- life-course approach; and
- whole of society approach.

Four Health Evidence Network (HEN) synthesis reports were commissioned from leading experts and have now been published, synthesizing the best available evidence and grey literature on these concepts, and proposing a variety of quantitative and qualitative approaches to measuring them.

The workshop will be organized as round table workshop. It will bring together the authors of all four reports to provide an overarching thematic discussion on how to enhance the monitoring and reporting of values-based public health concepts. In addition, it will also present an opportunity to discuss the findings of the reports, in particular how qualitative evidence can be deployed to make up for the shortcomings of quantitative indicators. The role of culture in informing these values-based concepts will also be discussed.

The session will be chaired by Nick Fahy, who will set the scene and provide some background to the WHO Europe project on enhancing monitoring and reporting. Jane South will then give overview of the HEN synthesis report on measuring resilience, followed Glenn Laverack, who will talk about the HEN report on measuring empowerment. Mark Hanson and Scott Greer will review their respective HEN reports on measuring the life-course approach and whole-of-society approach implementation. Each speaker will be asked to illustrate their presentation with a case study which demonstrates how qualitative evidence can enhance the monitoring and/or reporting of the various concepts.

During the discussion, a number of key questions will be discussed by the panel with input from the audience.
- How can actionable measurement strategies be derived from existing research regarding values based concepts?
- How can meaningful, country-level reporting mechanisms be expanded to include quantitative and qualitative health information and indicators?
- What is the role of cultural contexts in mediating these (and other) values-based concepts?

Key messages:
- Many key public health concepts are inherently values-based. However, this is often not acknowledged, making it challenging to monitor and report on them.
- Qualitative evidence can be key to designing more effective ways to measure the implementation of values-based public health concepts.

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6.E. Workshop: Population attributable fraction: methodologies, utilization and translations into public health messages

Organised by: International Agency for Research on Cancer (IARC), INCa, France
Chair persons: Julie Gaillot - France
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The aim of this session is to give an overview of the methodology, applications, and translations of studies where population attributable fraction is estimated. This session will go through the methodologies of basic population attributable fractions and also further utilization of its method beyond common application today. It will therefore go through best practices and also show case how such estimates can support assessment of prevention programs and also setting up public health messages.

Population Perception and Estimated Contribution of Lifestyle and Environmental Factors on the National Burden of Cancer in France

Isabelle Soerjomataram
International Agency for Research on Cancer, Lyon, France

Assessing the Impact of Prevention Programmes on the Future Burden of Cancer in Northern Europe

Therese Andersson
Karolinska Institutet, Stockholm, Sweden

Translating Population Attributable Fraction into Public Health Messages

Jon Shelton
Cancer Research UK, London, UK

6.F. Maternal and perinatal health

Effects of maternity waiting homes on perinatal deaths in an Ethiopian hospital. A case-control study
Sofia Zanovello

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Background:
A Maternity Waiting Home (MWH) is a residential facility located near a medical facility, where women with high risk pregnancies can await and be transferred to the medical facility shortly before delivery or earlier if a complication arise. MWH are widespread in the developing countries, to reduce the long distances to reach health facilities. The aim of this study was to investigate whether MWH was an effective strategy in reducing perinatal deaths at Wolisso Hospital in Ethiopia, from 2014 to 2017. This hospital is supported by the Italian NGO Doctors With Africa CUAMM, with a strong commitment to reduce maternal and child mortality.

Methods:
Through a case-control study, we compared perinatal mortality among women admitted via MWH and women admitted directly to the hospital. Cases were mothers who

experienced at least a perinatal death before discharge. For each case, two mothers who gave birth to one or more babies alive until discharge were selected as controls. 3 groups of confounding variables were considered: maternal conditions or related to the current pregnancy, variables related to the delivery and neonatal characteristics. A regression model was built adjusting for each group. Statistically significant variables were combined in a final model.

Results:
1175 cases and 2350 controls were included. Women admitted through MWH showed a OR 0.49 (95%CI:0.33-0.71; $p < 0.000$) for perinatal mortality when adjusted for the maternal/current pregnancy conditions, and a OR 0.60 (95%CI:0.40-0.90, $p = 0.013$) when adjusted for the delivery variables. In the final model the risk of perinatal mortality for women admitted to MWH was 54% less than those admitted directly to the hospital (OR = 0.46, 95%CI:0.30-0.70; $p < 0.000$).

Conclusions:
Our results show a more than halved risk of perinatal death cases for women admitted to the hospital through a MWH in rural Ethiopia, and support the policy implemented by the government in building such structures nearby each hospital.

Key messages:
- Maternity Waiting Home is a structure near a health facility, where pregnant women at risk wait for their delivery.
- MWH is an easy and effective tool to reduce perinatal deaths in rural Ethiopia.

Breatsfeeding supression in a Spanish referral hospital (2011-17): a retrospective cohort study
Anna Llupià i García

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Background:
WHO recommends measuring the role of social determinants in the initiation of breastfeeding, given that they will have an impact on the health of these mothers and babies throughout their lives. The present study, the first in Spain, describes the onset of breastfeeding through maternal and pregnancy characteristics related to breastfeeding suppression with cabergoline.

Methods:
We assessed 20965 opportunities of breastfeeding initiation, collecting data of deliveries that had an obstetric clinic history record and resulted with at least one alive baby at the Hospital Clinic of Barcelona (HCB) between January 2011 and December 2017. Adjusted odds ratios for cabergoline use during hospitalization considering maternal, neonatal and pregnancy characteristics were obtained.

Results:
Adjusting for the set of variables, inhibition of lactation was significantly higher in women without or primary studies with respect to women with higher education (OR 2.5, CI95% 2.0-3.0) and living in economically more depressed areas (OR 1.08, 1.04-1.2). Breastfeeding was also more inhibited in women who did not express intention of natural birth (OR 2.3, 1.9-2.9), smokers (OR 2.2, 1.9-2.6), with more previous children (OR 1.2 for each sibling,1.1-1.3), in term versus pre-term birth (OR 1.3, 1.2-1.4), in women with multiple births (OR 1.6, 1.2-2.1) and with higher risk pregnancy (OR 1.3 per risk point, 1.2-1.4). According to the mother's country of birth, and taking Spanish women as a reference, women born in Northern Africa (OR 0.2, 0.1-0.3), in India and Pakistan (0.2, 0.1-0.3), in Eastern Europe (0.4, 0.2-0.6) and Western Europe (0.5, 0.4-0.8) are less likely to inhibit breastfeeding. Chinese women are significantly more likelier to inhibit breastfeeding (OR 7 (5.7-8.6)).

Conclusions:
Inequalities have been detected in the inhibition of lactation in puerperal women. Knowing these inequalities in breastfeeding initiation is the first step to address them.

Key messages:
- This is the first study to describe disparities in breastfeeding inhibition in puerperal women.
- Factors related to lower socioeconomic status and poor health are more likely associated with breatfeeding suppression.

Dietary patterns and gestational weight gain: evidence from the ''Mamma & Bambino'' cohort
Andrea Maugeri

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Background:
In 2009, the Institute of Medicine (IoM) revised the guidelines on recommended gestational weight gain (GWG), taking into account pre-pregnancy body mass index (BMI) independent of age and ethnicity. However, more than half of mothers does not meet these guidelines with adverse outcomes for themselves and for newborns. Here, we used data of 232 women from the ''Mamma & Bambino'' cohort (Catania, Italy) to investigate the association between maternal dietary patterns, pre-pregnancy BMI and GWG.

Methods:
Pregnant women were enrolled during the prenatal genetic counselling, at 4-20 gestational week. Dietary patterns were derived by food frequency questionnaire and principal component analysis. Self-reported pre-pregnancy BMI and GWG was calculated according World Health Organization and IoM guidelines, respectively.

Results:
Adherence to the ''western'' dietary pattern - characterized by high intake of red meat, fries, dipping sauces, salty snacks and alcoholic drinks - was associated with increased GWG ($\beta = 1.217$; SE = 0.487; p = 0.013), especially among obese women ($\beta = 7.363$; SE = 1.808; p = 0.005). In contrast, adherence to the ''prudent'' dietary pattern - characterized by high intake of potatoes, cooked vegetables, legumes, rice and soup - was associated with reduced pre-pregnancy BMI ($\beta = -0.651$; SE = 0.308; p-trend = 0.035). Interestingly, the adherence to this pattern was positively associated with GWG among underweight ($\beta = 4.127$; SE = 1.722; p = 0.048), and negatively among overweight and obese ($\beta = -4.209$; SE = 1.635; p = 0.016 and $\beta = -7.356$; SE = 2.304; p = 0.031, respectively).

Conclusions:
Our findings encourage further studies to evaluate potential preventive strategies against inadequate weight gain, including the promotion of healthy dietary habits even during the periconceptional period.

Key messages:
- Adherence to diet rich in red meat, fries, dipping sauces, salty snacks and alcoholic drinks increases GWG, especially among obese women.
- Adherence to diet rich in potatoes, vegetables, legumes, rice and soup was associated with lower pre-pregnancy BMI, increased GWG among underweight, and decreased GWG among overweight/obese women.

Tobacco smoking in pregnant women: fifty years of evolution in France
Nolwenn Regnault

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Background:
Smoking during pregnancy is a major modifiable risk factor for maternal and foetal morbidity. We aimed to describe 1/ smoking trends in France between 1972 and 2016, 2/ the factors associated with smoking cessation and reduction during pregnancy in 2016.

Methods:
French National Perinatal Surveys are routine surveys based on a representative sample of births (N = 11,733 in 2016). Data were collected in face-to-face interviews in postnatal wards and from the mother's medical record. Smoking rates before pregnancy and during 3rd trimester were estimated for each study year and characteristics associated with smoking reduction (relative percent change in number of cigarettes smoked before and during pregnancy $<50\%$ or $\geq 50\%$) compared with smoking cessation were analysed using multinomial logistic regression.

Results:
After significantly decreasing from 1995 onwards, smoking prevalence stagnates since 2010 both before pregnancy and in the 3rd trimester (30.1% and 16.2%, respectively in 2016). In 2016, 45.8% ceased smoking during pregnancy, 37.2% reduced by $\geq 50\%$ their consumption and 16.9% reduced by $< 50\%$ or did not reduce at all. The more cigarettes women smoked before pregnancy, the greater this reduction was ($p < 0,001$). Moderate reduction ($<50\%$) vs stopping was more frequent in multiparae compared to nulliparae (aOR = 2,47 [IC95%:1,93-3,15]) and in women with low education (aOR($<$High school vs university graduates) = 7,20 [4,78-10,82]) and low income (aOR(<1500€per month/>3000€) = 2,30 [1,51-3,50]).

Conclusions:
Smoking rates were high before and during pregnancy in France in 2016. Socio-demographic factors should be considered when targeting women most at risk of continuing smoking during pregnancy.

Key messages:
- After significantly decreasing from 1995 onwards, smoking prevalence stagnates since 2010 both before pregnancy and in the 3rd trimester in France.
- Supporting female smokers of childbearing age in their attempts to quit and remain non-smokers even after pregnancy is crucial, especially in multiparae and women in poor social condition.

Monitoring Fetal Alcohol Spectrum Disorder during the neonatal period in France
Nolwenn Regnault

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Background:
Alcohol is a known teratogenic and foetotoxic agent. At birth, only the complete foetal alcohol syndrome (FAS) and at most a suspicion for some incomplete syndromic forms can be diagnosed. Yet, other Consequences of prenatal Alcohol Exposure (CAE) can also be observed and recorded in the neonatal period. Our goal was to describe the frequency of diagnosis codes for FAS and CAE at the national and regional level.

Methods:
Between 2006 and 2013, we identified the ICM-10 codes Q860 (FAS) and P043 (CAE) in the hospital records for stays occurring in the 28 first days of life in the French national health insurance database (SNDS). Our ''potential Foetal Alcohol Spectrum Disorders group'' (pFASD), included the FAS and CAE subgroups. The pFASD prevalence was estimated per 1000 live births at the national and regional levels overall and then comparing: 2006-2009 and 2010-2013.

Results:
From 2006 to 2013, 3207 neonates were diagnosed with pFASD during the neonatal period, i.e. 0.48 cases per 1,000 live births, including 0.07‰ of FAS. Between 2006-2009 and 2010-2013, pFASD remained stable (p = 0.6). At the regional level, the proportion of pFASD was the most frequent in one of the overseas territories (La Reunion Island, 1.22‰ births) and in the north-eastern part of mainland France (0.90 ‰ births to 1.02 ‰).

Conclusions:
This study is the first to produce a national estimate of the frequency of neonatal diagnosis of FAS. It shows a stability of the frequency of pFASD cases recorded over the 2006-2013 period which is certainly underestimated but gives a first minimal estimate of the burden of alcohol use during pregnancy in France.

Key messages:
- Alcohol use during pregnancy remains a public health issue in France.
- Estimating the prevalence of FAS is of undeniable priority given the public health implications of these disorders that hinder the development of children exposed, and their avoidable nature.

Adverse pregnancy outcomes and long-term risk of maternal renal disease: a systematic review
Peter Barrett

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Background:
Little is known about the long-term risk of renal disease following adverse pregnancy outcomes, such as hypertensive disorders of pregnancy (HDP), gestational diabetes (GDM) or preterm delivery. We aimed to investigate associations between adverse pregnancy outcomes and maternal chronic kidney disease (CKD) and end-stage kidney disease (ESKD), by synthesising results of relevant studies.

Methods:
A systematic search of PubMed, EMBASE and Web of Science was done up to July 2018. Case-control and cohort studies were eligible for inclusion if they provided original effect estimates for associations between adverse pregnancy outcomes (HDP, GDM, preterm) and maternal renal disease (primary outcomes: CKD, ESKD; secondary outcomes: renal hospitalisation, renal mortality). Two independent reviewers extracted data and assessed risk of bias. Random effects meta-analyses were conducted to determine pooled adjusted odds ratio (AOR) and 95% confidence interval (95%CI) for each association.

Results:
Of 5,120 studies retrieved, 21 studies met inclusion criteria (4,483,847 participants). HDP was associated with increased odds of ESKD (AOR 6.58, 95%CI 4.06-10.65), CKD (AOR 2.08, 95%CI 1.06-4.10), renal hospitalisation (AOR 2.29, 95%CI 1.42-3.71). The magnitude of association was dependent on HDP subtype: AOR for preeclampsia and ESKD was 4.87 (95%CI 3.01-7.87); gestational hypertension and ESKD was 3.65 (95%CI 2.34-5.67); other HDP (including chronic hypertension) and ESKD was 14.67 (95%CI 3.21-66.97). Preterm delivery was associated with increased odds of ESKD (AOR 2.16, 95%CI 1.64-2.85). GDM was associated with increased odds of CKD among black women (AOR 1.78,

95%CI 1.18-2.70), but not Caucasian women (AOR 0.81, 95%CI 0.58-1.13)

Conclusions:

Women who experience adverse pregnancy outcomes have increased odds of renal disease, especially after HDP. Risk stratification and preventive interventions may be needed to reduce the risk of clinically significant renal disease in mothers.

Key messages:
- This is the first study to summarise the long-term risk of renal disease among women who experience a range of adverse pregnancy outcomes.
- Women who experience hypertensive disorders in pregnancy, preterm delivery, or gestational diabetes are at increased odds of renal disease.

6.G. Trends in diabetes and hypertension management

The Entred 3 study: a national representative sample of people with diabetes, 3rd edition-France-2019
Valerie Henry

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Background:

In France, more than 3.3 million people are pharmacologically treated for diabetes. The 3rd edition of the Entred study was launched in 2019 in order to establish an overview of the epidemiological situation of diabetes since the last studies performed in 2001 and 2007. The main objectives are to describe and assess trends in characteristics of people pharmacologically treated for diabetes, in cost of care and clinical care pathways, in quality of care, in quality of life and in mortality and to focus on specific populations.

Methods:

A sample of 13'000 adults has been randomly selected from the two majors French health insurance systems database. Those patients are invited by their health insurance provider to answer to a short phone-based questionnaire and then to a self-administered questionnaire (mailed or by Internet). With the agreement of those patients, their physicians are suggested to answer a questionnaire to collect information concerning their clinical and biological results. A passive follow-up of the sample is implemented by extraction of participants' reimbursement and hospital discharge data from the SNDS (Système National des Données de Santé) for 20 years (the 10 years previous to and the 10 years following the sampling).

Results:

Results expected will present first rates of participation for patients and their physician. Also, a first feedback on the innovative processes of the study, collaborations between institutions and partners will also be presented.

Conclusions:

The expected results of this surveillance system based on a complementary approach (self-questionnaire, medical questionnaires and medico-administrative data) are: health status, therapeutics, economic burden, social and the quality of care pathways, the ways to improve medical practice and the quality of life of people with diabetes. Entred 3 would also be a valuable tool for orientating prevention policies that could be transposed to other countries.

Key messages:
- Entred combines data from people with diabetes, their care providers and extractions of health insurance data. This is a valuable tool for orientating care and prevention policies in diabetes.
- Entred 3 is the continuation of two previous editions and should provide important information not available in administrative database, is a major tool for all stakeholders involved in diabetes care.

Trends of diabetes-delated preventable hospitalizations in an italian region from 2006 to 2015
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Background:

Diabetes-related preventable hospitalizations (DRPHs) are indicators of primary care effective services. The aim of this study is to compute the trends of DRPHs, and to assess the risk factors for increased in-hospital length of stay (LOS) and costs in an Italian region.

Methods:

DRPHs were computed following the AHRQ definitions, which include four types: short-term complications (PQI-1), long-term complications (PQI-3), uncontrolled diabetes (PQI-14), lower-extremity amputations (PQI-16). Trends were direct standardized on in-habitants in 2006. Negative binomial regression model was used.

Results:

In the study period PQI-1 increased +426.9 %, PQI-3 +175.5%, PQI-14 +231.7% and PQI-16 decreased -26.2%. Prolonged LOS was related to type 2 diabetes ($p < 0.001$), peripheral vascular disease ($p = 0.045$), uncomplicated hypertension ($p < 0.001$), liver disease ($p < 0.001$) for PQI-1; type 2 diabetes ($p < 0.001$), uncomplicated hypertension ($p < 0.001$), complicated hypertension ($p < 0.001$) for PQI-3; type 2 diabetes ($p < 0.001$), complicated hypertension ($p = 0.001$), metastasis ($p = 0.042$) for PQI-14; female gender ($p = 0.001$), congestive heart failure (CHF) ($p = 0.001$), valvulopathy ($p = 0.024$), BPCO ($p = 0.028$), renal failure ($p < 0.001$), liver disease ($p = 0.015$) for PQI-16.Considerable factors affecting the costs were female gender ($p = 0.005$), peripheral vascular disease ($p = 0.006$), renal failure ($p = 0.050$) for PQI-1; type 2 diabetes ($p = 0.002$), arrhythmia ($p = 0.002$), peripheral vascular disease ($p < 0.001$), BPCO ($p < 0.001$), renal failure ($p < 0.001$) for PQI-3; peripheral vascular disease ($p = 0.004$), uncomplicated hypertension ($p = 0.005$), BPCO ($p = 0.011$), renal failure ($p = 0.009$), liver disease ($p < 0.001$), psychosis ($p = 0.027$) for PQI-14; CHF ($p = 0.014$), arrhythmia ($p = 0.001$), uncomplicated hypertension ($p = 0.003$), renal failure ($p = 0.008$), deficiency anemia ($p = 0.032$) for PQI-16.

Conclusions:

DRPHs has been increasing and some comorbidities need to be better managed in outpatient setting to reduce LOS and costs.

Key messages:
- This study addresses the effect of multimorbidity on the burden of diabetes-related preventable hospitalizations using administrative data from an entire italian region over 10 years period.