health professional students from the University of Medicine & Pharmacy Tirgu Mures (UMPh); 250 non-health professional students from Petru Maior University (PMU); and 185 non-health professional students from Sapientia University (SU). IBM-SPSS Statistics v22 software was used for data analysis using Chi square test ($p<0.05$).

Results:
There was no significant difference in smoking prevalence (UMPh=33.7%, PMU=33.3%, SU=36.7%). Female smoking rate was significantly higher at SU (44.6%) than at UMPh (30.6%). Perceptions of respect for smoking regulations was significantly different across universities, with 29.0% at PMU, 69.6% at SU and 11.2% at UMPh ($p<0.01$) indicating favourable responses. 91.9% of SU students report that health care professionals should be role models for the society, while only PMU=62.4% and 75.1% at UMPh, respectively, share this opinion($p<0.01$).

Conclusions:
Students of higher medical education smoke as much as non-health professional peers. As future health professionals, they have an obligation to support cessation and serve as non-smoking role models for their future patients. Training is needed for medical students to increase their social responsibilities.

28. Attitudes, Self-Efficacy, and Intention Related to Smoking After a Cessation Intervention In Spanish College Students. A Pragmatic Randomized Trial

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Background: Smoking cessation depends on several elements that have been identified through behavioural sciences as pathways of behavioural change (self-efficacy, etc).

Aim: To evaluate the changes in attitudes, self-efficacy and intention related to smoking after a nurse smoking cessation intervention aimed to college student smokers.

Design: Single-blind, pragmatic randomized controlled trial which compares a multi-component intervention, tailored specifically to college students, with a brief advice session with a 6-month follow-up.

Setting: This study was conducted at the University of Navarra, Spain.

Participants: 255 college student smokers (age range=18-24 years) were randomized to an intervention group (n=133) or to control group (n=122).

Intervention: A multi-component intervention based on the Theory at Triadic Influence of Flay was developed. The intervention consisted of a 50-minute motivational interview conducted by a nurse and online self-help material. The follow-up included a reinforcing e-mail and group therapy.

Measurements: The scales to measuring attitudes, self-efficacy, and intention related to smoking of Texas Young Tobacco Survey was used, at beginning and at 6-moth follow-up.

Finding: At the 6-month follow-up, the comparison of the change in the mean scores of self-efficacy between both groups showed significant differences, benefiting the intervention group (11.0 versus 9,8;p=0.0169). The intention related to no smoking was significantly higher in the intervention group than control ones (7.8 versus 6.5;p<0.001).

Conclusions: A multi-component intervention tailored to college students, and managed by a nurse, changes the self-efficacies perceptions and intentions related to smoking among college students.

Recommendations: A multi-component intervention could modify the pathways of behavioural change.

Sources of funding: The Chair of María Egea, University of Navarra (Spain), funded this project.

Conflicts of interest: None declared.

Poster Session 7:
Secondhand Smoke and the protection of children

29. Monitoring of tobacco smoke generated air pollution in facilities of the University of Medicine and Pharmacy in Tîrgu Mureş, Romania 2015-2016, during implementation of smoke free policy

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Background:
The aim of this study was to assess PM2.5 concentrations of the central educational building and the students' dormitories in 2015 – 2016 at the University of Medicine and Pharmacy in Tirgu Mures, Romania.

Methods:
An AM510 monitor was used to measure PM 2.5 concentrations. Measurements were taken on the same weekdays 12.00-14.00 hours in three common staircases of the central building and 20.00-21.00 hours in four students' dormitories. Measurements were also taken during different times of the year to assess seasonal differences. Data were analysed using Microsoft Excel and IBM-SPSS v22.

Results:
Average pollution in the central building was moderate (25-30 µg/m?). Peak PM2.5 values during the exam periods (29-36 µg/m?) were almost twice as high as measurements taken during summer vacation (16.2 µg/m?) ($p<0.01$). In the students' dormitories, the highest air pollution was generated among the male residence halls (mean>150 µg/m?) contrasted to the lowest in married couples' lodgings (mean = 40-50 µg/m?, $p <0.001$).

Conclusions:
Despite a ban on indoor smoking, exposure to second-hand smoke is a serious problem on the UMPh campus. Concentrations of PM2.5 are especially high during exam period. In order to achieve the full impact of the ban, there needs to be a more robust strategy for enforcement, in compliance with recent national clean air law implemented in 2016. In this context monitoring of PM2.5 plays a major role.

30. Reducing tobacco use among children in public care in England: policy and pitfalls

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Despite the implementation of smokefree policies and the statutory requirement to promote the health and well-being of children looked after by the state, rates of smoking among children in care are substantial. This study aimed to identify the barriers to implementing and enforcing comprehensive smokefree policy and practice to address tobacco use within a residential care setting. Our mixed methods study comprised an evaluation of the annual statutory health assessment for children in care, a survey of residential carers in 15 local authority children's homes in four local authorities, and semi-structured interviews with residential carers. Analysis of evaluation data utilised descriptive statistics and qualitative content analysis; survey data were descriptively analysed; and narrative data were analysed using thematic framework approach. Barriers to the implementing and enforcing smokefree policies in residential setting included concerns regarding safeguarding children in care, low prioritisation of smoking in the context of

wider health and substance misuse risks, and the role of parents. Barriers to practice were identified as low levels of training in relation to smoking, a reliance on tacit knowledge, and pessimistic attitudes towards LAC quitting smoking. The study indicates the need the development of comprehensive strategies to promote adherence to and enforcement of local smokefree policy, and to ensure appropriate support pathways for addressing tobacco use among children in public care are in place.

31. Smoking Habits among Foster Care Employees in Five Romanian Counties

I.L. Ferencz, M. Ferencz, P. Balazs, Z. Abram, K. Foley, L. Schmidt

Background: Parents and educators influence children's smoking habits through role modeling and rule setting.

Objective: This study evaluated smoking attitudes, behaviors, and access to treatment services among employees in Romania's foster care system.

Methods: Questionnaires were self-administered between 2014-2015 among 685 adults who are employed in 153 residential care homes in central Romania. Anonymous questionnaire included knowledge, attitudes, and behaviours about smoking, as well access to resources to promote cessation.

Results: Respondents were predominately women (72%) and aged 30-49 years (54%). About 1 in 3 (30%) reported daily or occasional smoking. Commonly reported primary reasons for smoking were pleasure (28%), stress (18%) and addiction (18%). Among smokers, 76% want to quit. Strategies to reduce tobacco dependence among employees is limited: 8% have a staff person to provide tobacco dependence treatment for employees, 47% of the foster homes have pamphlets or posters about prevention and cessation; and 18% have information about the national quit line Stop Fumat!. 38% of employees report prior training in tobacco prevention and treatment, while 69% report that foster care employees need training to reduce tobacco use among youth.

Conclusion: There is a higher prevalence of smoking among foster care employees compared to the national average, the majority of who want to quit, but have limited resources available to support quitting.

Recommendation for Policy or Practice: Improving access to smoking cessation services for employees in Romanian foster care will benefit them, as well as children.

Poster Session 8:
Novel approaches and insights: from epidemiology to research practice

32. Psychosocial and health factors associated to attempt to quit among Brazilian smokers ? results from a nationwide representative survey

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Quit smoking is associated to benefits like reduction on risks for several cancers and chronic diseases. Although well known limitations of surveys, explore associations from a representative sample is important to highlight sub-populations that might be important in policies development. We aimed to explore the association of psychosocial and self-reported health factors of smokers to attempts to quit in the preceding twelve months.We analyzed data from the Brazilian National Health Research of 2013 (n = 60.202 individuals), a recent cross-sectional study representative of the Brazilian adult population. All statistical methods included the sample design in the model, using the R library survey. We found that 12.4% of the population is a current smoker of manufactured cigarettes. From those, 47.5% tried to quit. Light smokers (<10 daily cigarettes) presented an increased 10% prevalence of attempts compared to heavy smokers.Binge drinking and being exposed to other smokers on daily basis presented prevalence ratios around 0.94, whereas for practice of physical activity it is 1.09. Self-reported respiratory problems and hypertension prevalence ratios are 1.32 and 1.07 respectively and 1.06 for depression. Model was also adjusted for attempts in the preceding 30 days motivated by health warnings in cigarette packages: 2.20. We concluded that all self-reported chronic conditions were positively associated to attempts to quit, bringing an important message that, at least in population level, they try to quit and form an important group to be sensitized, deserving more attention on public health policies and clinical interventions at any health care levels.

33. Combined use of varenicline and telephone-based cognitive-behavioral counselling for smoking cessation

O. Sukhovskaya, M. Smirnova

Most smokers would like to quit smoking but they are needed in nicotine dependence therapy and cognitive-behavioral counselling.

Objective of the research – study the effectiveness of varenicline and cognitive-behavioral therapy conducted by telephone.

Methods. The research included 300 regular smokers (22-66 age) who applied to Russian Quitline. Behavioral telephone support included initial consultation (preparing to quit smoking), calls on 1, 3, 7, 14, 30 days quit. Respondents were interviewed about smoking, Fagerstrom's nicotine dependence test (ND), motivation to quit smoking (QS) and diseases. The primary outcome variable was 30-day and 6-month point prevalence abstinence.

Results. There are 54 male and 46 female in 1 group (combined use of varenicline and telephone-based cognitive-behavioral counselling) and 140 male and 60 female in 2 group (only cognitive-behavioral counseling by telephone). Administration of varenicline in combination with cognitive-behavioral therapy in the first month of smoking cessation resulted in successful quitting without marked withdrawal symptoms in 82% of cases (quitting smoking at 8- 12 days in 63% , on the 13-20 days - in 14%, on 20-30 days – in 5% of cases). The complete course of treatment received 76 people from 100. The reasons for discontinuation of treatment were: successful smoking cessation (13%) and stress (11%). 30 days abstinent period noted in 76% (1 group) and 37% (2 group) of cases, 6-month abstinent period - in 57% (1 group) and 24% (2 group) of cases.

Conclusion. Discontinuation of treatment negatively impact on treatment outcome nicotine dependence. Factors likely treatment effectiveness were availability of support for smoking

cessation and non-smoking family. Telephone counseling and treatment of nicotine dependence increases the number of successful smoking cessation.

34. Effects of varenicline on self-reported consumption and enjoyment of alcohol during a stop-smoking attempt

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Varenicline reduces enjoyment of smoking and ad-lib cigarette consumption. Several preclinical and clinical studies have suggested that the drug may have similar effects on enjoyment and consumption of alcohol. The objective of this report was to compare alcohol enjoyment and consumption in smokers using varenicline and smokers using nicotine replacement treatment (NRT).

Smokers who reported drinking alcohol and who were undergoing smoking cessation treatment with either varenicline (n=230) or NRT (n=62), provided data on their alcohol enjoyment and consumption two weeks prior to their target quit day (TQD), on the TQD, and at one and four weeks post-TQD.

Clients treated with varenicline were more likely to report reduced enjoyment of alcohol compared to smokers treated with NRT on TQD (20% vs 10%, respectively, p<0.001) and at four weeks post-TQD (20% vs 6%, respectively, p=0.014). Clients significantly reduced their alcohol consumption after TQD, independently of the type of medication used. There were no differences in alcohol enjoyment or consumption between clients who did and those who did not react to varenicline during the pre-quit period by reducing their cigarette consumption by ? 50%. No effects of medication on alcohol consumption or enjoyment were recorded in heavy drinkers (consuming >14 units of alcohol per week in women and >21 units in men).

Stopping smoking is accompanied by a reduction in drinking. Varenicline may affect enjoyment of drinking, but its potential to alter drinking behaviour is likely to be small.

35. Drop-out rates following allocation to control vs intervention groups in a smoking cessation trial

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Attrition bias can be detrimental to the internal validity of studies. In unblinded trials, patients are often disappointed if allocated to the control arm and may be less likely to comply. We investigated whether there was differential attrition between control and intervention groups in a nicotine preloading study.

Data from 359 participants at the London site was analysed for drop-out differences. The primary outcome was loss to follow-up at the first appointment post randomisation (visit 2), 3 weeks prior to target quit date (TQD). Follow-up rates at 1 and 4 weeks post-TQD were also analysed for differences between groups.

In total, 91.9% of participants attended visit 2. There were no significant differences in loss to follow-up rates at any time point (visit 2: 6.8% in intervention versus 9.6% in control; Q+1: 15.6% versus 15.0%; Q+4: 17.2% versus 19.2%). There were no significant differences in gender or eligibility for free prescriptions of attenders and non-attenders at visit 2. Attenders were significantly older than non-attenders (47.4 versus 42.5, p<.05).

Despite potential for disappointment when allocated to the control condition, there were no significant differences in drop-out rates between arms. This may be because steps were taken to ensure control participants felt engaged. All participants had regular face-to-face contact with researchers and received stop smoking treatment. Participants who did not attend visit 2 were significantly younger than those who did, suggesting a need to find ways of keeping younger participants engaged. Collecting participant feedback could provide insight into participants? reasons for dropping out.

36. Feseability of a web platform for decision aid in smoking treatment in Brazil ? ?Pare de fumar conosco?

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There is strong evidence supporting the efficacy of decision aids in improving patients? knowledge regarding treatment options and its choice. We aimed to assess the feasibility of a decision web platform called ?Pare de fumar conosco? (PFC), adapted for Brazilian scenario from an already existing platform developed in USA. The components of the decision aid were developed to help participants tailor their quit-plan. This was a pre-post assessment of utilization of smoking cessation resources (pharmacotherapy and group counseling) among participants completing the PFC informed decision making web-base tool. Study happened in two secondary health care centers in Juiza de Fora, Brazil. Data included sociodemographic variables, motivation to stop smoking, dependence, number of previous quit attempts, previous use of smoking cessation medication or counseling, and previous receipt of advice to quit smoking from a health care provider and treatment preferences. These variables were collected in prior the intervention and immediately after intervention and a follow-up by telephone, after three months, were made to assess cessation. 85 participants were included. All pre-post variables presented an expressive increase in positive decisions for treatment. 57.6% have already tried to quit in the previous 12 months and 95.3% set a quit-date within next three months, but just 16.3% had quit in the follow-up. Pharmacotherapy choice raised from 22.4% to 82.4%, look for counseling from 21.2% to 85.9% . The PFC in secondary care shows both feasibility and and acceptability and indicates a potential decision aid to change smoking beliefs in high risk patients, driven them to a change in motivation to treat, look for counseling and pharmacoterapy.

Poster Session 9:
Smoking, family and pregnancy

37. Supporting Cessation for Pregnant Smoking Women by Improving the Quality of Online Discussions

P. Fikar, R. Ganhör, M. Habiger, H. Tellioglu, M.Urbanek

Smoking during pregnancy not only affects infant and maternal health, it also can cause highly emotional and sometimes aggressive debates. As smoking pregnant women are aware of the outrage their habit can initiate, we assume that many of them prefer the anonymity of online media to discus their addiction, to find information about cessation or just to talk with like-minded.

In this presentation, we address the issues of online media as a go-to place for smoking pregnant women. We are especially interested in the culture of discussion, and how the women are treated in such online discussion groups. Furthermore, we look into the differences among various online discussion platforms, work out differences and elaborate on such differences.

To get a sufficient data base to answer our questions we implement a mixed qualitative and quantitative research approach. In a first step, to better understand media usage and expectations of smoking pregnant women we set up an online survey and, in a second step, we analyze various online discussion boards for their content, thread length, and accuracy.

As a result we can conclude that the culture of online discussion can vary heavily, and as a main reason we suppose the existence of a professional moderator who monitors an online discussion. However, we found that smoking pregnant women use online discussions for information gathering, exchange of thoughts and medical advice. To support smoke cessation in this highly stigmatized segment we propose the professional, unbiased, unprejudiced support of online discussion boards.

38. Postpartum smoking abstinence self-efficacy and partner supportive behaviors

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A limited number of couple-based smoking cessation programs focusing on pregnant or postpartum women have been found effective. This study aims to explore the association between women's smoking abstinence self-efficacy and their partners' supportive behaviors.

Preliminary data was collected between November 2013 and December 2015 from 133 couples in the first week following delivery as a part of a Romanian, postpartum, couple-based randomized controlled trial on preventing smoking relapse. Variables of interest include women's smoking abstinence self-efficacy, partner interaction, importance of staying quit, and teamwork standards. We used descriptive statistics and correlations to address the study's aim.

Relationship length for the 133 couples ranged between 1 and 20 years (mean=7.98, SD=4.48). There was no correlations between the importance women assigned to staying quit or working together as a team to resolve issues related to smoking cessation and the importance their partners ascribed to the same behaviors (r=.15,p=.10; r=0.84,p=.37). When the life partners were daily smokers, there were positive, significant correlations between women's and partners' responses in terms of importance of staying quit (r=.51,p=.01) and working together as a team for women's smoking cessation (r=.29,p=.06). When the life partners were daily smokers, there was a significant correlation between women's smoking abstinence self-efficacy and partners' positive supporting behaviors (r=.31, p<.01).

Our findings suggest that daily smoking partners may offer superior positive smoking abstinence support for their spouses than non-smoking or occasional smoking partners. This information may be useful to health practitioners and policy makers to improve the effectiveness of smoking cessation programs.

39. Family Smoking Cessation in Romania Using Pregnancy as a Window of Opportunity

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BACKGROUND:
Maternal smoking is one of the most modifiable factors with clear adverse effects for the fetus and the entire family. This study will culturally adapt, enhance, and test the efficacy of an evidence-based pregnancy and postnatal couple intervention for smoking cessation

METHODS/DESIGN:
PERSIST is an ongoing partnership between a research institution and the two largest state-owned obstetrics and gynecology clinics in Cluj-Napoca, Romania. The study will build on the Motivation and Problem Solving (MAPS) approach, a novel strategy successful in preventing smoking relapse postpartum in the US, enhanced by targeting the couples' smoking behavior and focusing on dyadic efficacy for smoking cessation. The smoking prevention randomized controlled trial intervention will begin at the first prenatal visit, will include a postpartum component, and will target primigravid smokers and their partners. The primary outcome is maternal smoking cessation.

RESULTS:
Currently, the intervention is its formative phase (adapt/enhance), which includes qualitative and quantitative data collection to inform the trial scheduled to begin in 2017. Fifteen interviews conducted so far with pregnant smokers and ex-smokers revealed a wide range of partner involvement and support with quitting, ranging from not at all involved to extremely supporting partner.

DISCUSSION:
PERSIST has a large potential for dissemination and adoption into the Romanian national STOP SMOKING program that includes a quitline. We anticipate strong potential for the future adoption of proactive counseling for couples referred by prenatal health providers, as an extension of the existing quitline in the Romanian universal public health system.

40. Health behaviors among dual-smoker couples

S.H. Choi, G. Oehring, I. Lipkus

Background: Dual-smoker couples where both partners smoke are at higher risk for smoking-related morbidity and mortality due to exposures related to their own and their partner's smoking; yet their smoking behavior is poorly understood in the literature. This study aimed to explore in-depth smoking behavior and other risky health behaviors among dual-smoker couples.

Method: This was a cross-sectional online survey study with a convenience sample of 183 smokers in a dual-smoker partnership in USA. Survey items collected data on participants' and their partner's smoking habits, alcohol consumption, physical activity, diet, comorbidities, and demographics.

Results: Mean age was 34.1 years old. Over half were females (56.9%) and 79.0% were White followed by Black/African American (13.5%). On average, participants smoked 16.0 cigarettes per day for 14.2 years and 63.6% were interested in smoking cessation services. Among those who reported quit attempts, 41.0% quit on own and only 15.3% sought for professional help. Ninety-three percent allowed smoking at home and almost half shared more than half of their smoking time with their partner. Participants scored 40.6 on the Physical Activity Questionnaire and 27.1% showed problem drinking behaviors. One fifth reported lung diseases such as chronic bronchitis, emphysema, chronic asthma, or chronic wheezing.

Conclusion: Our findings indicate high levels of motivation among dual-smoker couples; however, most did not utilize professional help, leading to low success of quit attempts. This evidence shows the need for smoking cessation interventions for dual-smoker couples.

41. Dyadic efficacy for smoking cessation in a sample of Romanian couples

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Background: Maternal smoking is one of the most modifiable factors with clear adverse effects for the fetus and the entire family. The objective was to explore the promise of dyadic efficacy as an emphasis for couple-focused postnatal relapse prevention interventions.
Methods: 228 women who quit smoking during or before pregnancy were recruited after giving

birth in two large maternity clinics in Romania. Dyadic efficacy for smoking cessation, intention to relapse, smoking abstinence self-efficacy, partner's smoking status, partner interactions, teamwork standards, heaviness of smoking and other characteristics were assessed. We describe dyadic efficacy and its components in this sample of Romanian recent mothers and partners and explore relapse-relevant correlates of dyadic efficacy.

Results: The average score on the 0-100 dyadic efficacy scale was 69.78 (SD = 26.54), with significantly lower mean scores among women living with a smoker partner ($p<.01$) and women with a lower education ($p=.04$). The strongest predictors of dyadic efficacy were partner's smoking ($?=-.30$, $p<.01$), teamwork standards ($?=.20$, $p<.01$), smoking abstinence self-efficacy ($? =.152$, $p=.046$) and agreement with the statement that light cigarettes are less harmful ($?=-.23$, $p<.01$). Intention to relapse in the next 6 months was negatively associated with dyadic efficacy for smoking cessation ($?=-.17$, $p=.02$).

Conclusions: The results of this study lend support to couple-focused smoking relapse prevention interventions that specifically target the enhancement of the dyadic efficacy for smoking cessation. Proactive counseling for couples referred by prenatal health providers has great potential as an addition to existing quitlines.

41a. Impact of maternal tobacco smoking during pregnancy on the breastfeeding

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Background:
Breastmilk is the best nutrient for infants with its numerous positive effects. However, heavy smoking of mothers shortens the period of breastfeeding, thus beneficial effects of breastmilk cannot prevail.

Objective:
This study explores the association of different nicotine dependence levels among mothers who smoked during pregnancy and their subsequent breastfeeding behavior.

Methods:
We conducted a retrospective cohort study among mothers delivered with live born babies 2009-2013 (N=15,057) in Hungary's 4 underdeveloped counties. We explored prevalence of breastfeeding, cigarette smoking patterns of nicotine dependence levels (Fagerström Test for Nicotine Dependence) during pregnancy.

Results:
Only 3.9% of the whole sample did not breastfeed. Prevalence of no-breastfeeding increased by levels of nicotine dependence: nonsmokers (2.8%), very low dependence (3.0%), low dependence (4.5%), moderate dependence (6.2%), and high dependence (9.3%) never breastfed their infant.

Initiation of breastfeeding after delivery showed the shortest mean duration among nonsmokers (1.6 days) while it was the longest among moderately dependent mothers (4.2 days). No-breastfeeding was two times higher among smokers versus nonsmokers in case of premature babies (N=1,208; 21.2% vs. 10.4% respectively). If mothers quit smoking before conception or during pregnancy, but relapsed after childbirth, the odds of not-breastfeeding almost doubled (OR 1.84, 95%CI: 1.11–3.06; p<0.001).

Conclusion:
Smoking during pregnancy and smoking relapse negatively affect the likelihood of breastfeeding.

Recommendation for Policy or Practice:
Supporting cessation of smoking pregnant women and preventing smoking relapse should be coupled with breastfeeding support by specially trained health professionals.

Poster Session 10:
Exploring nicotine dependence and the impact of tobacco use

42. External locus of control is associated with smoking status and nicotine dependence

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Individuals differ in the degree to which they appraise events as a consequence of their own actions (internal control) or as the outcome of chance or others' will (external control). Our hypothesis is that dependency on addictive substances such as nicotine is more likely in individuals with an external locus of control (LoC).

We tested if LoC was associated with: 1) being a continuing smoker rather than a desisting smoker, 2) being more dependent on nicotine and 3) age of first cigarette, in young people (N=691) from the Avon Longitudinal Study of Parents and Children. They completed an Internal-External LoC scale at 16 years and their smoking behaviour was assessed at 21 years with the FTND.

We ran logistic regressions with smoking status as the outcome and linear regressions with FTND score and the age at first cigarette as outcomes. All analyses were adjusted for the potential confounders: age, sex and socioeconomic position. There was weak evidence that having a more external LoC was associated with continuing to smoke (OR=1.09, 95% CI: 0.99 to 1.20, p-value=0.07), stronger evidence that it was associated with a higher FTND score (Beta = 0.18, 95% CI: 0.10 to 0.27, p-value < 0.001), and little evidence that it was associated with age at first cigarette (Beta = -0.045, 95% CI: -0.10 to 0.01, p-value = 0.11).

We found evidence for an association of the external LoC with continuing to smoke and being nicotine dependent. Since LoC is a modifiable, socially learnt behaviour, it represents a potential target for smoking prevention interventions.

43. Judgments of facial attractiveness in identical twins discordant for smoking

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Background:
Smoking can accelerate the appearance of facial aging, and young people are sensitive to the potential negative effects of this on their attractiveness. Given this, one possibility for a smoking intervention targeting young people is an application illustrating changes in facial appearance likely if they age as a smoker rather than a non-smoker. A well-principled approach to this would be to develop facial ageing transformations using the faces of ageing identical twins discordant for smoking. The 'smoker' transform would be based on an average of faces of twins that smoke; the 'nonsmoker' transform on an average of faces of twins that do not. A key assumption with this approach is that 'smoker' transformations will be judged more attractive than non-smoking transformations.

Methods:
To test the likelihood of this before developing full transformations, we asked participants (n=630) to make attractiveness judgments of faces of 23 sets of identical twins discordant for smoking, and smoking and non-smoking average faces made from these. Participants were shown two faces side by side, and asked which face they thought most attractive. In some trials the two faces were a set of smoking discordant twins, in others they were the smoking and non-smoking averages.

Results:
There was no clear pattern of preference for smoking or non-smoking twin across the twin sets. Crucially, however, there was a clear preference for the male and female non-smoking averages by both male and female participants (all $p < 0.001$).

Conclusion:
These results suggest it is possible to use identical twins in a well-principled approach to develop transformations illustrating the potential impact of smoking on facial attractiveness.

44. Sex, smoking and risk of subarachnoid hemorrhage

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For unknown reasons, women are reported to have a higher risk for subarachnoid hemorrhage (SAH) than men. Since dose-dependent effects of smoking on the risk of SAH have not been addressed in prospective studies, we studied cumulative associations between smoking habits and SAH and also focused on interactions between known SAH risk factors. The population-based FINRISK study cohort of 65 521 individuals was followed up for 1.38 million person-years. We used the Cox proportional hazards model to calculate hazard ratios (HRs) and evaluated additive and multiplicative interactions between study variables, with all analyses adjusted for known SAH risk factors. During follow-up, we identified 492 SAHs. Smoking had a linear dose-dependent and cumulative association with risk for SAH in both sexes. Women smoking over 20 cigarettes per day (CPD) had an HR of 8.35 (95% CI 3.86-18.06) compared to an HR of 2.76 (95% CI 1.68-4.52) in men in the same CPD group. HRs differed by sex in all CPD and pack-year (PY) categories; this association was stronger in women in all categories (p=0.01). When an adjusted model included interaction terms between sex and CPD or PYs, female sex was no longer an independent SAH risk factor. In addition, former smokers had a markedly decreased risk for SAH in both sexes when compared to that of current smokers. Smoking has a dose-dependent and cumulative association with SAH risk, and this risk is highest in female heavy smokers. Vulnerability to smoking seems to explain in part the increased SAH risk in women.

45. Assessment of nicotine and tobacco dependence: Analysis of two measurement tools among Finnish ever smokers

V. Eskola, T. Korhonen, M. E. Piper, J. Kaprio

The Fagerström Test for Nicotine Dependence (FTND) and the multi-dimensional Wisconsin Inventory of Smoking Dependence Motives (WISDM) are well-known measures of nicotine and tobacco dependence. The FTND is used in Finland for both research and clinical work. For instance, the Heaviness of Smoking Index (2 FTND items) is used for smoking cessation medication reimbursement in Finland. The WISDM questionnaire was recently translated to Finnish and Swedish, and used for the first time in Finland. Our aim was to examine the associations of the WISDM with the FTND scale.

The FTND and a modified version of the Brief-WISDM were completed as part of the Older Finnish Twin Cohort, a comprehensive health questionnaire administered in 2011 to twins born 1945-1957. Twins were analyzed as individuals and their mutual dependency was corrected statistically. Our sample consisted of 3858 ever smokers (mean age 60.1, 52% men). They included 1498 current and 2360 former smokers. The former smokers reported on their dependence according to the time when they were smoking the most. The modified version of the Brief-WISDM questionnaire included 22 items, which formed 3 dimensions: Primary Dependence Motives (PDM; 16 items), Affective Enhancement (AE; 3 items), and Taste (T; 3 items). The association of each dimension with the FTND was assessed in correlation and regression analyses. Former and current smokers were analyzed separately.

The PDM dimension was most strongly correlated with the FTND scale (r=0.70 current, r=0.72 former smokers), while the correlations of AE (r=0.53 current, r=0.58 former smokers) and of T(r=0.38 current, r=0.45 former smokers) were lower. PDM alone explained 49% of the FTND variation in current and 52% in former smokers. The PDM dimension of the WISDM measure seems to be strongly associated with the FTND scale in Finnish smokers (ROC = 0.85). This study demonstrates the concurrent validity of the Brief WISDM questionnaire among Finnish smokers.

46. The beneficial effect of vitamin E in memory impairment induced by waterpipe smoke exposure

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Waterpipe Tobacco Smoking is a public health problem that is spreading worldwide. In this study, we investigated the interactive of waterpipe smoking and/or forced swimming exercise on spatial learning and memory. Wistar male rats were divided into four groups: control group, waterpipe smoking, vitamin E (VitE) and combinations of the above. Rats were exposed to waterpipe smoking by whole body exposure (WBE) for one hour 5 days/week for one month. Concurrently, rats were administered vitamin E 100mg/kg for 5 days/week for one month. Behavioral study was conducted after one month treatment period to test memory performance and spatial learning using Radial Arms Water Maze (RAWM). Additionally, the hippocampus was dissected; and oxidative stress biomarkers (Catalase, GPx, SOD, TBARS, GSH, GSSG, and GSH/GSSG ratio) were assessed. The results of this study revealed that waterpipe smoking impaired short-term and long-term memory ($P < 0.05$). Administration of vitamin E prevented memory impairment induced by waterpipe smoking. Waterpipe smoking reduced activity of catalase ($P < 0.05$), GPx ($P < 0.05$) and GSH/GSSG ratio ($P < 0.05$) in the hippocampus. Vitamin E normalized oxidative stress biomarkers. In conclusion, waterpipe smoking induces short-term and long-term memory impairment whereas vitamin E prevents memory impairment possibly via oxidative stress biomarkers normalization in the hippocampus.

47. Non-genetic factors associated with cotinine levels among Finnish adult smokers

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Background: Genetic factors affecting nicotine metabolism and nicotine levels are increasingly discovered. However, non-genetic factors affecting cotinine levels are less studied.

Aims: Determine non-genetic factors predicting cotinine levels in Finnish adult smokers.

Methods: As part of the National FINRISK 2012 Study, we identified non-pregnant current cigarette smokers who had blood cotinine level >= 10 µg/l (N=886). Potential explanatory variables from the literature were selected. We ran linear age-adjusted multiple regression models in men and women. We used stepwise exclusion to drop the least significant variables from the model.

Results: Weight, the number of cigarettes smoked per day (CPD) and time to first cigarette (TTFC) after waking up remained statistically significant variables in the regression models for cotinine levels. In men (N=478) the adjusted model had R?=28%, with statistically significant ($p<0.05$) regression coefficients for weight ?=-1.73 per kg, for CPD ?=2.40 per cigarette and for TTFC ?=-1.59 per minute. Among women (N=408) the model R? was 27%, with coefficients for weight ?=-0.81 per kg, for CPD ?=5.27 per cigarette and for TTFC ?=-1.18 per minute, respectively. Age alone accounted for 2.7% of the variance and had positive coefficients ?=1.61 per year in men, while 4.8% and ?=2.02 per year in women. The use of hormonal contraceptives and/or hormone replacement therapy in women and alcohol use in both genders did not remain statistically significant variables in the models.

Conclusions: Weight, CPD and TTFC have a significant association on cotinine levels and they account for 27% to 28% of the variation in cotinine levels. Furthermore, age explains additional 3% to 5% of the variance.

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