

## **Abortion**

A4799: Unsafe abortion in 2008: global and regional levels and trends

Author: Iqbal Shaha and Elisabeth Ahman

Source: Reproductive health matters, 18, 36 (2010): 90-101

Abstract: Despite the availability of safe and highly effective methods of abortion, unsafe abortions continue to be widespread, nearly all in developing countries. The latest estimates from the World Health Organization put the figure at 21.6 million unsafe abortions worldwide in 2008, up from 19.7 million in 2003, a rise due almost entirely to the increasing number of women of reproductive age globally. No substantial decline was found in the unsafe abortion rate globally or by major region; the unsafe abortion rate of 14 per 1,000 women aged 15–44 years globally remained the same from 2003 to 2008. Modest reductions in unsafe abortion rates were found in 2008 as compared to 2003 in most sub-regions, however. The upward changes in rates in Middle Africa, Western Asia and Central America were due to better coverage and more reliable information in 2008 than in 2003. Eastern and Middle Africa showed the highest rates of unsafe abortion among all sub-regions. Some 47,000 women per year are estimated to lose their lives from the complications of unsafe abortion, almost all of which could have been prevented through better access to sexuality education, fertility awareness, contraception and especially safe abortion services.

Keywords: Unsafe abortion, maternal mortality, developing countries

A4800: Access to safe and legal abortion for teenage women from deprived backgrounds in Hong Kong

Author: Suet Lin Hung

Source: Reproductive health matters, 18, 36 (2010): 102-110

Abstract: This paper reports on a qualitative study in 2007–08 on the abortion experiences of teenage women from deprived backgrounds in Hong Kong. Twenty-nine young women aged 13–24 who had undergone one or more induced abortions in their teen years were interviewed and participated in group empowerment sessions. Ten were unemployed, four were students, the rest were employed on low pay in unskilled occupations. Abortion services are legal and available in public and private services, but they charge fees ranging from HK\$310 to \$10,000, and do abortions only up to 24 weeks of pregnancy. Many young women resort to poor quality illegal clinics and clinics in mainland China because the cost is lower, they do not wish to tell

their parents, who would be asked for consent, and/or they want to protect their sex partners, who may be reported and prosecuted if the girl is under-age. There is a need to strengthen services for teenage women in Hong Kong, especially those who are pregnant and from deprived backgrounds. There is also a need for professionals who deliver adolescent health and social welfare services, and for society to rethink and re-examine its views and attitudes towards teenage pregnancy, sexuality and abortion.

Keywords: Abortion law and policy, adolescents and young people, reproductive rights, unwanted pregnancy

A4801: Self-induction of abortion among women in the United States

Author: Daniel Grossmana

Source: Reproductive health matters, 18, 36 (2010): 136-146

Abstract: Recent media coverage and case reports have highlighted women's attempts to end their pregnancies by self-inducing abortions in the United States. This study explored women's motivations for attempting self-induction of abortion. We surveyed women in clinic waiting rooms in Boston, San Francisco, New York, and a city in Texas to identify women who had attempted self-induction. We conducted 30 in-depth interviews and inductively analyzed the data. Median age at time of self-induction attempt was 19 years. Between 1979 and 2008, the women used a variety of methods, including medications, malta beverage, herbs, physical manipulation and, increasingly, misoprostol. Reasons to self-induce included a desire to avoid abortion clinics, obstacles to accessing clinical services, especially due to young age and financial barriers, and a preference for self-induction. The methods used were generally readily accessible but mostly ineffective and occasionally unsafe. Of the 23 with confirmed pregnancies, three reported a successful abortion not requiring clinical care. Only one reported medical complications in the United States. Most would not self-induce again and recommended clinic-based services. Efforts should be made to inform women about and improve access to clinic-based abortion services, particularly for medical abortion, which may appeal to women who are drawn to self-induction because it is natural, non-invasive and private.

Keywords: Self-induced abortion, medical abortion, adolescents and young people, United States

A4879: Induced First-Trimester Abortion and Risk of Mental Disorder

Author: Trine Munk-Olsen

Source: New England journal of medicine, 364, 4 (2011): 332-339

**Abstract:** Background: Concern has been expressed about potential harm to women's mental health in association with having an induced abortion, but it remains unclear whether induced abortion is associated with an increased risk of subsequent psychiatric problems. Methods: We conducted a population-based cohort study that involved linking information from the Danish Civil Registration system to the Danish Psychiatric Central Register and the Danish National Register of Patients. The information consisted of data for girls and women with no record of mental disorders during the 1995–2007 period who had a first-trimester induced abortion or a first childbirth during that period. We estimated the rates of first-time psychiatric contact (an inpatient admission or outpatient visit) for any type of mental disorder within the 12 months after the abortion or childbirth as compared with the 9-month period preceding the event. Results: The incidence rates of first psychiatric contact per 1000 person-years among girls and women who had a first abortion were 14.6 (95% confidence interval [CI], 13.7 to 15.6) before abortion and 15.2 (95% CI, 14.4 to 16.1) after abortion. The corresponding rates among girls and women who had a first childbirth were 3.9 (95% CI, 3.7 to 4.2) before delivery and 6.7 (95% CI, 6.4 to 7.0) post partum. The relative risk of a psychiatric contact did not differ significantly after abortion as compared with before abortion ( $P=0.19$ ) but did increase after childbirth as compared with before childbirth ( $P<0.001$ ). Conclusions: The finding that the incidence rate of psychiatric contact was similar before and after a first-trimester abortion does not support the hypothesis that there is an increased risk of mental disorders after a first-trimester induced abortion.

**Keywords:** Abortion, mental disorder, Induced abortion

## **AIDS/HIV**

A4777: Effectiveness of a knowledge-contact program in improving nursing students' attitudes and emotional competence in serving people living with HIV/AIDS

Author: Jessie W. Yiu

Source: *Social Science & Medicine*, 71, 1 (2010): 38-44

Abstract: This study compared the effectiveness of an AIDS knowledge-only program (knowledge) with a combined program of AIDS knowledge and contact with people having HIV/AIDS (PHA) (knowledge-contact) in reducing nursing students' stigma and discrimination towards PHA and in enhancing their emotional competence to serve PHA. Eighty-nine nursing students from two universities in Hong Kong were randomly assigned to either the knowledge or the knowledge-contact condition. All participants completed measures of AIDS knowledge, stigmatizing attitudes, fear of contagion, willingness to treat, positive affect, and negative affect at pre-test, post-test, and six-week follow-up. Findings showed that in both groups, significant improvement in AIDS knowledge, stigmatizing attitudes, fear of contagion, willingness to treat, and negative affect were found at post-test. The effects on AIDS knowledge, fear of contagion, willingness to treat, and negative affect were sustained at follow-up for both groups. Intergroup comparisons at post-test showed that the effectiveness of knowledge-contact program was significantly greater than knowledge program in improving stigmatizing attitudes. No significant difference between the two groups was found at follow-up. Findings showed the short-term effect of contact in improving nursing students' attitudes and emotional competence in serving PHA. Implications for research and training of nursing staff were discussed.

Keywords: HIV, AIDS, stigma, nursing students, knowledge, Hong Kong

A4783: Investigating the association between HIV/AIDS and recent fertility patterns in Kenya

Author: Monica Akinyi Magadia and Alfred O. Agwandab

Source: *Social Science & Medicine*, 71, 2 (July 2010): 335-344

Abstract: Findings from previous studies linking the HIV/AIDS epidemic and fertility of populations have remained inconclusive. In sub-Saharan Africa, demographic patterns point to the epidemic resulting in fertility reduction. However, evidence from the 2003 Kenya Demographic and Health Survey (KDHS) has revealed interesting patterns, with regions most adversely affected with HIV/AIDS showing the clearest reversal trend in fertility decline. While there is suggestive evidence that fertility behaviour in some parts of sub-Saharan Africa has

changed in relation to the HIV/AIDS epidemic, more rigorous empirical analysis is necessary to better understand this relationship. In this paper, we examine individual and contextual community HIV/AIDS factors associated with fertility patterns in Kenya, paying particular attention to possible mechanisms of the association. Multilevel models are applied to the 2003 KDHS, introducing various proximate fertility determinants in successive stages, to explore possible mechanisms through which HIV/AIDS may be associated with fertility. The results corroborate findings from earlier studies of the fertility inhibiting effect of HIV among infected women. HIV-infected women have 40 percent lower odds of having had a recent birth than their uninfected counterparts of similar background characteristics. Further analysis suggests an association between HIV/AIDS and fertility that exists through proximate fertility determinants relating to sexual exposure, breastfeeding duration, and foetal loss. While HIV/AIDS may have contributed to reduced fertility, mainly through reduced sexual exposure, there is evidence that it has contributed to increased fertility, through reduced breastfeeding and increased desire for more children resulting from increased infant/child mortality (i.e. a replacement phenomenon). In communities at advanced stages of the HIV/AIDS epidemic, it is possible that infant/child mortality has reached appreciably high levels where the impact of replacement and reduced breastfeeding duration is substantial enough to result in a reversal of fertility decline. This provides a plausible explanation for the patterns observed in regions with particularly high HIV prevalence in Kenya.

Keywords: Kenya, HIV infection, AIDS infection, fertility patterns, reproductive preferences, contextual community factors

A4789: AIDS in the family and community: The impact on child health in Malawi

Author: Rachel Kidman

Source: *Social Science & Medicine*, 71, 5 (September 2010): 966-974

Abstract: Pediatric HIV infections jeopardize children's health and survival. Much less is known about how the experiences of being orphaned, living with chronically ill parents, or living in a severely affected community impact child health. Our study responds by examining which HIV/AIDS-related experiences place children at greatest risk for poor health. Data from the 2004–2005 Malawi Integrated Household Survey were analyzed using logistic multilevel modeling to examine whether HIV/AIDS-related experiences within the family and community predicted reported health status among children age 6–17 years. We found higher burdens of acute and chronic morbidity for children whose parents have an AIDS-related illness. No other AIDS-related exposure, including orphanhood and recent household deaths, demonstrated a clear relationship with health status. Children living with sick parents may be at increased risk

due to the spread of infectious disease and receiving limited adult care. Community home-based care programs are best situated to identify children in these difficult circumstances and to mitigate their disadvantage.

Keywords: Malawi, Africa, HIV, AIDS, child health, orphan

A4790: Exploring children's stigmatisation of AIDS-affected children in Zimbabwe through drawings and stories

Author: Catherine Campbell

Source: *Social Science & Medicine*, 71, 5 (September 2010): 975-985

Abstract: AIDS-related stigma is a major contributor to the health and psychosocial well-being of children affected by AIDS. Whilst it is often suggested that AIDS-affected children may be stigmatised by other children, to date no research focuses specifically on child-on-child stigma. Using social representations theory, we explore how Zimbabwean children represent AIDS-affected peers, examining (i) whether or not they stigmatise, (ii) the forms stigma takes, and (iii) the existence of non-stigmatising representations that might serve as resources for stigma-reduction interventions. Our interest in identifying both stigmatising and non-stigmatising representations is informed by a theory of change which accords a central role to community-level debate and dialogue in challenging and reframing stigmatising representations. In late 2008, 50 children (aged 10–12) were asked to “draw a picture of a child whose family has been affected by AIDS in any way”, and to write short stories about their drawings. Thematic analysis of stories and drawings revealed frequent references to stigmatisation of AIDS-affected children – with other children refusing to play with them, generally keeping their distance and bullying them. However children also frequently showed a degree of empathy and respect for AIDS-affected children's caring roles and for their love and concern for their AIDS-infected parents. We argue that a key strategy for stigma-reduction interventions is to open up social spaces in which group members (in this case children) can identify the diverse and contradictory ways they view a stigmatised out-group, providing opportunities for them to exercise agency in collectively challenging and renegotiating negative representations. Contrary to the common view that drawings enable children to achieve greater emotional expression than written stories, our children's drawings tended to be comparatively stereotypical and normative. It was in written stories that children most eloquently expressed meanings and emotions, and an awareness of the complexity of the scenarios they portrayed.

Keywords: Zimbabwe, AIDS, HIV, children, psychosocial well-being, social representations, Africa

A4822: HIV Transmission by Stage of Infection and Pattern of Sexual Partnerships

Author: Kim, Jong-Hoon

Source: *Epidemiology*, 21, 5 (September 2010): 676-684

**Abstract:** **Background:** Most model analyses examining the role of primary HIV infection in the HIV epidemic ignore the fact that HIV is often transmitted through long-term, concurrent sexual partnerships. We sought to understand how duration and concurrency of sexual partnerships affect the role of transmissions during primary HIV infection. **Methods:** We constructed a stochastic individual-based model of HIV transmission in a homogeneous population where partnerships form and dissolve. Using observed contagiousness by stage of HIV infection, the fraction of transmissions during primary HIV infection at equilibrium was examined across varying partnership durations and concurrencies. **Results:** The fraction of transmissions during primary HIV infection has a U-shaped relationship with partnership duration. The fraction drops with increasing partnership duration for partnerships with shorter average duration but rises for partnerships with longer average duration. Partnership concurrency modifies this relationship. The fraction of transmissions during primary HIV infection increases with increasing partnership concurrency for partnerships with shorter average duration, but decreases for partnerships with longer average duration. **Conclusions:** Partnership patterns strongly influence the transmission of HIV and do so differentially by stage of infection. Dynamic partnerships need to be taken into account to make a robust inference on the role of different stages of HIV infection.

**Keywords:** HIV, HIV transmission, disease

A4842: Nonmarital Sex and Condom Knowledge among Ethiopian Young People: Improved Estimates Using a Nonverbal Response Card

Author: David P. Lindstrom

Source: *Studies in Family Planning*, 41, 4 (December 2010): 251-262

**Abstract:** The accurate assessment of risky sexual behaviors and barriers to condom use is essential to reduce the spread of HIV/AIDS. This study tests a new nonverbal response-card method for obtaining more accurate responses to sensitive questions in the context of face-to-face interviewer-administered questionnaires in a survey of 1,269 Ethiopian young people aged 13-24. Comparisons of responses between a control group that provided verbal responses and an experimental group that used the card indicate that the prevalence of nonmarital sexual intercourse may be two times higher and knowledge of condom access may be 22 percent

lower in the study than typical population-survey methods suggest. These results suggest that our nonverbal response-card method yields less biased estimates of risky adolescent sexual behavior and perceived access to condoms than those derived from conventional face-to-face interviewer-administered surveys, and that this method provides an effective, easy-to-use, low-cost alternative.

Keywords: HIV, AIDS, condom, Ethiopian, family planning

A4851: Estimating the number of people living with HIV/AIDS in China: 2003–09

Author: Ning Wang

Source: *International Journal of Epidemiology*, 39, supplement (December 2010): ii21-ii28

**Abstract:** **Background:** Before 2003, little was known about the scale of China's HIV/AIDS epidemic. In 2003, the Chinese government produced national estimates with support from the Joint United Nations Programme on HIV/AIDS, the World Health Organization and the United States Centers for Disease Control and Prevention. Subsequent national estimation exercises were carried out in 2005, 2007 and 2009. We describe these estimation processes and present the results of China's HIV/AIDS estimation exercises from 2003 to 2009. **Methods:** The Workbook Method was used to generate national HIV/AIDS estimates. Data from the provincial level were used in 2003, data from the prefecture level were used in 2005 and data from the county level were used in 2007 and 2009. Data at the lowest level of aggregation were used to estimate risk group population size and HIV prevalence. Data from lower levels were combined into national estimates. **Results:** At the end of 2003, 2005, 2007 and 2009, there were an estimated 0.84, 0.65, 0.70 and 0.74 million people living with HIV/AIDS in China, respectively, with an overall HIV prevalence of 0.05–0.06%. The number of new HIV infections decreased from 70 000 in 2005, to 50 000 in 2007, to 48 000 in 2009. Data quality improvements have increased the precision of China's HIV estimates. **Conclusion:** Repeated estimates have improved understanding of the HIV/AIDS epidemic in China. HIV estimates are a valuable tool for guiding national AIDS policies evaluating HIV prevention and control programmes.

Keywords: HIV, AIDS, estimation, workbook, epidemiologic methods, China

A4852: Development of a unified web-based national HIV/AIDS information system in China

Author: Yurong Mao

Source: *International Journal of Epidemiology*, 39, supplement 2 (December 2010): ii79-ii89



**Abstract:** **Background:** In the past, many data collection systems were in operation for different HIV/AIDS projects in China. We describe the creation of a unified, web-based national HIV/AIDS information system designed to streamline data collection and facilitate data use. **Methods:** Integration of separate HIV/AIDS data systems was carried out in three phases. Phase 1, from January 2006 to December 2007, involved creating a set of unified data collection forms that took into account existing program needs and the reporting requirements of various international organizations. Phase 2, from January to October 2007, involved creating a web-based platform to host the integrated HIV/AIDS data collection system. Phase 3, from November to December 2007, involved pilot testing the new, integrated system prior to nationwide application. **Results:** Eight web-based data collection subsystems based on one platform began operation on 1 January 2008. These eight subsystems cover: (i) HIV/AIDS case reporting; (ii) HIV testing and counselling; (iii) antiretroviral treatment (ART) for adults; (iv) ART for children; (v) behavioural interventions for high-risk groups; (vi) methadone maintenance treatment; (vii) sentinel and behavioural surveillance; and (viii) local county background information. The system provides real-time data to monitor HIV testing, prevention and treatment programs across the country. **Conclusion:** China's new unified, web-based HIV/AIDS information system has improved the efficiency of data collection, reporting, analysis and use, as well as data quality and security. It is a powerful tool to support policy making, program evaluation and implementation of the national HIV/AIDS program and, thus, may serve a model for other countries.

**Keywords:** HIV, AIDS, Information system, web-based, China

## **Alcohol and tobacco**

A4787: Waiting until they got home: Gender, smoking and tobacco exposure in households in Scotland

Author: Jude Robinson

Source: Social Science & Medicine, 71, 5 (September 2010): 884-890

Abstract: The introduction in March 2006 of legislation banning smoking in public places in Scotland raised concerns that smokers would smoke more at home and so increase the exposure of those living with them to tobacco smoke. Drawing on interviews from two qualitative studies conducted after the implementation of the legislation, this article uses a gendered analysis to explore where and why smokers, who lived with non-smokers including children, continued to smoke in their homes. Although very few people attributed any increased home smoking to being a direct consequence of the legislation, many who already smoked there continued, and most women reported little or no disruption to their home smoking post-legislation. Also, because of the changing social environment of smoking, and other life circumstances, a minority of women had increased their levels of home smoking. Compared to the men in these studies, women, particularly those who didn't work outside the home, had restricted social lives and thus were less likely to have smoked in public places before the legislation and spent more time socialising in the homes of other people. In addition, women with children, including women who worked outside their homes, were more likely to spend sustained periods of time caring for children compared to fathers, who were more likely to leave the home to work or socialise. Although home smoking was linked to gendered caring responsibilities, other issues associated with being a smoker also meant that many women smokers chose to keep smoking in their homes.

Keywords: Scotland, gender, smoking, tobacco control, UK

A4788: Westernization and tobacco use among young people in Delhi, India

Author: Melissa Stigler

Source: Social Science & Medicine, 71, 5 (September 2010): 891-897

Abstract: Few studies have explored the relationship between acculturation and health in non-immigrant populations. The purpose of this study was to investigate the relationship between "westernization" and tobacco use among adolescents living in Delhi, India. A bi-dimensional model of acculturation was adapted for use in this study to examine (a) whether young people's

identification with Western culture in this setting is related to tobacco use, and (b) whether their maintenance of more traditional Indian ways of living is related to tobacco use. Multiple types of tobacco commonly used in India (e.g., cigarettes, bidis, chewing tobacco) were considered. Socioeconomic status (SES), gender, and grade level were examined as potential effect modifiers of the relationship between “westernization” and tobacco use. The study was cross-sectional by design and included 3512 students in eighth and tenth grades who were enrolled in 14 Private (higher SES) and Government (lower SES) schools in Delhi, India. A self-report survey was used to collect information on tobacco use and “westernization.” The results suggest that young people’s identification with Western influences may increase their risk for tobacco use, while their maintenance of traditional Indian ways of living confers some protection. Importantly, these effects were independent of one another. Boys benefitted more from protective effects than girls, and tenth graders gained more consistent benefits than eighth graders in this regard, too. Negative effects associated with identification with Western ways of living were, in contrast, consistent across gender and grade level. The positive and negative effects of acculturation on adolescent tobacco use held for all tobacco products considered here. Future interventions designed to curb youth tobacco use in India may benefit by paying closer attention to cultural preferences of these young consumers.

Keywords: India, tobacco use, adolescents, globalization, gender

A4810: Smoking behaviours and contextual influences on adolescent nicotine dependence

Author: Hui Jackie Guo

Source: Australian and New Zealand Journal of Public Health, 34, 5 (October 2010): 502–507

Abstract: Objective: The objectives of the study were to analyse nicotine-dependence patterns among secondary school students in New Zealand (NZ), and identify factors associated with levels of nicotine dependence. Method: This study uses data from the 2004 Youth Lifestyle Study, a survey of Year 10 and 12 students from randomly selected schools in NZ. The analysis included 625 current adolescent smokers. Nicotine dependence was measured with the Hooked on Nicotine Checklist (HONC). Potential dependence-associated factors studied include: socio-demographic factors; smoking behaviours; and smoking contexts. Results: A large percentage (87.9%) of the current adolescent smokers reported at least one HONC symptom, with a mean HONC score of 4.9 out of a possible 10. Multivariate analyses identified: school decile; age at which started smoking monthly; lifetime cigarette consumption; and peers smoking as statistically significant predictors of nicotine dependence. Conclusions: Adolescent smokers are very likely to become dependent on nicotine. Students from the highest school decile had markedly lower HONC scores. Earlier onset of monthly smoking, heavier overall

consumption and peers smoking were associated with higher HONC scores. These findings provide important insights into factors that may need to be modified to help reduce nicotine dependence among adolescents.

Keywords: Adolescent, dependence, tobacco, smoking behaviours

A4881: Alcohol use and implications for public health: Patterns of use in four communities

Author: N Girish

Source: Indian Journal of Community Medicine, 35, 2 (2010): 238-244

Abstract: Background: Alcohol is one of the leading causes of death and disability globally and in India. Information on quantum and pattern of consumption is crucial to formulate intervention programs. Objectives: To identify the extent and pattern of alcohol use in urban, rural, town and slum populations using a uniform methodology. Materials and Methods: Door-to-door survey was undertaken and simple random sampling methodology was adopted; households were the primary sampling unit. One respondent in each alcohol-user household was randomly chosen for detailed interview. Results: Overall, 13% of males and females consumed alcohol. Proportion of users was greater in town (15.7%) and among 26-45 years (67.4%). Whisky (49%) and arrack (35%) were the preferred types and the preferences differed between rural (arrack) and urban (beer) areas. Nearly half (45%) of rural population were very frequent users (consuming daily or every alternate-days) as against users in town (23%) or slum (20%). Two-thirds were long-term users and the proportions were greater in the rural and town areas. While, overall 17% of the users were heavy-users, frequent-heavy-drinking was more in slum and rural areas. Nearly two-thirds consumed alcohol in liquor-shops, restaurants, bars and pubs. Habituation and peer-pressure were the key reasons for alcohol use. Conclusions: The study documented alcohol use and patterns of use in four different communities particularly in transitional areas using similar methodology. Many of the patterns identified are detrimental to health both immediate and over the long period of time.

Keywords: Alcohol, public health, four communities

A4882: Patterns of tobacco use across rural, urban, and urban-slum populations in a North Indian community

Author: Vivek Gupta

Source: Indian Journal of Community Medicine, 35, 2 (2010): 245-251

**Abstract:** **Background:** Tobacco is the leading cause of mortality globally and in India. The magnitude and the pattern of tobacco consumption are likely to be influenced by the geographical setting and with rapid urbanization in India there is a need to study this differential pattern. **Aim:** The aim was to study the rural, urban, and urban-slum differences in patterns of tobacco use. **Settings:** The study was conducted in Ballabgarh block, Faridabad district, Haryana, and was a community-based cross-sectional study. **Materials and Methods:** The study was conducted in years 2003-2004 using the WHO STEPS approach with 7891 participants, approximately equal number of males and females, selected using multistage sampling from urban, urban-slum, and rural strata. **Statistical Analysis:** The analysis was done using the SPSS 12.0 statistical package (SPSS Inc., Chicago, IL, USA). Direct standardization to the WHO world standard population was done to and chi-square and ANOVA tests were used for comparison across three study settings. **Results:** Self-reported tobacco use among males was as follows: urban 35.2%; urban-slums 48.3%; and rural 52.6% (P value <0.05). Self-reported tobacco use among females was as follows: Urban 3.5%; urban-slums 11.9%; and rural 17.7% (P value <0.05). More males reported daily bidi (tobacco wrapped in temburini leaf) smoking (urban 17.8%, urban-slums 36.7%, rural 44.6%) than cigarette use (urban 9.6%, urban-slums 6.3%, rural 2.9%). Females using smoked tobacco were almost exclusively using bidis (urban 1.7%, 7.9%, 11% in rural). Daily chewed tobacco use had urban, urban-slum, and rural gradients of 12%, 10.5%, and 6.8% in males respectively. Its use was low in females. **Conclusion:** The antitobacco policies of India need to focus on bidis in antitobacco campaigns. The program activities must find ways to reach the rural and urban-slum populations.

**Keywords:** Tobacco, rural population, urban population, North Indian community

## Andrology

A4845: Prospective association of low serum total testosterone levels with health care utilization and costs in a population-based cohort of men

Author: R. Haring

Source: *International Journal of Andrology*, 33, 6 (December 2010): 800–809

**Abstract:** Despite the burgeoning interest in the field of andrology, no studies have specifically addressed the impact of serum testosterone levels on healthcare utilization and costs. We analysed data from the population-based cohort Study of Health in Pomerania (SHIP), Germany, to assess the association of serum testosterone levels with self-reported health care utilization and costs at baseline and at 5 years follow up. Study sample comprised 2023 men at baseline, of whom 1530 men were repeatedly examined. Low and high serum testosterone levels, defined according to the age-specific 10th and 90th percentile, were compared with reference subjects with serum testosterone levels  $\geq 10$ th –  $\leq 90$ th percentile. Two-part econometric models were applied adjusting for socio-economic and medical confounders. Cross-sectional models revealed higher numbers of outpatient visits and higher costs for both, men with low (+19.1 and +19.9%, respectively) and high serum testosterone levels (+25.3 and +30.2%, respectively), whereas number of inpatient days and costs were not associated with serum testosterone levels. Adjustment for age, educational level, income, waist circumference, smoking status, physical activity and alcohol consumption did not considerably alter the results. Longitudinal models revealed a significant association of low serum testosterone levels with increased number of follow-up outpatient visits (age-adjusted: +28.6%) and costs (+38.0%) only. Low and high serum testosterone levels were associated with increased short-term outpatient health care costs, whereas low serum testosterone levels appear to be predictive of long-term outpatient health care costs. Cost-effectiveness studies of available treatments are necessary to identify benefits for physicians, patients and health care system as a whole.

**Keywords:** Health care utilization, study of health in Pomerania, total testosterone

A4846: Macrophage activity in semen is significantly correlated with sperm quality in infertile men

Author: K. Tremellen, O. Tunc

Source: *International Journal of Andrology*, 33, 6 (December 2010): 823–831

Abstract: The presence of leucocytes within semen has the potential to impair sperm function. Neutrophils and macrophages make up 95% of seminal leucocytes, with both having the ability to damage sperm via the generation of reactive oxygen species, proteases and the induction of apoptosis. Existing cytological techniques for quantifying leucocyte activity within semen (peroxidase, CD45) are less than ideal as they merely count the number of leucocytes, rather than assess their activity. Seminal plasma elastase effectively determines neutrophil activity, yet gives no insight into macrophage activity. Neopterin, a molecule released from activated macrophages, may be a useful marker for macrophage activity in the male reproductive tract. To examine this possibility a total of 63 asymptomatic subjects with male factor infertility and 11 fertile controls provided semen samples for measurement of various inflammatory markers. We were able to confirm for the first time that seminal plasma does indeed contain neopterin and that the levels of this macrophage activity marker are threefold higher in infertile than fertile men. Furthermore, seminal plasma neopterin concentration was significantly correlated with sperm oxidative stress, DNA fragmentation (TUNEL) and apoptosis (Annexin V), making it a useful marker of sperm quality. By contrast, seminal plasma elastase showed no correlation with any marker of sperm quality.

Keywords: DNA, elastase, leucocyte, macrophage

## Asthma

A2743: Tiotropium Bromide Step-up Therapy for Adults with Uncontrolled Asthma

Author: Stephen P. Peters

Source: New England Journal of Medicine, 363, 18 (October 2010): 1715-1726

**Abstract:** Background: Long-acting beta-agonist (LABA) therapy improves symptoms in patients whose asthma is poorly controlled by an inhaled glucocorticoid alone. Alternative treatments for adults with uncontrolled asthma are needed. Methods: In a three-way, double-blind, triple-dummy crossover trial involving 210 patients with asthma, we evaluated the addition of tiotropium bromide (a long-acting anticholinergic agent approved for the treatment of chronic obstructive pulmonary disease but not asthma) to an inhaled glucocorticoid, as compared with a doubling of the dose of the inhaled glucocorticoid (primary superiority comparison) or the addition of the LABA salmeterol (secondary noninferiority comparison). Results: The use of tiotropium resulted in a superior primary outcome, as compared with a doubling of the dose of an inhaled glucocorticoid, as assessed by measuring the morning peak expiratory flow (PEF), with a mean difference of 25.8 liters per minute ( $P < 0.001$ ) and superiority in most secondary outcomes, including evening PEF, with a difference of 35.3 liters per minute ( $P < 0.001$ ); the proportion of asthma-control days, with a difference of 0.079 ( $P = 0.01$ ); the forced expiratory volume in 1 second (FEV<sub>1</sub>) before bronchodilation, with a difference of 0.10 liters ( $P = 0.004$ ); and daily symptom scores, with a difference of -0.11 points ( $P < 0.001$ ). The addition of tiotropium was also noninferior to the addition of salmeterol for all assessed outcomes and increased the prebronchodilator FEV<sub>1</sub> more than did salmeterol, with a difference of 0.11 liters ( $P = 0.003$ ). Conclusions: When added to an inhaled glucocorticoid, tiotropium improved symptoms and lung function in patients with inadequately controlled asthma. Its effects appeared to be equivalent to those with the addition of salmeterol.

**Keywords:** Bromide, tiotropium, inhaled glucocorticoids, beta-agonists



## Cancer

A2742: Anaplastic Lymphoma Kinase Inhibition in Non–Small-Cell Lung Cancer

Author: E.L. Kwak

Source: *New England Journal of Medicine*, 363, 18 (October 2010): 1093-1703

**Abstract:** Background: Oncogenic fusion genes consisting of EML4 and anaplastic lymphoma kinase (ALK) are present in a subgroup of non–small-cell lung cancers, representing 2 to 7% of such tumors. We explored the therapeutic efficacy of inhibiting ALK in such tumors in an early-phase clinical trial of crizotinib (PF-02341066), an orally available small-molecule inhibitor of the ALK tyrosine kinase. Methods: After screening tumor samples from approximately 1500 patients with non–small-cell lung cancer for the presence of ALK rearrangements, we identified 82 patients with advanced ALK-positive disease who were eligible for the clinical trial. Most of the patients had received previous treatment. These patients were enrolled in an expanded cohort study instituted after phase 1 dose escalation had established a recommended crizotinib dose of 250 mg twice daily in 28-day cycles. Patients were assessed for adverse events and response to therapy. Results: Patients with ALK rearrangements tended to be younger than those without the rearrangements, and most of the patients had little or no exposure to tobacco and had adenocarcinomas. At a mean treatment duration of 6.4 months, the overall response rate was 57% (47 of 82 patients, with 46 confirmed partial responses and 1 confirmed complete response); 27 patients (33%) had stable disease. A total of 63 of 82 patients (77%) were continuing to receive crizotinib at the time of data cutoff, and the estimated probability of 6-month progression-free survival was 72%, with no median for the study reached. The drug resulted in grade 1 or 2 (mild) gastrointestinal side effects. Conclusions: The inhibition of ALK in lung tumors with the ALK rearrangement resulted in tumor shrinkage or stable disease in most patients.

**Keywords:** Anaplastic lymphoma kinase, non–small-cell lung cancers, therapeutic efficacy, small-molecule Inhibitor

A4755: Cancer Incidence in Female Cosmetologists and Manicurists in California, 1988–2005

Author: Thu Quach

Source: *American Journal of Epidemiology*, 172, 6 (September 2010): 691-699

**Abstract:** Health concerns have been pronounced for cosmetologists and manicurists, who are exposed daily to cosmetic products containing known or suspected human carcinogens and endocrine disruptors. In this retrospective cohort study, the authors used probabilistic record

linkage between California's statewide cosmetology licensee and cancer surveillance files to identify newly diagnosed invasive cancers among female workforce members during 1988–2005. Rate ratios and 95% confidence intervals for cancer among workforce members compared with the general female population in California were estimated via Poisson regression. For comparison, site-specific proportional incidence ratios were computed. The authors identified 9,044 cancer cases in a cohort of 325,228 licensees. Rate ratios for all sites combined suggested lower incidence among both cosmetologists (rate ratio = 0.84, 95% confidence interval (CI): 0.82, 0.86) and manicurists (rate ratio = 0.87, 95% CI: 0.84, 0.90). Proportional incidence ratios were modestly elevated for thyroid cancer among all licensees (proportional incidence ratio = 1.13, 95% CI: 1.04, 1.23) and for lung cancer among manicurists (proportional incidence ratio = 1.21, 95% CI: 1.07, 1.36). Although there did not appear to be a cancer excess, these findings may be artifactually influenced by limitations in demographic information available from the licensee files. Additionally, the relatively young ages of cohort members and demographic shifts in the industry composition in recent years suggest a need for further follow-up.

Keywords: Cohort studies, female cosmetologists, thyroid neoplasms

A4802: Cigarette Smoking, Genetic Variants in Carcinogen-metabolizing Enzymes, and Colorectal Cancer Risk

Author: Sean P. Cleary

Source: American Journal of Epidemiology, 172, 9 (November 2010): 1000-1014

Abstract: The risk of colorectal cancer associated with smoking is unclear and may be influenced by genetic variation in enzymes that metabolize cigarette carcinogens. The authors examined the colorectal cancer risk associated with smoking and 26 variants in carcinogen metabolism genes in 1,174 colorectal cancer cases and 1,293 population-based controls recruited in Canada by the Ontario Familial Colorectal Cancer Registry from 1997 to 2001. Adjusted odds ratios were calculated by multivariable logistic regression. Smoking for >27 years was associated with a statistically significant increased colorectal cancer risk (adjusted odds ratio (AOR) = 1.25, 95% confidence interval (CI): 1.02, 1.53) in all subjects. Colorectal cancer risk associated with smoking was higher in males for smoking status, duration, and intensity. The CYP1A1-3801-CC (AOR = 0.47, 95% CI: 0.23, 0.94) and CYP2C9-430-CT (AOR = 0.82, 95% CI: 0.68, 0.99) genotypes were associated with decreased risk, and the GSTM1-K173N-CG (AOR = 1.99, 95% CI: 1.21, 3.25) genotype was associated with an increased risk of colorectal cancer. Statistical interactions between smoking and genetic variants were assessed by comparing logistic regression models with and without a multiplicative interaction term. Significant interactions were observed between smoking status and SULT1A1-638 ( $P = 0.02$ ), NAT2-857 ( $P = 0.01$ ), and CYP1B1-4390 ( $P = 0.04$ ) variants and between smoking duration and NAT1-1088 ( $P$

= 0.02), SULT1A1-638 (P = 0.04), and NAT1-acetylator (P = 0.03) status. These findings support the hypothesis that prolonged cigarette smoking is associated with increased risk of colorectal cancer and that this risk may be modified by variation in carcinogen metabolism genes.

Keywords: Enzymes, genetic variation, cancer risk, smoking

#### A4803: Population-based Case-Control Study of Fetal Growth, Gestational Age, and Maternal Breast Cancer

Author: Sarah Nechuta

Source: American Journal of Epidemiology, 172, 8 (October 2010): 962-970

Abstract: Fetal growth or gestational age in a woman's pregnancies may modify pregnancy-related breast cancer risk, yet studies of these exposures are few. The authors conducted a population-based case-control study among parous Michigan women aged  $\leq 50$  years using linked Michigan Cancer Registry (1985-2004) and Michigan livebirth records (1978-2004). Breast cancer cases (n = 7,591) were matched 1:4 to controls (n = 28,382) on maternal birth year and race. Using conditional logistic regression, the authors examined the associations of gestational age (in weeks) and fetal growth (defined using birth weight percentiles for gestational age) in first and last births with breast cancer risk. Having a small-for-gestational-age or large-for-gestational-age infant at a maternal first or last birth was not associated with breast cancer risk, but having a small-for-gestational-age infant at a last birth at  $\geq 30$  years modestly reduced risk: odds ratio = 0.82 (95% confidence interval: 0.68, 0.98). First delivery at  $< 32$  or  $> 41$  weeks also modestly reduced risk: odds ratio = 0.80 (95% confidence interval: 0.62, 1.04) or 0.92 (95% confidence interval: 0.85, 0.99), respectively. In the largest case-control study to date, fetal growth was not associated with overall breast cancer risk in women aged  $\leq 50$ , and there was some evidence for reduced breast cancer risk for early or late gestational age in first births only.

Keywords: Birth weight, breast cancer, gestational age, hormones, pregnancy

#### A4857: Fruit and Vegetable Intake in Relation to Risk of Breast Cancer in the Black Women's Health Study

Author: Deborah A. Boggs

Source: American Journal of Epidemiology, 172, 11 (December 2010): 1268-1279

**Abstract:** The authors prospectively examined the relation of fruit and vegetable intake to breast cancer risk among 51,928 women aged 21–69 years at enrollment in 1995 in the Black Women's Health Study. Dietary intake was assessed by using a validated food frequency questionnaire. Cox proportional hazards models were used to estimate incidence rate ratios and 95% confidence intervals, adjusted for breast cancer risk factors. During 12 years of follow-up, there were 1,268 incident cases of breast cancer. Total fruit, total vegetable, and total fruit and vegetable intakes were not significantly associated with overall risk of breast cancer. However, total vegetable consumption was associated with a decreased risk of estrogen receptor-negative/progesterone receptor-negative breast cancer (incidence rate ratio = 0.57, 95% confidence interval: 0.38, 0.85, for  $\geq 2$  servings/day relative to  $< 4$ /week;  $P_{\text{trend}} = 0.02$ ). In addition, there was some evidence of inverse associations with breast cancer risk overall for cruciferous vegetable intake ( $P_{\text{trend}} = 0.06$ ) and for carrot intake ( $P_{\text{trend}} = 0.02$ ). Study findings suggest that frequent consumption of vegetables is inversely associated with risk of estrogen receptor-negative/progesterone receptor-negative breast cancer, and that specific vegetables may be associated with a decreased risk of breast cancer overall.

**Keywords:** Brassicaceae, breast neoplasms, fruit, vegetables, women's health

**A4873:** Nationwide survey of oncologists regarding treatment-related infertility and fertility preservation in female cancer patients

**Author:** Eric J. Forman

**Source:** *Fertility and Sterility*, 94, 5 (October 2010): 1652-1656

**Abstract:** **Objective:** To survey oncologists regarding their knowledge and practice patterns concerning fertility preservation for female cancer patients. **Design:** An online survey was sent to oncologists at cancer centers ranked by U.S. News & World Report. **Setting:** Oncologists who treat women of reproductive age at academic medical centers. **Patient(s):** None. **Intervention(s):** None. **Main Outcome Measure(s):** Counseling and referral practices of oncologists regarding fertility risks among young women with cancer. **Results:** Most (95%) of the 249 responding oncologists routinely discuss a treatment's impact on fertility; 1,701 surveys were sent. Although 82% have referred patients to reproductive endocrinologists, more than half rarely refer. When planning treatment, 30% rarely consider a woman's desire for fertility. Gynecologic oncologists were more likely to routinely consider fertility compared with other oncologists (93% vs. 60%). Gynecologic oncologists also were more likely to provide a less effective regimen to better preserve fertility (61% vs. 37%). Most oncologists (86%) would be willing to sacrifice less than a 5% reduction in disease-free survival if a regimen offered better fertility outcomes; 36% felt patients would be willing to sacrifice  $> 5\%$ . **Conclusion(s):** Although

most oncologists at academic medical centers discuss the risk of infertility with female patients, referrals to reproductive endocrinologists are rare. Gynecologic oncologists may be more likely than others to consider modifying treatment to preserve fertility. According to oncologists, patients may be willing to sacrifice more in survival than they would.

Keywords: Fertility preservation, survey, infertility, cancer, oncologists

A4874: Cancer risk among infertile women with androgen excess or menstrual disorders (including polycystic ovary syndrome)

Author: Louise A. Brinton

Source: *Fertility and Sterility*, 94, 5 (October 2010): 1787-1792

Abstract: Objective: To define relationships of androgen excesses to cancer risk. Design: Retrospective cohort study. Setting: Five large infertility practices. Patient(s): Among 12,193 women evaluated for infertility during 1965–1988 and traced for cancer incidence through 1999, 2,560 had androgen excess or menstrual disorders; among these, 412 met established criteria for polycystic ovary syndrome. Intervention(s): None. Main Outcome Measure(s): Cancer incidence. Derivation of standardized incidence ratios (SIRs) and 95% confidence intervals (CIs) for cancer risk comparisons with the general population and rate ratios (RRs) for comparisons with other infertility patients. Result(s): Androgen excess/menstrual disorder patients showed significant SIRs for breast (1.31; 95% CI, 1.05–1.62) and uterine (2.02; 95% CI, 1.13–3.34) cancers and melanoma (1.96; 95% CI, 1.12–3.18). Significant associations for breast and uterine cancers were restricted to primary infertility patients (respective SIRs of 1.53 and 3.48). After adjustment for other cancer predictors, the only excess risk was for uterine cancer among primary infertility patients. Compared with women with secondary infertility and no androgen excess/menstrual disorder, those with primary infertility and a disorder had an RR of 1.88 (95% CI, 0.82–4.32). Cancer risks among the women with polycystic ovary syndrome or androgen excess disorders appeared to be similar to those in the more comprehensive group. Conclusion(s): Previous findings linking androgen excess disorders to elevated uterine cancer risks might largely reflect underlying risk profiles.

Keywords: Androgen excess, uterine cancer, breast cancer, ovarian cancer

A4877: Effect of Occult Metastases on Survival in Node-Negative Breast Cancer

Author: Donald L. Weaver

Source: New England journal of medicine, 364, 5 (February 2011): 412-421

**Abstract:** **Background:** Retrospective and observational analyses suggest that occult lymph-node metastases are an important prognostic factor for disease recurrence or survival among patients with breast cancer. Prospective data on clinical outcomes from randomized trials according to sentinel-node involvement have been lacking. **Methods:** We randomly assigned women with breast cancer to sentinel-lymph-node biopsy plus axillary dissection or sentinel-lymph-node biopsy alone. Paraffin-embedded tissue blocks of sentinel lymph nodes obtained from patients with pathologically negative sentinel lymph nodes were centrally evaluated for occult metastases deeper in the blocks. Both routine staining and immunohistochemical staining for cytokeratin were used at two widely spaced additional tissue levels. Treating physicians were unaware of the findings, which were not used for clinical treatment decisions. The initial evaluation at participating sites was designed to detect all macrometastases larger than 2 mm in the greatest dimension. **Results:** Occult metastases were detected in 15.9% (95% confidence interval [CI], 14.7 to 17.1) of 3887 patients. Log-rank tests indicated a significant difference between patients in whom occult metastases were detected and those in whom no occult metastases were detected with respect to overall survival ( $P=0.03$ ), disease-free survival ( $P=0.02$ ), and distant-disease-free interval ( $P=0.04$ ). The corresponding adjusted hazard ratios for death, any outcome event, and distant disease were 1.40 (95% CI, 1.05 to 1.86), 1.31 (95% CI, 1.07 to 1.60), and 1.30 (95% CI, 1.02 to 1.66), respectively. Five-year Kaplan-Meier estimates of overall survival among patients in whom occult metastases were detected and those without detectable metastases were 94.6% and 95.8%, respectively. **Conclusions:** Occult metastases were an independent prognostic variable in patients with sentinel nodes that were negative on initial examination; however, the magnitude of the difference in outcome at 5 years was small (1.2 percentage points). These data do not indicate a clinical benefit of additional evaluation, including immunohistochemical analysis, of initially negative sentinel nodes in patients with breast cancer.

**Keywords:** Breast cancer, occult metastases, survival

## **Child Health Care & Development**

A4772: Can preschool improve child health outcomes? A systematic review

Author: Katina D'Onisea

Source: Social Science & Medicine, 70, 9 (May 2010): 1423-1440

Abstract: Early childhood development interventions (ECDIs) have the potential to bring about wide ranging human capital benefits for children through to adulthood. Less is known, however, about the potential for such interventions to improve population health. The aim of this study was to examine the evidence for child health effects of centre-based preschool intervention programs for healthy 4 year olds, beyond the preschool years. Medline, Embase, ERIC, Psych Info, Sociological Abstracts, the Cochrane Library, C2-SPECTR and the Head Start database were searched using terms relating to preschool and health from 1980 to July 2008, limited to English language publications. Reference lists and the journal Child Development were hand searched for eligible articles missed by the electronic search. There were 37 eligible studies identified. The reviewed studies examined a range of interventions from centre-based preschool alone, to interventions also including parenting programs and/or health services. The study populations were mostly sampled from populations at risk of school failure (76%). Only eight of the 37 studies had a strong methodological rating, 15 were evaluated as at moderate potential risk of bias and 14 as at high potential risk of bias. The review found generally null effects of preschool interventions across a range of health outcomes, however there was some evidence for obesity reduction, greater social competence, improved mental health and crime prevention. We conclude that the great potential for early childhood interventions to improve population health across a range of health outcomes, as anticipated by policy makers worldwide, currently rests on a rather flimsy evidence base. Given the potential and the increasingly large public investment in these interventions, it is imperative that population health researchers, practitioners and policy makers worldwide collaborate to advance this research agenda.

Keywords: Child development, early interventions, education, preschool, children

A4778: Role of neighbourhoods in child growth and development: Does 'place' matter?

Author: Bilal Iqbal Avana and Betty Kirkwoodb

Source: Social Science & Medicine, 71, 1 (July 2010): 102-109

**Abstract:** It is estimated that at least 200 million children – mostly from developing countries – suffer from developmental delays. The study aims to contribute to an understanding of the contextual environment in which a child grows and develops in such setup; and in particular to evaluate the relative contributions of socio-economic status and rural-urban neighbourhoods on growth and psychomotor development. A cross-sectional study was conducted from May to November 2002 in 15 rural and 11 urban communities of Sindh, Pakistan. 1,244 children aged less than 3 years were assessed via home visits using Bayley’s Infant Developmental Scale for psychomotor development, anthropometry and a socio-economic and demographic questionnaire. A socio-economic index was created using principal component analysis, and the study hypotheses explored through hierarchical linear modelling. We found that sub-optimal growth and development were prevalent among the study’s children. Overall the mean psychomotor development (PD) index was 96.0 (SD 16.7), with 23% assessed as having delayed development, and undernourished with 39.8% stunted, 30.9% underweight and 18.1% wasted. Lower socio-economic status and living in a rural rather than urban neighbourhood were all found to have strong associations with lower psychomotor scores and with undernutrition. Rural-urban differences in undernutrition were explained by the lower socio-economic status of families in rural areas. By contrast, rural-urban differences in psychomotor scores remained strong even after controlling for differences in socio-economic status. It was estimated that rural residence accounted for 28% of cases of delayed psychomotor development among study children. Improvements in socio-economic status are vital to achieve optimal growth and development during early childhood. The study draws attention to the importance of taking heed of contextual needs, especially relating to differences between rural and urban neighbourhoods, in the formulation and implementation of early child care and development interventions.

**Keywords:** Pakistan, child development, child malnutrition, rural health, neighbourhood

**A4804:** Longer Breastfeeding is Associated with Increased Lower Body Explosive Strength during Adolescence

**Author:** Enrique G.

**Source:** Journal of Nutrition, 140, 11 (November 2010): 1989-1995

**Abstract:** Our aim in this study was to examine the association between breastfeeding duration and cardiorespiratory fitness, isometric strength, and explosive strength during adolescence. A total of 2567 adolescents (1426 girls) from the Healthy Lifestyle in Europe by Nutrition in Adolescence (HELENA) cross-sectional study aged 12.5–17.5 y were included. Information about duration of any and exclusive breastfeeding was obtained retrospectively by means of a



parental questionnaire. The 20-m shuttle run, handgrip strength, and standing long jump tests were used to assess physical fitness. Significant differences among the categories of breastfeeding duration were tested using ANCOVA after adjusting for a set of potential confounders: gestational and current age, birth weight, sexual maturation, fat mass, fat-free mass, maternal education, parental weight status, country, smoking behavior, and days of vigorous physical activity. Longer breastfeeding (either any or exclusive) was associated with a higher performance in the standing long jump test in both boys and girls ( $P < 0.001$ ), regardless of fat mass, fat-free mass, and the rest of potential confounders. In adolescents who were breastfed for 3–5 mo or  $>6$  mo, the risk of having a standing long jump performance below the 5th percentile was reduced by half compared with those who were never breastfed [odds ratio (OR) = 0.54, 95% CI = 0.30–0.96,  $P < 0.05$ ; and OR = 0.40, 95% CI = 0.22–0.74,  $P < 0.01$ , respectively]. These findings suggest a role of breastfeeding in determining lower body explosive strength during adolescence.

Keywords: Child development, explosives, smoking behavior, nutrition

A4805: Childbearing history, later-life health, and mortality in Germany

Author: Karsten Hank

Source: *Population Studies: A journal of demography*, 64, 3 (November 2010): 275-291

Abstract: Using data from the German Socio-Economic Panel, we investigated the role of childbearing history in later-life health and mortality, paying particular attention to possible differences by sex and region. Higher parity is associated with better self-rated health in West German mothers and fathers aged 50+, but its relationship with East German women's physical health and survival is negative. Early motherhood is paralleled by poorer physical health in West Germany, whereas late motherhood is associated with lower psychological well-being in Eastern Germany. Moreover, among West German women, having had a non-marital first birth is weakly correlated with poorer physical health. Our findings support the notion of biosocial pathways playing an important role in shaping the fertility-health nexus. Specifically, the West German 'male-breadwinner' model of specialization appears to have buffered the stresses associated with childrearing, whereas fertility off the 'normative' life-course track appears to have had adverse effects on women's health in West Germany.

Keywords: Reproductive history, health, mortality, life course, Germany

A4836: Study on Healthcare Infrastructure for Children in Karnataka: A District-wise Analysis

Author: C.M. Lakshmana

Source: Journal of Health Management, 12, 4 (December 2010): 423-443.

Abstract: The major objective of this article is to take stock of the overall healthcare infrastructure for children in the district hospitals in the state of Karnataka. Governmental healthcare initiative in India can be traced back to the year 1951. Interestingly, India was the only country in the world to launch a Family Planning Programme intended to reduce population growth. This was renamed as Family Welfare Programme in 1977. Thereafter, in 1983, the National Health Policy was institutionalised with the objective of reducing Infant Mortality Rate (IMR), Neo Mortality Rate (NMR) and Child Mortality Rate (CMR) by the year 2000. Concurrently, programmes like Prevention of Acute Respiratory Infection (ARI) and Oral Dehydration Therapy (ORT) came into existence in the country. As follow-up of these major initiatives, in the year 1997, a specific programme called Reproductive and Child Health (RCH) became operational in all the districts of the country. As a result of these initiatives, over the years, India has been able to cross a major milestone in reducing IMR, NMR, as well as CMR. According to latest NFHS-3 (National Family Health Survey) report, the IMR, NMR and CMR rates in the country are 57, 39 and 18 respectively. However, the progressive state of Karnataka has always registered lower IMR (43.2), NMR (28.9) and CMR (12.1) than the national average. The present investigation is based on the information collected from children outpatient departments of the district hospitals in Karnataka.

Keywords: Children, health care, District hospitals, children's ward, Karnataka

## Community Health

A2745: Neonatal, Postneonatal, Childhood, and under-5 Mortality for 187 Countries, 1970-2010: A Systematic Analysis of Progress towards Millennium Development Goal 4

Author: Julie Knoll Rajaratnam

Source: Lancet, 375, 9730 (June 2010): 1988-2008

**Abstract:** Previous assessments have highlighted that less than a quarter of countries are on track to achieve Millennium Development Goal 4 (MDG 4), which calls for a two-thirds reduction in mortality in children younger than 5 years between 1990 and 2015. In view of policy initiatives and investments made since 2000, it is important to see if there is acceleration towards the MDG 4 target. We assessed levels and trends in child mortality for 187 countries from 1970 to 2010.

**Methods:** We compiled a database of 16 174 measurements of mortality in children younger than 5 years for 187 countries from 1970 to 2009, by use of data from all available sources, including vital registration systems, summary birth histories in censuses and surveys, and complete birth histories. We used Gaussian process regression to generate estimates of the probability of death between birth and age 5 years. This is the first study that uses Gaussian process regression to estimate child mortality, and this technique has better out-of-sample predictive validity than do previous methods and captures uncertainty caused by sampling and non-sampling error across data types. Neonatal, postneonatal, and childhood mortality was estimated from mortality in children younger than 5 years by use of the 1760 measurements from vital registration systems and complete birth histories that contained specific information about neonatal and postneonatal mortality.

**Findings:** Worldwide mortality in children younger than 5 years has dropped from 11.9 million deaths in 1990 to 7.7 million deaths in 2010, consisting of 3.1 million neonatal deaths, 2.3 million postneonatal deaths, and 2.3 million childhood deaths (deaths in children aged 1-4 years). 33.0% of deaths in children younger than 5 years occur in south Asia and 49.6% occur in sub-Saharan Africa, with less than 1% of deaths occurring in high-income countries. Across 21 regions of the world, rates of neonatal, postneonatal, and childhood mortality are declining. The global decline from 1990 to 2010 is 2.1% per year for neonatal mortality, 2.3% for postneonatal mortality, and 2.2% for childhood mortality. In 13 regions of the world, including all regions in sub-Saharan Africa, there is evidence of accelerating declines from 2000 to 2010 compared with 1990 to 2000. Within sub-Saharan Africa, rates of decline have increased by more than 1% in Angola, Botswana, Cameroon, Congo, Democratic Republic of the Congo, Kenya, Lesotho, Liberia, Rwanda, Senegal, Sierra Leone, Swaziland, and The Gambia.

**Interpretation:** Robust measurement of mortality in children younger than 5 years shows that accelerating declines are occurring in several low-income countries. These positive developments deserve attention and might need enhanced policy attention and resources.

**Funding:** Bill & Melinda Gates Foundation.

Keywords: Millennium development goals, policy initiatives, predictive validity, neonatal deaths, postneonatal mortalities

A4771: Community attachment, neighborhood context, and sex worker use among Hispanic migrants in Durham, North Carolina, USA

Author: Emilio A. Parrado

Source: *Social Science and Medicine*, 70, 7 (March 2010): 1059-1069

Abstract: We build on social disorganization theory to formulate and test a hierarchical model of sex worker use among male Hispanic immigrants in the Durham, North Carolina area. The study considers both individual and neighborhood level dimensions of community organization as central factors affecting immigrants' exposure to sexual risks. At the individual level, we find support for the systemic model of community attachment, as time in the U.S. affects sex worker use, although the pattern is non-linear. At the neighborhood level we find that structural social disorganization, external social disorganization (or broken windows), and collective efficacy all correlate with sex worker use in the expected direction. In addition, we extend power-control theory to the community level to show that neighborhood gender imbalances are a central dimension of migrant men's heightened sex worker use, a factor not systematically considered in research on neighborhoods and health. When taken together, collective efficacy and gender imbalances stand out as central mediators between other dimensions of social disorder and sex worker use. Overall, we stress the importance of considering the neighborhood context of reception as an added dimension for understanding and improving immigrant health.

Keywords: HIV risks, migration, social disorganization, neighborhoods and health, USA

A4818: Iodine intake in a population of pregnant women: INMA mother and child cohort study, Spain

Author: M Murcia

Source: *Journal of Epidemiology and Community Health*, 64, 12 (December 2010): 1094-1099

Abstract: Background: Monitoring iodine status during pregnancy is essential to prevent iodine-related disorders. The objectives of this study are to estimate iodine intake and excretion, to assess their association and to evaluate the compliance of the recommendations in a multicentre cohort of pregnant women. Methods: Cross-sectional data on maternal iodine

nutritional status, compiled between weeks 8 and 22 of gestation in three Spanish areas (Valencia, Gipuzkoa and Sabadell), were analysed. Information on iodine intake from diet, salt and supplements was estimated through questionnaires. Spot urine samples were analysed for urinary iodine concentration (UIC). Tobit regression analysis was used to assess the association between iodine intake and UIC. Results: 1522 women were included in the study. Median UIC was 134 (IQR 80–218)  $\mu\text{g/l}$  in Valencia, 168 (IQR 108–272)  $\mu\text{g/l}$  in Gipuzkoa and 94 (IQR 57–151)  $\mu\text{g/l}$  in Sabadell. 48.9% of Valencian women consumed iodine supplements, 93.3% in Gipuzkoa and 11.0% in Sabadell. Prevalence of iodised salt consumption was 50.5% in the whole sample. UIC was associated with intake of supplements, iodised salt, dietary iodine and water. UIC levels were lower than expected according to the estimated iodine intake. Conclusion: Median UIC reflected iodine deficiency according to WHO reference levels, except in Gipuzkoa where supplements are widely consumed. It is necessary to strengthen iodised salt consumption since it is already far from the objective proposed of coverage of 90% of households. More data would be valuable to assess the correspondence between iodine intake and excretion during pregnancy.

Keywords: Iodine, pregnant women, INMA mother

## Demography & Statistics

A4782: Fever, malaria and primary repetition rates amongst school children in Mali: Combining demographic and health surveys (DHS) with spatial malariological measures

Author: Josselin Thuillieza

Source: Social Science & Medicine, 71, 2 (2010): 314-323

Abstract: This study estimates the relative importance to child school performance (indicated by primary repetition) of fever, malaria and some social determinants at the cluster level. It uses individual, household and cluster surveys from the Demographic and Health Surveys conducted in Mali in 2001 and 2006 (MDHS). It also provides a discussion about the use of fever as an indicator of malaria in large cross-sectional surveys by comparing the 2001 and 2006 MDHS, which were realised during two different transmission seasons (dry and rainy seasons). Geographic Information System and DHS Global Positioning System datasets were used to extract age-specific malariological measures from reliable maps of the prevalence and transmission intensity of malaria. We show that fever is not a reliable proxy for malaria at the cluster level, and we recommend the use of spatial measures of malaria prevalence for future research. Cross-sectional regression analysis on data aggregated to the group-level suggests that a higher prevalence of malaria in a community is linked to higher primary repetition rates, but confirmatory studies are needed.

Keywords: Fever, malaria, primary education, Mali, children

A4798: Barriers to increasing hospital birth rates in rural Shanxi Province, China

Author: Yu Gao

Source: Reproductive health matters, 18, 36 (November 2010): 35-45

Abstract: This study investigated the reasons for continued high rates of home births in rural Shanxi Province, northern China, despite a national programme designed to encourage hospital deliveries. We conducted semi-structured interviews with 30 home-birthing women in five rural counties and drew on hospital audit data, observations and interviews with local health workers from a larger study. Multiple barriers were identified, including economic and geographic factors and poor quality of maternity care. Women's main reasons for not having institutional births were financial difficulties (n=26); poor quality of antenatal care (n=13);

transport problems (n=11); dissatisfaction with hospital care expressed as fear of being in hospital (n=10); convenience of being at home and continuity of care provided by traditional birth attendants (TBAs) (n=10); and belief that the birth would be normal (n=6). These barriers must all be overcome to improve access to and acceptability of hospital birth. To ensure that the national policy of improving the hospital birth rate is implemented effectively, the government needs to improve the quality of antenatal and delivery care, increase financial subsidies to reduce out-of-pocket payments, remove transport barriers, and where hospital birth is not available in remote areas, consider allowing skilled attendance at home on an outreach basis and integrate TBAs into the health system.

Keywords: Childbirth, traditional birth attendants, privatisation, health policy and programmes, China

A4808: Why are death rates higher in rural areas? Evidence from the Australian Longitudinal Study on Women's Health

Author: Annette Dobson

Source: Australian and New Zealand Journal of Public Health, 34, 6 (December 2010): 624–628

Abstract: Objective: Death rates in Australia are higher in rural than urban areas. Our objective is to examine causes of death of urban and rural women to gain insight into potential explanations for differences in mortality. Methods: Participants were a community-based random sample of women (n=12,400) aged 70–75 years when recruited in 1996 to the Australian Longitudinal Study on Women's Health. The main variables used were: area of residence classified according to the Australian Standard Geographic Classification (ASGC), survival to 31 October 2006, cause of death, selected risk factors. Results: The total number of deaths at 31 October 2006 was 2,803 and total number of women still alive was 9,597. Mortality was higher for women in rural areas overall (hazard ratio (HR)=1.09; 95% confidence interval (CI): 1.01–1.18) and for most major causes of death compared to urban women. In particular, death rates were substantially higher for lung cancer (HR=1.52; 95% CI: 1.03–2.25) and chronic obstructive pulmonary disease (COPD) (HR=1.83; 95% CI: 1.25–2.69). Nevertheless there were almost no differences among the groups for current smoking or smoking history. Prevalence of overweight and obesity was slightly higher and levels of physical activity lower among women in remote areas. Conclusion: There is little evidence that differences in mortality are due to the risk factors considered. Alternative explanations such as inequities in health services and environmental hazards should be considered. Implications: People in rural areas may suffer from a double disadvantage of poorer health services and exposure to health hazards that are less common in urban areas.

Keywords: Women's health, rural health, mortality, Australia

## Diabetes

A4862: Relationships between Diabetes and Medical and Dental Care Costs: Findings from a Worksite Cohort Study in Japan

Author: Reiko IDE

Source: *Industrial Health*, 48, 6 (November 2010): 857-863

**Abstract:** The purpose of this study was to evaluate the relationships between diabetes and medical and dental care costs from a 5-yr prospective observation of Japanese workers. The data were derived from health and dental examinations and health insurance claims of 4,086 workers aged 40-54 yr. At baseline, the subjects were assigned to four categories: known diabetes; undiagnosed diabetes; impaired fasting glucose (IFG); and non-diabetic. The differences in health care costs among the non-diabetics, IFG and undiagnosed diabetes groups were not seen at baseline, but the costs incurred by the subjects with undiagnosed diabetes substantially increased thereafter. Over 5 yr of the study period, compared with the non-diabetic group, subjects with known diabetes incurred 3.9- and 2.9-fold higher annual inpatient and outpatient costs, respectively, while subjects in the undiagnosed diabetes group incurred 3.0- and 1.6-fold higher costs, respectively. There were no significant associations between annual dental care costs and diabetic status. The excess costs of medical care among subjects with diabetes were attributable to diabetes itself, heart disease and cerebrovascular disease, but not cancer. Among middle-aged workers, diabetics incurred significantly greater medical care costs than non-diabetics, whereas IFG was not associated with higher costs.

**Keywords:** Diabetes, Impaired fasting glucose, Medical care costs, Dental care costs, Longitudinal study



## Disease

A4750: Cholera in India: An Analysis of Reports, 1997–2006

Author: S. Kanungo

Source: Bulletin of the World Health Organization, 88, 3 (March 2010): 185-191

**Abstract:** **Objective:** To more accurately define the annual incidence of cholera in India, believed to be higher than reported to the World Health Organization (WHO). **Methods:** We searched the biomedical literature to extract data on the cases of cholera reported in India from 1997 to 2006 and compared the numbers found to those reported annually to WHO over the same period. The latter were obtained from WHO's annual summaries of reported cholera cases and National health profile 2006, published by India's Central Bureau of Health Intelligence. **Findings:** Of India's 35 states or union territories, 21 reported cholera cases during at least one year between 1997 and 2006. The state of West Bengal reported cases during all 10 years, while the state of Maharashtra and the union territory of Delhi reported cases during nine, and Orissa during seven. There were 68 outbreaks in 18 states, and 222 038 cases were detected overall. This figure is about six times higher than the number reported to WHO (37 783) over the same period. The states of Orissa, West Bengal, Andaman and Nicobar Islands, Assam and Chhattisgarh accounted for 91% of all outbreak-related cases. **Conclusion:** The reporting of cholera cases in India is incomplete and the methods used to keep statistics on cholera incidence are inadequate. Although the data are sparse and heterogeneous, cholera notification in India is highly deficient.

**Keywords:** India, health organization, biomedical literature, health profiles, West Bengal, cholera cases, Maharashtra

A4761: Estrogen and oxidative stress: A novel mechanism that may increase the risk for cardiovascular disease in women

Author: Richard E. Whitea

Source: Steroids, 75, 11 (November 2010): 788-793

**Abstract:** Although early studies demonstrated that exogenous estrogen lowered a woman's risk of cardiovascular disease, recent trials indicate that HRT actually increases the risk of coronary heart disease or stroke. However, there is no clear explanation for this discrepancy. Is estrogen a helpful or a harmful hormone in terms of cardiovascular function? This review discusses some recent findings that propose a novel mechanism which may shed significant

light upon this controversy. We propose that nitric oxide synthase (NOS) expressed within the vascular wall is a target of estrogen action. Under normal conditions in younger women, the primary product of estrogen action is NO, which produces a number of beneficial effects on vascular biology. As a woman ages, however, there is evidence for loss of important molecules essential for NO production (e.g., tetrahydrobiopterin, l-arginine). As these molecules are depleted, NOS becomes increasingly “uncoupled” from NO production, and instead produces superoxide, a dangerous reactive oxygen species. We propose that a similar uncoupling and reversal of estrogen response occurs in diabetes. Therefore, we propose that estrogen is neither “good” nor “bad”, but simply stimulates NOS activity. It is the biochemical environment around NOS that will determine whether estrogen produces a beneficial (NO) or deleterious (superoxide) product, and can account for this dual and opposite nature of estrogen pharmacology. Further, this molecular mechanism is consistent with recent analyses revealing that HRT produces salutary effects in younger women, but mainly increases the risk of cardiovascular dysfunction in older postmenopausal women.

Keywords: Estrogen, hormone replacement therapy, coronary, nitric oxide, superoxide

A4792: Short and long sleep are positively associated with obesity, diabetes, hypertension, and cardiovascular disease among adults in the United States

Author: Orfeu M. Buxton and Enrico Marcelli

Source: *Social Science & Medicine*, 71, 5 (September 2010): 1027-1036

Abstract: Research associates short (and to a lesser extent long) sleep duration with obesity, diabetes, and cardiovascular disease; and although 7–8 h of sleep seems to confer the least health risk, these findings are often based on non-representative data. We hypothesize that short sleep (<7 h) and long sleep (>8 h) are positively associated with the risk of obesity, diabetes, hypertension, and cardiovascular disease; and analyze 2004–2005 US National Health Interview Survey data (n = 56,507 observations, adults 18–85) to test this. We employ multilevel logistic regression, simultaneously controlling for individual characteristics (e.g., ethnoracial group, gender, age, education), other health behaviors (e.g., exercise, smoking), family environment (e.g., income, size, education) and geographic context (e.g., census region). Our model correctly classified at least 76% of adults on each of the outcomes studied, and sleep duration was frequently more strongly associated with these health risks than other covariates. These findings suggest a 7–8 h sleep duration directly and indirectly reduces chronic disease risk.

Keywords: USA, cardiovascular diseases, diabetes, hypertension, sleep disorders, sleep duration

A4793: Disability and self-rated health among older women and men in rural Guatemala: The role of obesity and chronic conditions

Author: Kathryn M. Yount

Source: *Social Science & Medicine*, 71, 8 (October 2010): 1418-1427

Abstract: Unprecedented population aging in poorer settings is coinciding with the rapid spread of obesity and other chronic conditions. These conditions predict disability and poor self-rated health and often are more prevalent in women than men. Thus, gender gaps in obesity and other chronic conditions may account for older women's greater disability and worse self-rated health in poor, rural populations, where aging, obesity, and chronic conditions are rapidly emerging. In a survey of 604 adults 50 years and older in rural Guatemala, we assessed whether gender gaps in obesity and other chronic conditions accounted for gender gaps in disability and self-rated health. Obesity strongly predicted gross mobility (GM) disability, and the number of chronic conditions strongly predicted all outcomes, especially in women. Controlling for gender gaps in body-mass index (BMI) and especially the number of chronic conditions eliminated gender gaps in GM disability, and controlling for gender gaps in the number of chronic conditions eliminated gender gaps in self-rated health. We recommend conducting longitudinal cohort studies to explore interventions that may mitigate adult obesity and chronic conditions among poor, rural older adults. Such interventions also may reduce gender gaps in later-life disability and self-rated health.

Keywords: Guatemala, chronic disease, disability, obesity, population aging

A4794: Christmas and New Year as risk factors for death

Author: David Phillips

Source: *Social Science & Medicine*, 71, 8 (October 2010): 1463-1471

Abstract: This paper poses three questions: (1) Does mortality from natural causes spike around Christmas and New Year? (2) If so, does this spike exist for all major disease groups or only specialized groups? (3) If twin holiday spikes exist, need this imply that Christmas and New Year are risk factors for death? To answer these questions, we used all official U.S. death certificates, 1979–2004 (n = 57,451,944) in various hospital settings to examine daily mortality levels around Christmas and New Year. We measured the Christmas increase by comparing observed deaths with expected deaths in the week starting on Christmas. The New Year increase was measured similarly. The expected number of deaths was determined by locally weighted regression, given the null hypothesis that mortality is affected by seasons and trend but not by

holidays. On Christmas and New Year, mortality from natural causes spikes in dead-on-arrival (DOA) and emergency department (ED) settings. There are more DOA/ED deaths on 12/25, 12/26, and 1/1 than on any other day. In contrast, deaths in non-DOA/ED settings display no holiday spikes. For DOA/ED settings, there are holiday spikes for each of the top five disease groups (circulatory diseases; neoplasms; respiratory diseases; endocrine/nutritional/metabolic diseases; digestive diseases). For all settings combined, there are holiday spikes for most major disease groups and for all demographic groups, except children. In the two weeks starting with Christmas, there is an excess of 42,325 deaths from natural causes above and beyond the normal winter increase. Christmas and New Year appear to be risk factors for deaths from many diseases. We tested nine possible explanations for these risk factors, but further research is needed.

Keywords: USA, seasonal, holidays, disease groups, substance abuse, mortality

#### A4823: Prenatal Exposure to Cigarette Smoke and Benign Breast Disease

Author: Liu, Tianlia

Source: *Epidemiology*, 21, 5 (September 2010): 736-743

**Abstract:** **Background:** Experimental studies have indicated that cigarette smoke contains potential human breast toxins and that the toxic influence during the prenatal period is greater than that of later life. **Methods:** The study sample includes 810 women whose mothers enrolled in the Collaborative Perinatal Project between 1959 and 1966 in Boston and Providence. These women have been followed from gestation until middle-age. Information on maternal smoking during pregnancy was prospectively collected during prenatal visits. We identified 146 women who had been told by a health professional that they had benign breast disease. Log-binomial regression models with Generalized Estimating Equation methods were employed to quantify the association between maternal smoking and benign breast disease among offspring. **Results:** There was a positive association between maternal smoking during pregnancy and the risk of benign breast disease among offspring. In particular, women whose mother smoked 1 pack or more per day were 1.7 times more likely to develop benign breast disease (relative risk = 1.7 [95% confidence interval = 1.2-2.5]) in comparison with women whose mother never smoked during pregnancy. The association was independent of women's age, race, education, age at menarche, parity, obesity, birth weight, and maternal age at pregnancy. **Conclusions:** Exposure to heavy cigarette smoking during the prenatal period was associated with an increased risk of benign breast disease in adulthood.

Keywords: Breast disease, disease, smoke

A4826: Study of Clinical profile of patients of hypothyroid heart disease done at civil hospital Ahmedabad

Author: Kaji B C,

Source: The Indian Practitioner, 63, 12 (December 2010): 777-780

Abstract: The present study is an attempt to evaluate clinical profile, incidence of cardiovascular complications, age and sex incidence, lipid profile abnormalities in overt and subclinical hypothyroidism. We studied 50 randomly selected patients of Hypothyroidism in civil hospital Ahmedabad between May 2005 ad April 2007. The diagnosis of hypothyroidism was based on thyroid function test. Exclusion criteria: (1) Age>12 years (2) Secondary hypothyroidism (3) Associated DM, VHD, RHD, Congenital heart disease. Hypothyroidism is found to be common among female as compared to male; the mean age in male was higher than females in both groups. We found that generalized weakness, weight gains were common symptoms and puffiness of face, pallor were common signs, which are non-specific. Heart diseases are frequently seen with hypothyroidism. Hypertrophic cardiomyopathy was seen in 3 (13.6%) patients. Pericardial effusion with high fluid cholesterol content develops gradually in long standing hypothyroidism. Bradycardia was seen in 03 (13.6%) patients. My study had significantly ( $p<0.05$ ) higher incidence of hypertension and ischaemic heart disease in subclinical than overt hypothyroidism. Elevated serum Cholesterol, LDL and Triglyceride found in both subclinical and overt hypothyroidism are independent risk factor for atherosclerosis. All hypothyroid related cardiac complications are reversible, early identification and optimal regular thyroxin replacement remarkably improves the morbidity and mortality from cardiac complications associated with hypothyroidism.

Keywords: Hypothyroidism, heart disease, subclinical

A4832: Childhood leprosy: Profiles from a leprosy referral hospital in West Bengal, India

Author: Horo

Source: Indian Journal of Leprosy, 82, 1 (Jan-March 2010): 33-37

Abstract: Monitoring childhood leprosy in terms of incidence and occurrence of deformities are crucial for better control and understanding the transmission of the disease. In this paper, a profile of all new untreated leprosy patients below 15 years of age who reported at a Leprosy Referral Centre in West Bengal during 2004-2006 are described. Of 151 children studied, 84 (55.6%) were males, 33% were multibacillary and of them, 30% were smear positive. 16% had already developed graded 2 disability (WHO). Multiple nerve involvement was seen in a quarter

of children. These findings highlight the seriousness of leprosy among children and the great need to address these issues urgently. Awareness, active case detection especially among contacts and motivation are the essential needs of the hour to prevent tragedy of deformed children due to a totally manageable disease.

Keywords: Childhood leprosy, grade 2 disability, multiple nerve involvement, West Bengal, Leprosy

A4833: Salvage surgery for severely deformed hands in leprosy

Author: A. Salafia, G. Chauhan

Source: Indian Journal of Leprosy, 82, 1 (Jan-March 2010): 39-47

Abstract: Results of surgery of nine cases of severely deformed hands (considered “useless/hopeless”) and the techniques used in each of them to achieve a ‘fictional hand’ are described. The techniques used were: Pollicization of Prof G Brunelli, Cocked-hat technique of Gillies, JESS distractor of BB Joshi. All patients had good results after surgery. However, two patients developed some deformity because of insensitive hand; This type of surgery is not done routinely but authors would like to encourage other surgeons to try these techniques as hands of a number of patients can be made ‘fictional’ by any of these procedures.

Keywords: Mitten-hand, Cocked-hat surgery, JESS distractors, leprosy, salvage surgery

A4850: Heart rate influence on incidence of cardiovascular disease among adults in China

Author: Qunxia Mao

Source: International Journal of Epidemiology, 39, 6 (December 2010): 1638-1646

Abstract: Background Higher heart rate is associated with mortality, whereas its association with clinical cardiovascular events is much more challenged. Methods A prospective study was conducted for 169 871 Chinese adults  $\geq 40$  years in 1991 and followed during 1999–2000 with a response rate of 93.4%. Hazard ratios (HRs) were estimated by Cox proportional hazard regression model. Cardiovascular disease (CVD) was defined as diagnosis of acute myocardial infarction or stroke or death due to CVD (International Classification of Diseases, Ninth Revision: 390.0–398.9, 401.0–429.9 and 430.0–438.9). Results After an average of 8.3 years’ follow-up (836 811 person-years), 6837 participants (3932 men, 2905 women) developed CVD. Compared with the participants with heart rate 60–74 beats per minute (bpm), heart rate 75–

89 and  $\geq 90$  bpm in men increased the risk of CVD after multivariate adjustment, with corresponding HRs [95% confidence intervals (CIs)] 1.12 (1.04–1.20) and 1.32 (1.18–1.47). Heart rate  $\geq 90$  bpm increased women's risk of CVD with HR (95% CI) 1.23 (1.09–1.38). Heart rate  $\geq 75$  bpm in men increased the risk of heart disease. Heart rate  $\geq 90$  bpm increased the risks of coronary heart disease (CHD) and stroke in men, and the risks of heart disease and CHD in women. Conclusions Elevated heart rate was associated with high CVD incidence in Chinese adults. This suggests that higher heart rate might be a risk marker for CVD in Chinese adults.

Keywords: Heart rate, cardiovascular diseases, prospective study, China

#### A4853: Aircraft Noise, Air Pollution, and Mortality from Myocardial Infarction

Author: Anke Huss

Source: *Epidemiology*, 21, 6 (November 2010): 829-836

**Abstract:** **Objective:** Myocardial infarction has been associated with both transportation noise and air pollution. We examined residential exposure to aircraft noise and mortality from myocardial infarction, taking air pollution into account. **Methods:** We analyzed the Swiss National Cohort, which includes geocoded information on residence. Exposure to aircraft noise and air pollution was determined based on geospatial noise and air-pollution (PM<sub>10</sub>) models and distance to major roads. We used Cox proportional hazard models, with age as the timescale. We compared the risk of death across categories of A-weighted sound pressure levels (dB(A)) and by duration of living in exposed corridors, adjusting for PM<sub>10</sub> levels, distance to major roads, sex, education, and socioeconomic position of the municipality. **Results:** We analyzed 4.6 million persons older than 30 years who were followed from near the end of 2000 through December 2005, including 15,532 deaths from myocardial infarction (ICD-10 codes I 21, I 22). Mortality increased with increasing level and duration of aircraft noise. The adjusted hazard ratio comparing  $\geq 60$  dB(A) with  $< 45$  dB(A) was 1.3 (95% confidence interval = 0.96-1.7) overall, and 1.5 (1.0-2.2) in persons who had lived at the same place for at least 15 years. None of the other endpoints (mortality from all causes, all circulatory disease, cerebrovascular disease, stroke, and lung cancer) was associated with aircraft noise. **Conclusion:** Aircraft noise was associated with mortality from myocardial infarction, with a dose-response relationship for level and duration of exposure. The association does not appear to be explained by exposure to particulate matter air pollution, education, or socioeconomic status of the municipality.

Keywords: Air pollution, mortality, aircraft noise, cardiovascular disease

A4854: Breast-feeding and Childhood Hospitalizations for Infections

Author: Tarrant Marie

Source: *Epidemiology*, 21, 6 (November 2010): 847-854

**Abstract:** **Background:** Infectious disease is a leading cause of morbidity and hospitalization for infants and children. During infancy, breast-feeding protects against infectious diseases, particularly respiratory infections, gastrointestinal infections, and otitis media. Little is known about the longer-term impact of breast-feeding on infectious disease in children. **Methods:** We investigated the relationship between infant feeding and childhood hospitalizations from respiratory and gastrointestinal infections in a population-based birth cohort of 8327 children born in 1997 and followed for 8 years. The main outcomes were public hospital admissions for respiratory infections, gastrointestinal infections, and all infectious diseases. Cox regression was used to assess time to first hospitalization. **Results:** Breast-feeding only (no formula-feeding) for 3 or more months was associated with a lower risk of hospital admission in the first 6 months of life for respiratory infections (hazard ratio = 0.64 [95% confidence interval = 0.42–0.97]), gastrointestinal infections (0.51 [0.25–1.05]), and any infection (0.61 [0.44–0.85]), adjusted for sex, type of hospital at birth, and household income. Partial breast-feeding (both breast-feeding and formula-feeding) in the first 3 months also reduced hospitalizations from infections but with smaller effect sizes. Beyond 6 months of age, there was no association between breast-feeding status at 3 months and hospitalization for infectious disease. **Conclusions:** Giving breast milk and no formula for at least 3 months substantially reduced hospital admissions for many infectious diseases in the first 6 months of life, when children are most vulnerable.

**Keywords:** Breast-feeding, childhood hospitalization, Infectious disease

A4864: Aircraft Noise, Air pollution and Mortality from Myocardial Infarction

Author: Anke Huss

Source: *Epidemiology*, 21, 6 (November 2010): 829-836

**Abstract:** **Objective:** Myocardial infarction has been associated with both transportation noise and air pollution. We examined residential exposure to aircraft noise and mortality from myocardial infarction, taking air pollution into account. **Methods:** We analyzed the Swiss National Cohort, which includes geocoded information on residence. Exposure to aircraft noise and air pollution was determined based on geospatial noise and air pollution (PM<sub>10</sub>) models and distance to major roads. We used Cox proportional hazard models, with age as the timescale. We compared the risk of death across categories of A-weighted sound pressure levels (dB (A))



and by duration of living in exposed corridors, adjusting for PM<sub>10</sub> levels, distance to major roads, sex, education, and socioeconomic position of the municipality. Results: We analyzed 4.6 million persons older than 30 years who were followed from near the end of 2000 through December 2005, including 15,532 deaths from myocardial infarction (ICD-10 codes I 21, I 22). Mortality increased with increasing level and duration of aircraft noise. The adjusted hazard ratio comparing  $\geq 60$  dB (A) with  $< 45$  dB (A) was 1.3 (95% confidence interval=0.96-1.7) overall, and 1.5 (1.0-2.2) in persons who had lived at the same place for at least 15 years. None of the other endpoints (mortality from all causes, all circulatory disease, cerebrovascular disease, and stroke and lung cancer) was associated with aircraft noise. Conclusion: Aircraft noise was associated with mortality from myocardial infarction, with a dose-response relationship for level and duration of exposure. The association does not appear to be explained by exposure to particulate matter air pollution education, or socioeconomic status of the municipality.

Keywords: Aircraft noise, air pollution, myocardial infarction

A4865: Breast-feeding and Childhood Hospitalizations for Infections

Author: Marie Tarrant

Source: *Epidemiology*, 21, 6 (November 2010): 847-854

Abstract: Background: Infectious disease is a leading cause of morbidity and hospitalization for infants and children. During infancy, breast-feeding protects against infectious diseases, particularly respiratory infections, gastrointestinal infections and otitis media. Little is known about the longer-term impact of breast-feeding on infectious disease in children. Methods: We investigated the relationship between infant feeding and childhood hospitalizations from respiratory and gastrointestinal infections in a population-based birth cohort of 8327 children born in 1997 and followed for 8 years. The main outcomes were public hospital admissions for respiratory infections, gastrointestinal infections, and all infectious diseases. Cox regression was used to assess time to first hospitalization. Results: Breast-feeding only (non formula-feeding) for 3 or more months was associated with a lower risk of hospital admission in the first 6 months of life for respiratory infections (hazard ratio=0.64[95% confidence interval=0.42-0.97]), gastrointestinal infections (0.51[0.25-1.05]), and any infection (0.61[0.44-0.85]), adjusted for sex, type of hospital at birth, and household income. Partial breast-feeding (both breast-feeding and formula-feeding) in the first 3 months also reduced hospitalizations from infections but with smaller effect sizes. Beyond 6 months of age, there was no association between breast-feeding status at 3 months and hospitalization for infectious disease. Conclusions: Giving breast milk and no formula for at least 3 months substantially reduced hospital admissions for many infectious diseases in the first 6 months of life, when children are most vulnerable.

Keywords: Breast feeding, childhood hospitalization, infections

A4878: Efficacy of Quadrivalent HPV Vaccine against HPV Infection and Disease in Males

Author: Anna R. Giuliano

Source: New England journal of medicine, 364, 5 (February 2011): 401-411

Abstract: Background: Infection with human papillomavirus (HPV) and diseases caused by HPV are common in boys and men. We report on the safety of a quadrivalent vaccine (active against HPV types 6, 11, 16, and 18) and on its efficacy in preventing the development of external genital lesions and anogenital HPV infection in boys and men. Methods: We enrolled 4065 healthy boys and men 16 to 26 years of age, from 18 countries in a randomized, placebo-controlled, double-blind trial. The primary efficacy objective was to show that the quadrivalent HPV vaccine reduced the incidence of external genital lesions related to HPV-6, 11, 16, or 18. Efficacy analyses were conducted in a per-protocol population, in which subjects received all three vaccinations and were negative for relevant HPV types at enrollment, and in an intention-to-treat population, in which subjects received vaccine or placebo, regardless of baseline HPV status. Results: In the intention-to-treat population, 36 external genital lesions were seen in the vaccine group as compared with 89 in the placebo group, for an observed efficacy of 60.2% (95% confidence interval [CI], 40.8 to 73.8); the efficacy was 65.5% (95% CI, 45.8 to 78.6) for lesions related to HPV-6, 11, 16, or 18. In the per-protocol population, efficacy against lesions related to HPV-6, 11, 16, or 18 was 90.4% (95% CI, 69.2 to 98.1). Efficacy with respect to persistent infection with HPV-6, 11, 16, or 18 and detection of related DNA at any time was 47.8% (95% CI, 36.0 to 57.6) and 27.1% (95% CI, 16.6 to 36.3), respectively, in the intention-to-treat population and 85.6% (97.5% CI, 73.4 to 92.9) and 44.7% (95% CI, 31.5 to 55.6) in the per-protocol population. Injection-site pain was significantly more frequent among subjects receiving quadrivalent HPV vaccine than among those receiving placebo (57% vs. 51%,  $P < 0.001$ ). Conclusions: Quadrivalent HPV vaccine prevents infection with HPV-6, 11, 16, and 18 and the development of related external genital lesions in males 16 to 26 years of age.

Keywords: HPV vaccine, quadrivalent vaccine, vaccine, HPV infection

A4880: Prereferral rectal artesunate for treatment of severe childhood malaria: a cost-effectiveness analysis

Author: Yesim Tozan

Source: Lancet, 376, 9756 (December 4-10, 2010): 1910-1915

**Abstract:** **Background:** Severely ill patients with malaria with vomiting, prostration, and altered consciousness cannot be treated orally and need injections. In rural areas, access to health facilities that provide parenteral antimalarial treatment is poor. Safe and effective treatment of most severe malaria cases is delayed or not achieved. Rectal artesunate interrupts disease progression by rapidly reducing parasite density, but should be followed by further antimalarial treatment. We estimated the cost-effectiveness of community-based prereferral artesunate treatment of children suspected to have severe malaria in areas with poor access to formal health care. **Methods:** We assessed the cost-effectiveness (in international dollars) of the intervention from the provider perspective. We studied a cohort of 1000 newborn babies until 5 years of age. The analysis assessed how the cost-effectiveness results changed with low (25%), moderate (50%), high (75%), and full (100%) referral compliance and intervention uptake. **Findings:** At low intervention uptake and referral compliance (25%), the intervention was estimated to avert 19 disability-adjusted life-years (DALYs; 95% CI 16—21) and to cost I\$1173 (95% CI 1050—1297) per DALY averted. Under the full uptake and compliance scenario (100%), the intervention could avert 967 DALYs (884—1050) at a cost of I\$77 (73—81) per DALY averted. **Interpretation:** Prereferral artesunate treatment is a cost-effective, life-saving intervention, which can substantially improve the management of severe childhood malaria in rural African settings in which programmes for community health workers are in place.

**Keywords:** Malaria, childhood malaria, prereferral artesunate treatment

## **Domestic Violence**

A4883: Domestic violence against women and their mental health status in a colony in Delhi

Author: Alka S Vachher and A K Sharma

Source: Indian Journal of Community Medicine, 35, 3 (2010): 403-405

**Abstract:** Background: Violence against women is a major public health and human rights issue in the world today. This study was conducted to assess the consequences of domestic violence on the mental health of women of reproductive age group. Materials and Methods: A community-based, cross-sectional study was conducted in Raj Nagar- I, urban locality in west Delhi near Palam. 350 women of 15-49 years age group residing in the community were selected by stratified random sampling. These women were administered an interview schedule adapted from WHO multi-country study on women's health and domestic violence. They were assessed for the presence of domestic violence. Mental health status of these women was estimated by using self-reporting questionnaire 20. Data were analyzed using SPSS 12 software. The test applied was chi square test for proportion and binary logistic regression. Results: 42.8% of the women reported one or the other types of violence. 34.9% of the women reported either physical or sexual violence ever in life. 29.1% of the women reported either physical or sexual violence in past 1 year (current violence). 12% of the women reported mental ill health. Women who had experienced domestic violence were more likely to report mental ill health status and suicidal tendencies as compared to women who had not experienced violence. Conclusion: Domestic violence is associated with mental ill health.

**Keywords:** Domestic violence, mental health, Delhi

## **Drugs and Drugs Policy**

A4856: Low Incidences of Human Immunodeficiency Virus and Hepatitis C Virus Infection and Declining Risk Behaviors in a Cohort of Injection Drug Users in Chennai, India

Author: Sunil Suhas Solomon

Source: American Journal of Epidemiology, 172, 11 (December 2010): 1259-1267

Abstract: The authors characterized human immunodeficiency virus (HIV) and hepatitis C virus (HCV) incidence and prospective changes in self-reported risk behavior over 2 years among 1,158 injection drug users (IDUs) recruited in Chennai, India, in 2005–2006. At baseline, HIV prevalence was 25.3%, and HCV prevalence was 54.5%. Seropositive persons with prevalent HIV infection were used to estimate baseline HIV incidence by means of the Calypte HIV-1 BED Incidence EIA (Calypte Biomedical Corporation, Portland, Oregon). Longitudinal HIV and HCV incidence were measured among 865 HIV-negative IDUs and 519 HCV antibody-negative IDUs followed semiannually for 2 years. Participants received pre- and posttest risk reduction counseling at each visit. Estimated HIV incidence at baseline was 2.95 per 100 person-years (95% confidence interval (CI): 1.21, 4.69) by BED assay; observed HIV incidence over 1,262 person-years was 0.48 per 100 person-years (95% CI: 0.17, 1.03). HCV incidence over 645 person-years was 1.71 per 100 person-years (95% CI: 0.85, 3.03). Self-reported risk behaviors declined significantly over time, from 100% of participants reporting drug injection at baseline to 11% at 24 months. In this cohort with high HIV and HCV prevalence at enrollment, the authors observed low incidence and declining self-reported risk behavior over time. While no formal intervention was administered, these findings highlight the potential impact of voluntary counseling and testing in a high-risk cohort.

Keywords: Cohort studies, hepacivirus, HIV, Chennai, India

A4887: Study of drug addicts regarding the extent of use and reasons for staking the drugs

Author: S.K. Saini and Ladhinder Kaur

Source: Indian Journal of population education, 51 (October-December 2010): 37-45

Abstract: The present investigation was undertaken to study the extent of use of drugs by drug addicts. The findings of the study reveal that most of the respondents belonged to age group of 35-50 years, had education up to primary level, their fathers' education up to secondary level and had illiterate mothers. Majority of the respondents started taking drugs between 18-33 years of age on the suggestions of their friends. Majority of the respondents used to take poppy

husk regularly. It is observed that peer pressure is one of the major factors of drug abuse. It is, therefore, suggested that parents should be very careful about their wards at the age of 18-33 years. They should have complete knowledge regarding the friends of their wards.

Keywords: Drugs, Drug addicts

## Ecology

A4835: Impacts of Oil and Gas Pollution on Female Gender in Ilaje, Niger Delta Region of Ondo State Nigeria

Author: A. F. Fatusin

Source: *Journal of Human Ecology*, 32, 3 (December 2010): 189-196

Abstract: Sustainable development in this millennium entails among other things, gender equity in access to socio-economic and environmental resources. This paper continues the gender debate by evaluating the impacts of oil and gas mining on women in Ilaje region of Ondo state Nigeria. Taking a sample of five oil producing villages of Obierewoye, Ikorigbo, Obenla Awoye and Tsekelewu, 150 questionnaires were administered proportionately based on the populations of the villages on female household heads or senior wives to household heads in the settlements, on basis of systematic random sampling. Data collected were subjected to appropriate statistical analyses and the study confirmed extensive oil and gas pollution in this region particularly in Tsekelewu and Opoekaba in spite of governments' rhetoric on eliminating pollution by the year 2007. This phenomenon has had considerably high negative impacts on women, who have had to combine their traditional roles as domestic workers and mothers along with their new roles as fishermen, farmers and breadwinners thereby bridging the gap created following noticeable occupational migration of men to the oil companies to work as welders, fitters and machinists. To alleviate these problems and lessen the strains, the paper recommends increased monetisation rather than flaring of hydrocarbons and that government's policy intervention in mitigating such impacts should be targeted at women as the most vulnerable group in areas of major environmental problems.

Keywords: Sustainable development, environmental degradation, gender equity, pollution

A4870: Exploring the Influence of a Social Ecological Model on School-Based Physical Activity

Author: Jessie-Lee D. Langille and Wendy M. Rodgers

Source: *Health Education Behavior*, 37, 6 (December 2010): 879-894

Abstract: Among rising rates of overweight and obesity, schools have become essential settings to promote health behaviors, such as physical activity (PA). As schools exist within a broader environment, the social ecological model (SEM) provided a framework to consider how different levels interact and influence PA. The purpose of this study was to provide insight on school-based PA promotion by investigating the integration between different levels of

Emmons's SEM within one public school board in a large Canadian city. Interviews were conducted with participants from the government (n = 4), the public school board (n = 3), principals (n = 3), and teachers (n = 4) and analyzed to explore perspectives on the various levels of the model. The results suggested that higher level policies "trickled down" into the organizational level of the SEM but there was pivotal responsibility for schools to determine how to implement PA strategies. Furthermore, schools have difficulty implementing PA because of the continued priority of academic achievement.

Keywords: Social ecological model, school-based programs, physical activity



## Education

A4796: Women's education and empowerment in rural areas: A case study of West Bengal, India

Author: Rakhee Banerjee

Source: Journal of Educational planning and Administration, XXIV, 1 (January 2010): 23-52

Abstract: Starting with the global documents on women education and empowerment, this paper makes an attempt to examine rural and urban women in West Bengal, particularly with respect to the availability of educational opportunities and empowerment. All the results were on the basis of a 10 per cent sampling of households in selected villages classified according to soil-agro-climatic zones of West Bengal.

Keywords: West Bengal, women education, rural areas

A4814: National female literacy, individual socio-economic status, and maternal health care use in sub-Saharan Africa

Author: Sarah McTavish

Source: Social Science & Medicine, 71, 11 (December 2010): 1958-1963

Abstract: The United Nations Millennium Development Goals have identified improving women's access to maternal health care as a key target in reducing maternal mortality in sub-Saharan Africa (sSA). Although individual factors such as income and urban residence can affect maternal health care use, little is known about national-level factors associated with use. Yet, such knowledge may highlight the importance of global and national policies in improving use. This study examines the importance of national female literacy on women's maternal health care use in continental sSA. Data that come from the 2002–2003 World Health Survey. Multilevel logistic regression was used to examine the association between national female literacy and individual's non-use of maternal health care, while adjusting for individual-level factors and national economic development. Analyses also assessed effect modification of the association between income and non-use by female literacy. Effect modification was evaluated with the likelihood ratio test (G<sub>2</sub>). We found that within countries, individual age, education, urban residence and household income were associated with lack of maternal health care. National female literacy modified the association of household income with lack of maternal health care use. The strength of the association between income and lack of maternal health care was weaker in countries with higher female literacy. We conclude therefore that higher

national levels of female literacy may reduce income-related inequalities in use through a range of possible mechanisms, including women's increased labour participation and higher status in society. National policies that are able to address female literacy and women's status in sub-Saharan Africa may help reduce income-related inequalities in maternal health care use.

Keywords: Maternal health, child health, socio-economic status, female literacy, Sub-Saharan Africa

A4830: Utilization of Internet Technology by Low-Income Adults: The Role of Health Literacy, Health Numeracy, and Computer Assistance

Author: Jakob D. Jensen

Source: *Journal of Aging and Health*, 22, 6 (September 2010): 804-826

Abstract: Objectives: To examine whether low-income adults' utilization of Internet technology is predicted or mediated by health literacy, health numeracy, and computer assistance. Method: Low-income adults (N = 131) from the midwestern United States were surveyed about their technology access and use. Results: Individuals with low health literacy skills were less likely to use Internet technology (e.g., email, search engines, and online health information seeking), and those with low health numeracy skills were less likely to have access to Internet technology (e.g., computers and cell phones). Consistent with past research, males, older participants, and those with less education were less likely to search for health information online. The relationship between age and online health information seeking was mediated by participant literacy. Discussion: The present study suggests that significant advances in technology access and use could be sparked by developing technology interfaces that are accessible to individuals with limited literacy skills.

Keywords: Health literacy, numeracy, computer assistance, mediation

A4831: Lifelong Educational Practices and Resources in Enabling Health Literacy among Older Adults

Author: Andrew V. Wister

Source: *Journal of Aging and Health*, 22, 6 (September 2010): 827-854

Abstract: Objectives: The goal of this study is to examine the role of lifelong educational and learning practices and resources in enabling health literacy. Method: A subsample of older

adults (n = 2,979) derived from the 2003 seven country IALSS (Canadian survey) was used. An expanded Andersen-Newman model that included lifelong learning enabling factors was used to develop predictors of health literacy. Results: The formal education, lifelong and lifewide learning enabling factors exhibited the most robust associations with health literacy. These included education level; self-study in the form of reading manuals, reference books and journals; computer/Internet use, use of the library; leisure reading of books; reading letters, notes and e-mails; and volunteerism. Discussion: Findings are discussed in relation to the development and maintenance of health literacy over the life course. Programs and policies that encourage lifelong and lifewide educational resources and practices by older persons are needed.

Keywords: Health literacy, educational resources, lifelong learning, older adults

A4876: Public health manpower: An alternative model

Author: F.U. Ahmed

Source: Indian Journal of Public Health, 54, 3 (July-September): 137-144

Abstract: The Bhore committee observed that "if nation's health is to be built, the health program should be developed on the foundation of preventive health work and that such activities should proceed side with the treatment of patients." The committee defined two categories of workforce: one for the personal care and the other for the public health namely, public health nurses and sanitary inspectors for public health and nurse, midwife, and pharmacist for personal care. Recommendations of successive health committees lead to amalgamation of personal care services and public health services. Single focus programs and amalgamation of different cadre of Grassroots staff lead to dilution of public health services and more focused on different program-based personal care services. To carry out public health services, we need a sufficiently knowledgeable, well-skilled and competent mid-level supervisory public health workforce who can support and strengthen the performance of the existing multipurpose workers. Increased understanding of the influence of different determinants on health and well-being and also scientific progress to combat the environmental and biological effects on health has widened the gap between the actual need of human resources and expanding public health services needs. Keeping in view of the above and meet the challenges, a 3-year course of Bachelor in public health is conceived by the Indian Academy of Public Health. Professional responsibilities expected from this new cadre of workforce are also discussed in this article.

Keywords: Graduate public health course, personal health care services, public health manpower, public health services

A4884: Generating an evidence base for information, education and communication needs of the community regarding deafness: A qualitative study

Author: Neelima Gupta

Source: Indian Journal of Community Medicine, 35, 3 (2010): 420-423

Abstract: Background: India is a significant contributor to the world's total burden of deafness. Out of all causes, almost 50% of the causes of decreased hearing are preventable. With the launch of the National Programme for Prevention and Control of Deafness, the need for an effective information, education and communication (IEC) campaign was felt. There is negligible information available about the status of awareness levels of the community about the various aspects of hearing loss. We carried out this research with the objective of getting to know the existing awareness related to hearing loss in the community to generate an evidence base for formulating various messages to be incorporated in IEC materials for dissemination in the community. We also asked the participants about their suggestions for the various information resources so that an IEC campaign could be designed accordingly. Materials and Methods: We carried out 10 focus group discussions among various groups of population and analyzed the discussion. Results: A descriptive analysis of the observations regarding the awareness about deafness in the community and prevalent myths and suggested information resources is presented. Conclusion: We highlight the lacunae in the existing awareness of various causes of deafness and the preventive measures that could be taken to prevent hearing loss. The evidence generated was used to formulate relevant messages for the various target groups, which were then incorporated in development of the IEC materials for the dissemination in the community.

Keywords: Deafness, information, education, communication

A4889: Faculty development: Issues and challenges in management education

Author: Anup Kumar Singh

Source: Indian journal of training and development, 40, 4 (October-December, 2010): 21-33

Abstract: International marketing has intensified and is evident in nearly all aspects of daily life. National boundaries no longer restrict competitive forces. To successful in today's global

economy, companies must be simultaneously responsive to local and global market conditions. Hence, international marketing skills are very important ingredients for every company irrespective of its current involvement, whether or not it is in exporting activities. The purpose of this study was to (a) identify the skills needed for international marketing; (b) identify the level of importance of each of these skills; (c) identify the degree to which these skills are present in employees of exporting companies; and (d) describe the gap between the skills of these employees and the skills they need. An extensive review of the literature was done to determine the skills that are required for effective international marketing. Data regarding skill importance were collected, through a Delphi participant sample of thirty academicians and international marketing practitioners. Companies in the exporting business were surveyed to study the degree of skills their employees possess. Possession ratings were compared across importance ratings, in a way that allowed skill-based training programs to be prioritized. Sixty skills were identified as necessary for an effective international marketing, and were classified into five categories namely- (1) planning and operational skills; (2) pricing skills; (3) promotional skills; (4) product skills; and (5) distribution skills. There were three major managerial implications based on the findings: Implications relating to the degree that small and medium-sized exporting companies may participate in international marketing training programs; International promotional skills should be the topic most emphasized when offering international marketing training programs; and this study has produced a new assessment tool which would go a long way to assist firms in identifying international marketing training needs.

**Keywords:** International marketing skills, exporting companies, skill importance, academicians and international marketing practitioners

## Environment & Pollution

A4820: Changes in Residential Proximity to Road Traffic and the Risk of Death from Coronary Heart Disease

Author: Wen Qi Gan

Source: *Epidemiology*, 21, 5 (September 2010): 642-649

**Abstract:** Background: Residential proximity to road traffic is associated with increased coronary heart disease (CHD) morbidity and mortality. It is unknown, however, whether changes in residential proximity to traffic could alter the risk of CHD mortality. Methods: We used a population-based cohort study with a 5-year exposure period and a 4-year follow-up period to explore the association between changes in residential proximity to road traffic and the risk of CHD mortality. The cohort comprised all residents aged 45–85 years who resided in metropolitan Vancouver during the exposure period and without known CHD at baseline (n = 450,283). Residential proximity to traffic was estimated using a geographic information system. CHD deaths during the follow-up period were identified using provincial death registration database. The data were analyzed using logistic regression. Results: Compared with the subjects consistently living away from road traffic (>150 m from a highway or >50 m from a major road) during the 9-year study period, those consistently living close to traffic (≤150 m from a highway or ≤50 m from a major road) had the greatest risk of CHD mortality (relative risk [RR] = 1.29 [95% confidence interval = 1.18–1.41]). By comparison, those who moved closer to traffic during the exposure period had less increased risk than those who were consistently exposed (1.20 [1.00–1.43]), and those who moved away from traffic had even less increase in the risk (1.14 [0.95–1.37]). All analyses were adjusted for baseline age, sex, pre-existing comorbidities (diabetes, chronic obstructive pulmonary disease, hypertensive heart disease), and neighborhood socioeconomic status. Conclusions: Living close to major roadways was associated with increased risk of coronary mortality, whereas moving away from major roadways was associated with decreased risk.

**Keywords:** Heart disease, road traffic, air pollution

## Epidemiology

A2746: Effect of Parent's Death on Child Survival in Rural Bangladesh: A Cohort Study

Author: Carine Ronsmans

Source: Lancet, 375, 9730 (June 5, 2010): 2024-2031

**Abstract:** The effect of a parent's death on the survival of the children has been assessed in only a few studies. We therefore investigated the effect of the death of the mother or father on the survival of the child up to age 10 years in rural Bangladesh. **Methods**We used data from population surveillance during 1982-2005 in Matlab, Bangladesh. We used Kaplan-Meier and Poisson regression analyses to compute the cumulative probabilities of survival and rates of age-specific death up to age 10 years, according to the survival status of the mother or father during that period. **Findings**There were 144 861 livebirths, and 14 868 children died by 10 years of age. The cumulative probability of survival to age 10 years was 24% in children whose mothers died (n=1385) before their tenth birthday, compared with 89% in those whose mothers remained alive (n=143 473). The greatest effect was noted in children aged 2-5 months whose mothers had died (rate ratio 25.05, 95% CI 18.57-33.81). The effect of the father's death (n=2691) on cumulative probability of survival of the child up to 10 years of age was negligible. Age-specific death rates did not differ in children whose fathers died compared with children whose fathers were alive. **Interpretation**The devastating effects of the mother's death on the survival of the child were most probably due to the abrupt cessation of breastfeeding, but the persistence of the effects up to 10 years of age suggest that the absence of maternal care might be a crucial factor. **Funding**US Agency for International Development, UK Department for International Development, Research Program Consortium, and National Institutes of Health Fogarty International Center.

**Keywords:** Bangladesh, child survivals, regression analyses, United Kingdom, National institutes of health, cumulative probabilities

A4749: Maternal near Miss and Maternal Death in the World Health Organization's 2005 Global Survey on Maternal and Perinatal Health

Author: Joao Paulo Souza

Source: Bulletin of the World Health Organization, 88, 2 (February 2010): 113-119

**Abstract:** **Objective:** To develop an indicator of maternal near miss as a proxy for maternal death and to study its association with maternal factors and perinatal outcomes. **Methods:** In a

multicenter cross-sectional study, we collected maternal and perinatal data from the hospital records of a sample of women admitted for delivery over a period of two to three months in 120 hospitals located in eight Latin American countries. We followed a stratified multistage cluster random design. We assessed the intra-hospital occurrence of severe maternal morbidity and the latter's association with maternal characteristics and perinatal outcomes. Findings: Of the 97 095 women studied, 2964 (34 per 1000) were at higher risk of dying in association with one or more of the following: being admitted to the intensive care unit (ICU), undergoing a hysterectomy, receiving a blood transfusion, suffering a cardiac or renal complication, or having eclampsia. Being older than 35 years, not having a partner, being a primipara or para > 3, and having had a Caesarean section in the previous pregnancy were factors independently associated with the occurrence of severe maternal morbidity. They were also positively associated with an increased occurrence of low and very low birth weight, stillbirth, early neonatal death, admission to the neonatal ICU, a prolonged maternal postpartum hospital stay and Caesarean section. Conclusion: Women who survive the serious conditions described could be pragmatically considered cases of maternal near miss. Interventions to reduce maternal and perinatal mortality should target women in these high-risk categories.

Keywords: Maternal deaths, perinatal health, hospital records, intensive care unit, perinatal mortality, maternal morbidity

A4752: Care Seeking at Time of Childbirth, and Maternal and Perinatal Mortality in Matlab, Bangladesh

Author: Carine Ronsmans

Source: Bulletin of the World Health Organization, 88, 4 (April 2010): 289-296

Abstract: Objective: To examine the nature of the relationship between the use of skilled attendance around the time of delivery and maternal and perinatal mortality. Methods: We analysed health and demographic surveillance system data collected between 1987 and 2005 by the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) in Matlab, Bangladesh. Findings: The study recorded 59 165 pregnancies, 173 maternal deaths, 1661 stillbirths and 1418 early neonatal deaths in its service area over the study period. During that time, the use of skilled attendance during childbirth increased from 5.2% to 52.6%. More than half (57.8%) of the women who died and one-third (33.7%) of those who experienced a perinatal death (i.e. a stillbirth or early neonatal death) had sought skilled attendance. Maternal mortality was low among women who did not seek skilled care (160 per 100 000 pregnancies) and was nearly 32 times higher (adjusted odds ratio, OR: 31.66; 95% confidence interval, CI: 22.03–45.48) among women who came into contact with comprehensive emergency obstetric



care. Over time, the strength of the association between skilled obstetric care and maternal mortality declined as more women sought such care. Perinatal death rates were also higher for those who sought skilled care than for those who did not, although the strength of association was much weaker. Conclusion: Given the high maternal mortality ratio and perinatal mortality rate among women who sought obstetric care, more work is needed to ensure that women and their neonates receive timely and effective obstetric care. Reductions in perinatal mortality will require strategies such as early detection and management of health problems during pregnancy.

Keywords: Bangladesh, diarrhoeal diseases, maternal deaths, neonatal deaths, maternal mortality ratio, perinatal mortality rate, health problems

#### A4754: Case-Control Study of Body Size and Breast Cancer Risk in Nigerian Women

Author: Temidayo O. Ogundiran

Source: American Journal of Epidemiology, 172, 6 (September 2010): 682-690

Abstract: Previous studies have shown that weight is inversely associated with premenopausal breast cancer and positively associated with postmenopausal disease. Height has been shown to be positively correlated with breast cancer risk, but the association was not conclusive for premenopausal women. These previous studies were conducted primarily in Western countries, where height is not limited by nutritional status during childhood. The authors assessed the association between breast cancer and anthropometric measures in the Nigerian Breast Cancer Study (Ibadan, Nigeria). Between 1998 and 2009, 1,233 invasive breast cancer cases and 1,101 controls were recruited. The multivariate-adjusted odds ratio for the highest quartile group of height relative to the lowest was 2.03 (95% confidence interval (CI): 1.51, 2.72; P-trend < 0.001), with an odds ratio of 1.22 (95% CI: 1.14, 1.32) for each 5-cm increase, with no difference by menopausal status. Comparing women with a body mass index in the lowest quartile group, the adjusted odds ratio for women in the highest quartile category was 0.72 (95% CI: 0.54, 0.94; P-trend = 0.009) for premenopausal and postmenopausal women. Influence of height on breast cancer risk was quite strong in this cohort of indigenous Africans, which suggests that energy intake during childhood may be important in breast cancer development.

Keywords: Africa, body height, body mass index, breast, Nigerian women

#### A4756: Efficacy and Safety of a Recombinant Hepatitis E Vaccine in Healthy Adults: A large-scale, Randomised, double-blind placebo-controlled, Phase 3 Trial

Author: Feng-Cai Zhu

Source: Lancet, 376, 9744 (September 11, 2010): 895-902

**Abstract:** Seroprevalence data suggest that a third of the world's population has been infected with the hepatitis E virus. Our aim was to assess efficacy and safety of a recombinant hepatitis E vaccine, HEV 239 (Hecolin; Xiamen Innovax Biotech, Xiamen, China) in a randomised, double-blind, placebo-controlled, phase 3 trial. **Methods** Healthy adults aged 16-65 years in, Jiangsu Province, China were randomly assigned in a 1:1 ratio to receive three doses of HEV 239 (30 µg of purified recombinant hepatitis E antigen adsorbed to 0.8 mg aluminium hydroxide suspended in 0.5 mL buffered saline) or placebo (hepatitis B vaccine) given intramuscularly at 0, 1, and 6 months. Randomisation was done by computer-generated permuted blocks and stratified by age and sex. Participants were followed up for 19 months. The primary endpoint was prevention of hepatitis E during 12 months from the 31st day after the third dose. Analysis was based on participants who received all three doses per protocol. Study participants, care givers, and investigators were all masked to group and vaccine assignments. This trial is registered with ClinicalTrials.gov, number NCT01014845. **Findings** 11 165 of the trial participants were tested for hepatitis E virus IgG, of which 5285 (47%) were seropositive for hepatitis E virus. Participants were randomly assigned to vaccine (n=56 302) or placebo (n=56 302). 48 693 (86%) participants in the vaccine group and 48 663 participants (86%) in the placebo group received three vaccine doses and were included in the primary efficacy analysis. During the 12 months after 30 days from receipt of the third dose 15 per-protocol participants in the placebo group developed hepatitis E compared with none in the vaccine group. Vaccine efficacy after three doses was 100.0% (95% CI 72.1-100.0). Adverse effects attributable to the vaccine were few and mild. No vaccination-related serious adverse event was noted. **Interpretation** HEV 239 is well tolerated and effective in the prevention of hepatitis E in the general population in China, including both men and women age 16-65 years. **Funding** Chinese National High-tech R&D Programme (863 programme), Chinese National Key Technologies R&D Programme, Chinese National Science Fund for Distinguished Young Scholars, Fujian Provincial Department of Sciences and Technology, Xiamen Science and Technology Bureau, and Fujian Provincial Science Fund for Distinguished Young Scholars.

**Keywords:** Efficacy and safety, healthy adults, hepatitis E virus, placebo groups

A4758: Increased Educational Attainment and its Effect on Child Mortality in 175 Countries between 1970 and 2009: A Systematic Analysis

**Author:** Emmanuela Gakidou

**Source:** Lancet, 376, 9745 (September 18, 2010): 959-974

**Abstract:** In addition to the inherent importance of education and its essential role in economic growth, education and health are strongly related. We updated previous systematic assessments of educational attainment, and estimated the contribution of improvements in women's education to reductions in child mortality in the past 40 years. **Methods** We compiled 915 censuses and nationally representative surveys, and estimated mean number of years of education by age and sex. By use of a first-differences model, we investigated the association between child mortality and women's educational attainment, controlling for income per person and HIV seroprevalence. We then computed counterfactual estimates of child mortality for every country year between 1970 and 2009. **Findings** The global mean number of years of education increased from 4.7 years (95% uncertainty interval 4.4-5.1) to 8.3 years (8.0-8.6) for men (aged  $\geq 25$  years) and from 3.5 years (3.2-3.9) to 7.1 years (6.7-7.5) for women (aged  $\geq 25$  years). For women of reproductive age (15-44 years) in developing countries, the years of schooling increased from 2.2 years (2.0-2.4) to 7.2 years (6.8-7.6). By 2009, in 87 countries, women (aged 25-34 years) had higher educational attainment than had men (aged 25-34 years). Of 8.2 million fewer deaths in children younger than 5 years between 1970 and 2009, we estimated that 4.2 million (51.2%) could be attributed to increased educational attainment in women of reproductive age. **Interpretation** The substantial increase in education, especially of women, and the reversal of the gender gap have important implications not only for health but also for the status and roles of women in society. The continued increase in educational attainment even in some of the poorest countries suggests that rapid progress in terms of Millennium Development Goal 4 might be possible. **Funding** Bill & Melinda Gates Foundation.

**Keywords:** Educational attainment, child mortality, economic growth, women's education, HIV seroprevalence

A4760: Oral Sucrose as an Analgesic Drug for Procedural Pain in Newborn Infants: A Randomised Controlled Trial

**Author:** Rebecca Slater

**Source:** Lancet, 376, 9748 (October 9, 2010): 1225-1232

**Abstract:** Many infants admitted to hospital undergo repeated invasive procedures. Oral sucrose is frequently given to relieve procedural pain in neonates on the basis of its effect on behavioural and physiological pain scores. We assessed whether sucrose administration reduces pain-specific brain and spinal cord activity after an acute noxious procedure in newborn infants. **Methods** in this double-blind, randomised controlled trial, 59 newborn infants at University College Hospital (London, UK) were randomly assigned to receive 0.5 mL 24% sucrose solution or 0.5 mL sterile water 2 min before undergoing a clinically required heel

lance. Randomisation was by a computer-generated randomisation code, and researchers, clinicians, participants, and parents were masked to the identity of the solutions. The primary outcome was pain-specific brain activity evoked by one time-locked heel lance, recorded with electroencephalography and identified by principal component analysis. Secondary measures were baseline behavioural and physiological measures, observational pain scores (PIPP), and spinal nociceptive reflex withdrawal activity. Data were analysed per protocol. This study is registered, number ISRCTN78390996. Findings 29 infants were assigned to receive sucrose and 30 to sterilised water; 20 and 24 infants, respectively, were included in the analysis of the primary outcome measure. Nociceptive brain activity after the noxious heel lance did not differ significantly between infants who received sucrose and those who received sterile water (sucrose: mean 0.10, 95% CI 0.04-0.16; sterile water: mean 0.08, 0.04-0.12;  $p=0.46$ ). No significant difference was recorded between the sucrose and sterile water groups in the magnitude or latency of the spinal nociceptive reflex withdrawal recorded from the biceps femoris of the stimulated leg. The PIPP score was significantly lower in infants given sucrose than in those given sterile water (mean 5.8, 95% CI 3.7-7.8 vs 8.5, 7.3-9.8;  $p=0.02$ ) and significantly more infants had no change in facial expression after sucrose administration (seven of 20 [35%] vs none of 24;  $p<0.0001$ ). Interpretation Our data suggest that oral sucrose does not significantly affect activity in neonatal brain or spinal cord nociceptive circuits, and therefore might not be an effective analgesic drug. The ability of sucrose to reduce clinical observational scores after noxious events in newborn infants should not be interpreted as pain relief. Funding Medical Research Council.

Keywords: Oral sucrose, newborn infants, procedural pains, analgesic drugs

A4858: Effect of Brief Sleep Hygiene Education for Workers of an Information Technology Company

Author: Mitsuru Kakinuma

Source: Industrial Health, 48, 6 (November 2010): 758-765

Abstract: To investigate the effects of sleep hygiene education for workers of an information technology (IT) company, we conducted a controlled clinical trial providing 581 workers one-hour sleep hygiene education. The contents of the sleep hygiene education program were a review of sleep habits, provide sleep hygiene education, and the establishment of sleep habit goals. A self-report questionnaire was used to measure outcomes including the Pittsburgh Sleep Quality Index (PSQI), Karolinska Sleepiness Scale (KSS), Checklist Individual Strength (CIS), Center for Epidemiologic Studies for Depression (CES-D), and mean sleep duration on weekdays before and 4 wk after the intervention. A total of 391 participants were included in the analysis,

with 214 participants in the sleep hygiene education group and 177 in the waiting list group. KSS score at 2 P.M. decreased by 0.42 points in the sleep hygiene education group, but increased by 0.08 points in the waiting list group, showing a significant effect size of 0.50 (95%CI, -0.97 to -0.04,  $p < 0.05$ ). PSQI score also improved, but the inter-group difference was not statically significant. The present study provides preliminary evidence that brief sleep hygiene education may improve afternoon sleepiness at work, but not sleep at night for IT workers.

Keywords: Sleep hygiene education, information technology company, sleepiness, controlled

A4888: Epidemiological study of Vitiligo amongst rural children in central India

Author: S.P. Jain and S. Kar

Source: Indian Practitioner, 64, 2 (February 2011): 75-78

Abstract: Background and Aims: Vitiligo is a common disorder of skin characterized by altered pigmentation. The present work was undertaken to study the prevalence, clinical profile and possible aetiological factors of vitiligo amongst the children from rural central India. Methods: Children in the age group of 2-12 years from villages of Central India attending the skin O.P.D., for vitiligo comprised the clinical material of the study. Detailed history regarding age of onset and presentation, sex, site of involvement, progression of disease, family history was recorded followed by clinical examination. Results: Of the 76 children 43 were female and 33 male. 3/4<sup>th</sup> of the children (73.68%) were in the range of 7-12 years in 40.8%. Multicentric origin was more common than single site involvement and focal type of vitiligo was most common. In most of the children the vitiligo was progressive with lower extremity being the most common site of involvement. Family history was not common and found only in 14.47% of children. Conclusions: Based on the results of study amongst the children from Rural Central India, childhood vitiligo can be considered a subtype of vitiligo with certain specific features.

Keywords: Childhood, vitiligo, epidemiology, India

## Family Planning

A4844: Providers' Views Concerning Family Planning Service Delivery to HIV-positive Women in Mozambique

Author: Sarah R. Hayford, Victor Agadjanian

Source: *Studies in Family Planning*, 41, 4 (December 2010): 291–300

**Abstract:** This study explores challenges and obstacles in providing effective family planning services to HIV-positive women as described by staff of maternal and child health (MCH) clinics. It draws upon data from a survey of service providers carried out from late 2008 to early 2009 in 52 MCH clinics in southern Mozambique, some with and some without HIV services. In all clinics, surveyed providers reported that practical, financial, and social barriers made it difficult for HIV-positive clients to follow protocols to prevent mother-to-child transmission of the virus. Likewise, staff were skeptical of their seropositive clients' ability to adhere to recommendations to cease childbearing and to use condoms consistently. Providers' recommendations to HIV-positive clients and their assessment of barriers to adherence did not depend on availability of HIV services. Although integration of HIV and reproductive health services is advancing in Mozambique, service providers do not feel that they can influence the behaviors of HIV-positive women effectively.

**Keywords:** Family planning, HIV, mozambique, family planning service

A4886: Impact of women's education on fertility and family planning

Author: D.S. Sujatha and G.Brahmananda Reddy

Source: *Indian Journal of population education*, 51 (October-December 2010): 28-36

**Abstract:** The Purpose of this paper is to study the influence of women's education on fertility and contraceptive behavior of the couples. A descriptive study was designed by selecting three major urban areas of Andhra Pradesh namely Tirupati, Nellore and Vijayawada. The sample consists of 750 eligible couples, 375 each from Vadiki and Niyogi sects of Brahmins of Andhra Pradesh. The sample is selected by stratified multistage random sampling procedure. Women's education was taken as the parameter to study the fertility differentials and family planning acceptance at various educational levels. Means, proportions and chi-square test were used to analyze the data. The results indicated that fertility and contraceptive adoption varied with the advancement of education showing a negative relation with fertility and positive relation with contraceptive acceptance.

**Keywords:** Women's education, fertility, contraceptive adoption, family planning

## Food and Nutrition

A4780: Heavy drinking and health promotion activities

Author: Susan L. Ettnera

Source: Social Science & Medicine, 71, 1 (July 2010): 134-142

Abstract: Empirical evidence suggests that individuals who consume relatively large amounts of alcohol are more likely to use expensive acute medical care and less likely to use preventive or ambulatory services than other individuals. The few studies that investigated the associations between heavy drinking and health promotion activities did not try to address omitted-variable biases that may confound the relationships. To fill this void in the literature, we examined the effects of heavy alcohol use on three health promotion activities (routine physical exam, flu shot, regular seatbelt use) using the US 2006 Behavioral Risk Factor Surveillance Survey. Although specification tests indicated that omitted variable bias was not present in the majority of the single-equation probit models, we cautiously interpret our findings as evidence of strong associations rather than causal effects. Among both men and women, heavy alcohol use is negatively and significantly associated with each of our three outcomes. These findings suggest that heavy drinkers may be investing less in health promotion activities relative to abstainers and other drinkers. Policy options to address the associated externalities may be warranted.

Keywords: Alcohol consumption, health promotion activities, influenza vaccination

A2747: Use of New World Health Organization Child Growth Standards to Assess how Infant Malnutrition Relates to Breastfeeding and Mortality

Author: Linda Vesel

Source: Bulletin of the World Health Organization, 88, 1 (January 2010): 39-48

Abstract: Objective: To compare the estimated prevalence of malnutrition using the World Health Organization's (WHO) child growth standards versus the National Center for Health Statistics' (NCHS) growth reference, to examine the relationship between exclusive breastfeeding and malnutrition, and to determine the sensitivity and specificity of nutritional status indicators for predicting death during infancy. Methods: A secondary analysis of data on 9424 mother–infant pairs in Ghana, India and Peru was conducted. Mothers and infants were enrolled in a trial of vitamin A supplementation during which the infants' weight, length and feeding practices were assessed regularly. Malnutrition indicators were determined using WHO and NCHS growth standards. Findings: The prevalence of stunting, wasting and underweight in

infants aged < 6 months was higher with WHO than NCHS standards. However, the prevalence of underweight in infants aged 6–12 months was much lower with WHO standards. The duration of exclusive breastfeeding was not associated with malnutrition in the first 6 months of life. In infants aged < 6 months, severe underweight at the first immunization visit as determined using WHO standards had the highest sensitivity (70.2%) and specificity (85.8%) for predicting mortality in India. No indicator was a good predictor in Ghana or Peru. In infants aged 6–12 months, underweight at 6 months had the highest sensitivity and specificity for predicting mortality in Ghana (37.0% and 82.2%, respectively) and Peru (33.3% and 97.9% respectively), while wasting was the best predictor in India (sensitivity: 54.6%; specificity: 85.5%). Conclusion: Malnutrition indicators determined using WHO standards were better predictors of mortality than those determined using NCHS standards. No association was found between breastfeeding duration and malnutrition at 6 months. Use of WHO child growth standards highlighted the importance of malnutrition in the first 6 months of life.

Keywords: Child growth, infant malnutrition, nutritional status, vitamin A, feeding practices

A4773: Difficulty of healthy eating: A Rasch model approach

Author: Spencer Henson

Source: Social Science & Medicine, 70, 10 (May 2010): 1574-1580

Abstract: This study aims to measure the difficulty of healthy eating as a single latent construct and, within that, assess which dietary guidelines consumers find more or less difficult to comply with using the Rasch model approach. Participants self-reported their compliance with 12 health-promoting dietary recommendations related to cooking methods and consumption of specific food items. Data were drawn from a survey elicited using a longitudinal consumer panel established in the City of Guelph, Ontario, Canada in 2008. The panel consists of 1962 randomly-selected residents of Guelph between the age of 20 and 69 years. The response rate was equal to 68 percent. The main assumptions of the Rasch model were satisfied. However, subsequent differential item functioning analysis revealed significant scale variations by gender, education, age and household income, which reduced the validity of the Rasch scale. Conversely, these scale variations highlight the importance of socio-economic and demographic factors on the difficulty of healthy eating.

Keywords: Canada, healthy eating, dietary guidelines, Rasch model

A4806: Examining opportunities for promotion of healthy eating at children's sports clubs

Author: Bridget Kelly



Source: Australian and New Zealand Journal of Public Health, 34, 6 (December 2010): 583–588

**Abstract:** Objective: Australian data indicate that 63% of children participated in sport in 2009, a 4% increase since 2000. Children's high participation in sport, and the association between sport and health, means that these settings provide an opportunity to promote other aspects of health, such as healthy eating, to children. This study aimed to determine healthy eating practices and policies at children's sports clubs. Methods: Sports clubs (n=108) for the nine most popular sports for children aged 5 to 14 were randomly sampled from three large geographical areas across one state and one territory in Australia. A purpose-designed telephone questionnaire for sports club officials was developed to determine the food and beverages sold, provided and promoted at sports clubs and the availability of healthy-eating policies. Results: The most frequently sold item at canteens was water, followed by sports drinks, chocolate/confectionery and soft drink. Only 20% of canteens promoted healthy food. Thirty-nine per cent of clubs made recommendations on the food and beverages to be consumed during sport, mostly relating to water consumption. The majority (76%) engaged in fundraising; many in collaboration with chocolate/confectionery companies. Only three clubs had a written policy on healthy eating. Conclusion: Addressing the low uptake of healthy eating policies would be a useful strategy to improve the healthiness of sports clubs. Implications: Policies could seek to reduce the availability and promotion of unhealthy food and beverages through canteens, vending machines and fundraising.

Keywords: Sport, children, nutrition, health promotion

A4847: Current capacity for training in public health nutrition in West Africa

Author: F. Peppinga

Source: Global Public Health, 5, Supplement 1 (November 2010): S20-S41

**Abstract:** This article is based on a paper prepared for the Workshop on Establishing a Regional Institute for Public Health Nutrition Research and Training in West Africa, convened in Dakar, Senegal, 26-28 March, 2009. Information was gathered mainly prior to this workshop; several responses, however, came in after the workshop and these have been included in the current paper. In completion of the article use was made of the views and opinions as expressed during this workshop. Objectives were to provide background information on academic programmes (undergraduate and graduate) and research institutions with a focus on human nutrition in West Africa, to describe the importance of foreign nutrition training programmes for West African students and to detail existing nutrition training activities currently in the region. Data were obtained from a survey of 15 UNICEF country offices in the West African region, previously published reports, United Nations University/International Union of Nutrition Sciences capacity development activities 1996-2009, personal communications and websites of

relevant African institutions. Results indicate that West African nutrition academic programmes and research institutes do not adequately meet the demand for nutritionists and technical services in the region. Exceptions seem to be Benin, Ghana and Nigeria. Diploma courses and other short courses have been an important means of attracting people from a variety of disciplines to nutrition. A well-equipped regional institute could directly and indirectly bolster nutrition capacity in the region. To meet the regional nutrition research and training needs in West Africa, it is not necessary to make a choice between creating a new regional institution vs. expanding existing national institutions. Based on solid capacity development principles, both options need action.

Keywords: Public health nutrition, nutrition research, nutrition training, nutrition institutional capacity, West Africa

Linking food security and nutrition: Conceptual issues

Author: Anwar Islam and Profulla C. Sarker

Source: South Asian Anthropologist, 10, 2 (September 2010): 129-134

Abstract: This paper has three components: one is food security and another is nutrition security and third one is linkage between them from a theoretical perspective. The main pillars of food security have been identified as availability of food, access to food, and distribution and proper utilization of food to all segments of the population along with the food vulnerability with seasonal variation of food production in geographical settings. Nutritional security is not merely linked to availability and access of food rather an appropriate amount and types of nutrients as well as the quality and safety of food and proper distribution of food at the household level through the empowerment of women. The main focus of this paper is to examine to what extent food security and nutritional security are interlinked.

Keywords: Food security, nutrition, nutrition and quality of food, production and distribution of food

## H1N1

A4784: Rapid method for assessing social versus independent interest in health issues: A case study of 'bird flu' and 'swine flu'

Author: R. Alexander Bentley and Paul Ormerod

Source: Social Science & Medicine, 71, 3 (August 2010): 482-485

Abstract: Effective communication strategies regarding health issues are affected by the way in which the public obtain their knowledge, particularly whether people become interested independently, or through their social networks. This is often investigated through localized ethnography or surveys. In rapidly-evolving situations, however, there may also be a need for swift, case-specific assessment as a guide to initial strategy development. With this aim, we analyze real-time online data, provided by the new 'Google Trends' tool, concerning Internet search frequency for health-related issues. To these data we apply a simple model to characterise the effective degree of social transmission versus decisions made individually. As case examples, we explore two rapidly-evolved issues, namely the world-wide interest in avian influenza, or 'bird flu', in 2005, and in H1N1, or 'swine flu', from late April to early May 2009. The 2005 'bird flu' scare demonstrated almost pure imitation for two months initially, followed by a spike of independent decision that corresponded with an announcement by US president George Bush. For 'swine flu' in 2009, imitation was the more prevalent throughout. Overall, the results show how interest in health scares can spread primarily by social means, and that engaging more independent decisions at the population scale may require a dramatic announcement to push a populace over the 'tipping point'.

Keywords: H1N1, influenza, social networks, bird flu, swine flu, health scares

## Health care

A2744: India's Janani Suraksha Yojana, a Conditional Cash Transfer Programme to Increase Births in Health Facilities: An Impact Evaluation

Author: Stephen S. Lim

Source: Lancet, 375, 9730 (June 5, 2010): 2009-2023

**Abstract:** In 2005, with the goal of reducing the numbers of maternal and neonatal deaths, the Government of India launched Janani Suraksha Yojana (JSY), a conditional cash transfer scheme, to incentivise women to give birth in a health facility. We independently assessed the effect of JSY on intervention coverage and health outcomes. **Methods** We used data from the nationwide district-level household surveys done in 2002-04 and 2007-09 to assess receipt of financial assistance from JSY as a function of socioeconomic and demographic characteristics; and used three analytical approaches (matching, with-versus-without comparison, and differences in differences) to assess the effect of JSY on antenatal care, in-facility births, and perinatal, neonatal, and maternal deaths. **Findings** Implementation of JSY in 2007-08 was highly variable by state—from less than 5% to 44% of women giving birth receiving cash payments from JSY. The poorest and least educated women did not always have the highest odds of receiving JSY payments. JSY had a significant effect on increasing antenatal care and in-facility births. In the matching analysis, JSY payment was associated with a reduction of 3.7 (95% CI 2.2-5.2) perinatal deaths per 1000 pregnancies and 2.3 (0.9-3.7) neonatal deaths per 1000 livebirths. In the with-versus-without comparison, the reductions were 4.1 (2.5-5.7) perinatal deaths per 1000 pregnancies and 2.4 (0.7-4.1) neonatal deaths per 1000 livebirths. **Interpretation** The findings of this assessment are encouraging, but they also emphasise the need for improved targeting of the poorest women and attention to quality of obstetric care in health facilities. Continued independent monitoring and evaluations are important to measure the effect of JSY as financial and political commitment to the programme intensifies. **Funding** Bill & Melinda Gates Foundation.

**Keywords:** Cash transfers, household surveys, financial assistance, analytical approaches, perinatal deaths

A4769: Gender and health outcomes: The impact of healthcare systems and their financing on life expectancies of women and men

Author: Sharon Asiskovitch

Source: Social Science and Medicine, 70, 6 (March 2010): 886-895

**Abstract:** The paper considers the impact of healthcare systems and how they are financed on the life expectancies (LEs) of women and men in 19 OECD countries during the period 1990–2005 using OECD Health Data 2009. There is a gap in life expectancy (LE) between men and women, with women living longer than men, and most studies point to socio-economic variables and lifestyle and health-related behaviors. The role of healthcare systems and access to medical services is still disputed. This article proposes a number of adjustments to previous studies. First, it uses several variables broken down according to gender. Second, it considers healthcare systems by measuring their national expenditure as well as their public and private sources of funding. Third, it includes factors indirectly affecting health as expenditures on other realms of social policy. Fourth, it examines the factors impacting LEs of women and men at birth and at 65. Using a hierarchical model of panel-data regressions, the study finds: (1) there is a marginal impact on LEs at birth for both genders and greater impact on LEs at 65 for both genders; (2) a public mode of funding has greater effect than private; (3) the findings that men benefit more from access to medical services might be the result of the variables controlled in the analysis.

**Keywords:** Life expectancy, gender, healthcare financing, panel-data analysis

**A4770:** Contribution of primary care to health and health systems in low- and middle-income countries: A critical review of major primary care initiatives

**Author:** Margaret Elizabeth Kruk

**Source:** Social Science and Medicine, 70, 6 (March 2010): 904-911

**Abstract:** It has been 30 years since the Declaration of Alma Ata. During that time, primary care has been the central strategy for expanding health services in many low- and middle-income countries. The recent global calls to redouble support for primary care highlighted it as a pathway to reaching the health Millennium Development Goals. In this systematic review we described and assessed the contributions of major primary care initiatives implemented in low- and middle-income countries in the past 30 years to a broad range of health system goals. The scope of the programs reviewed was substantial, with several interventions implemented on a national scale. We found that the majority of primary care programs had multiple components from health service delivery to financing reform to building community demand for health care. Although given this integration and the variable quality of the available research it was difficult to attribute effects to the primary care component alone, we found that primary care-focused health initiatives in low- and middle-income countries have improved access to health care, including among the poor, at reasonably low cost. There is also evidence that primary care programs have reduced child mortality and, in some cases, wealth-based disparities in

mortality. Lastly, primary care has proven to be an effective platform for health system strengthening in several countries. Future research should focus on understanding how to optimize the delivery of primary care to improve health and achieve other health system objectives (e.g., responsiveness, efficiency) and to what extent models of care can be exported to different settings.

Keywords: Primary care, policy experiments, program evaluation, developing countries, health systems

A4774: Poverty, vulnerability, and provision of healthcare in Afghanistan

Author: Jean-Francois Trania

Source: *Social Science & Medicine*, 70, 11 (June 2010): 1745-1755

Abstract: This paper presents findings on conditions of healthcare delivery in Afghanistan. There is an ongoing debate about barriers to healthcare in low-income as well as fragile states. In 2002, the Government of Afghanistan established a Basic Package of Health Services (BPHS), contracting primary healthcare delivery to non-state providers. The priority was to give access to the most vulnerable groups: women, children, disabled persons, and the poorest households. In 2005, we conducted a nationwide survey, and using a logistic regression model, investigated provider choice. We also measured associations between perceived availability and usefulness of healthcare providers. Our results indicate that the implementation of the package has partially reached its goal: to target the most vulnerable. The pattern of use of healthcare provider suggests that disabled people, female-headed households, and poorest households visited health centres more often (during the year preceding the survey interview). But these vulnerable groups faced more difficulties while using health centres, hospitals as well as private providers and their out-of-pocket expenditure was higher than other groups. In the model of provider choice, time to travel reduces the likelihood for all Afghans of choosing health centres and hospitals. We situate these findings in the larger context of current debates regarding healthcare delivery for vulnerable populations in fragile state environments. The 'scaling-up process' is faced with several issues that jeopardize the objective of equitable access: cost of care, coverage of remote areas, and competition from profit-orientated providers. To overcome these structural barriers, we suggest reinforcing processes of transparency, accountability and participation.

Keywords: Afghanistan, healthcare provider choice, perception of healthcare delivery, poverty, vulnerability

A4791: Health status, health behaviour and healthcare use among migrants in the UK: Evidence from mothers in the Millennium Cohort Study

Author: Hiranthi Jayaweera and Maria A. Quigley

Source: Social Science & Medicine, 71, 5 (September 2010): 1002-1010

Abstract: The health of migrants in the UK and their access to healthcare is of considerable policy interest. There is evidence of ethnic inequalities in health and access to and use of healthcare but insufficient consideration of the importance of birth abroad and length of residence in the UK. This study examines indicators of health status, behaviour and healthcare use among mothers of infants in the Millennium Cohort Study, according to whether born in the UK or abroad, individual ethnic grouping, and length of residence. Our findings show there are both positive and negative health indicators associated with ethnicity, birth abroad, and length of residence and presenting results on a single factor in isolation could lead to a misinterpretation of associations. For mothers ethnicity has an important relationship with most health indicators independent of country of birth, length of residence and socio-demographic circumstances. Once adjusted for ethnicity and socio-demographic variables, association with birth abroad disappears for most health outcomes suggesting that there may not be an independent migrant penalty in health. There is a linear trend in decreasing health status with increasing length of residence but no independent association between length of residence and healthcare use. This suggests that while there are continuing barriers to good health for migrants in the receiving society as shown in other studies, factors important for one health outcome may not apply to another. Our findings challenge linear acculturation models for migrants' health in showing that a linear trend in improving socio-economic circumstances for mothers in some ethnic groups is not always associated with better health outcomes or changes in health behaviour. Our results point to a need for a comprehensive collection of information and analysis for all categories of migrants for understanding patterns of and factors underlying health and use of healthcare.

Keywords: UK, migrants, epidemiology, health status, health behavior, mother

A4815: Reducing child malnutrition in Nigeria: Combined effects of income growth and provision of information about mothers' access to health care services

Author: Mark D. Agee

Source: Social Science & Medicine, 71, 11 (December 2010): 1973-1980

**Abstract:** Using a sample of 1359 Nigerian households from the 2003 Demographic and Health Surveys, this article investigates the contribution of improved maternal information about access to community health services toward the reduction of child stunting and undernourishment. The analysis shows that family wealth and region-specific knowledge about community health care access positively affects child nutrition status measured by height-for-age and weight-for-age. However, these nutrition gains can be reinforced or tempered by differences in mother's education and/or her access to community health services. These findings suggest that interventions which enhance public knowledge about availability and access to health care could strengthen more general development-oriented child nutrition-enhancing interventions, such as poverty reduction or growth in health services infrastructure.

**Keywords:** Child malnutrition, Nigeria, maternal health care

**A4819:** Accessibility to primary healthcare in the capital city of a northeastern state of Brazil: an evaluation of the results of a programme

**Author:** Ligia Maria Vieira-da-Silva

**Source:** Journal of Epidemiology and Community Health, 64, 12 (December 2010): 1100-1105

**Abstract:** Background Organisational barriers to primary healthcare are still relevant in developing countries. Although descriptive reports of some experiences focusing on improving accessibility have been published, few studies have evaluated specific interventions aimed at overcoming the organisational obstacles. Objective To evaluate the results of a project designed to improve accessibility to healthcare services in Salvador, Bahia, Brazil. Methodology An evaluative, cross-sectional, ex post facto study that included a control group was carried out in a random sample of 710 users of 25 healthcare units of the primary municipal healthcare network. The association between the project implementation degree and outcome variables was measured by prevalence ratios (PR) and statistical inference was based on Taylor series 95% CIs. Results Better access to primary healthcare was found in units in which the intervention had been implemented than in those in which it had not been implemented, particularly with respect to reducing avoidable queues, the waiting time for scheduling a consultation (PR=0.23; 95% CI 0.15 to 0.34); the time of arrival in the queue (PR=0.16; 95% CI 0.09 to 0.31) and the introduction of a system for scheduling appointments by telephone (PR=0.76; 95% CI 0.70 to 0.83). Conclusion Owing to the simplicity of the programme and the impact it achieved, it may be reproduced in other underdeveloped countries to improve access to healthcare services. In addition, some of the instruments may be used in routine programme evaluation.

**Keywords:** Primary healthcare, Brazil, healthcare, Northeastern state



**A4821: Gestational Age, Birth Weight, and Risk for Injuries in Childhood**

Author: Sun, Yuelian

Source: *Epidemiology*, 21, 5 (September 2010): 650-657

**Abstract:** Background: Some children experience more injuries than others due to personal or environmental risk factors, or to chance. Most injury studies have focused on proximal causes; few have examined the role of neonatal characteristics such as birth weight and gestational age. Methods: We carried out a population-based cohort study of 1,524,114 singletons born in Denmark between 1 January 1978 and 31 December 2004. We obtained information on gestational age, birth weight, and injury from the Danish Medical Birth Registry and the National Hospital Register. We followed participants up to age 29 years and estimated the incidence rate ratio (IRR) of hospitalization for injury, using Poisson regression models. Results: The risk of injury throughout childhood (mainly before 12 years of age) increased with decreasing gestational age and birth weight. The IRR of injury in the first 12 years of life was 4.2 (95% CI = 3.5-5.1), 2.3 (2.0-2.5), and 1.5 (1.3-1.6), respectively, for children born at gestational weeks 20-32, 33-36, and 37-38, compared with those born at gestational weeks 39-41. The IRR was 4.0 (3.4-4.6), 2.5 (2.1-2.8), and 1.4 (1.3-1.6) for children with a birth weight less than 2000 g, 2000-2499 g, and 2500-2999 g, compared with children of 3000-3999 g. Birth weight was also associated with increased risks of injury after adjusting for gestational age. Conclusions: Children born with adverse neonatal conditions have a marked increased risk of injury. This suggests an opportunity to identify children who may benefit from injury prevention. More research is needed to identify the causal pathways driving these associations.

Keywords: Childhood, injury, environmental risk factors

**A4843: Quality of Family Relationships and Use of Maternal Health-care Services in India**

Author: Keera Allendorf

Source: *Studies in Family Planning*, 41, 4 (December 2010): 263-276

**Abstract:** Marital quality is well established as a determinant of health in Western contexts, yet the importance of relationship quality to health in non-Western contexts is largely limited to a focus on domestic violence. Using the Women's Reproductive Histories Survey, this study examines whether women with higher-quality family relationships are more likely than others to use maternal health-care services in Madhya Pradesh, India. Results show that among nuclear families, women with better marital relationships are more likely than others to use antenatal care services and to deliver in a health-care facility. Among joint families, women

who have better relationships with their in-laws are more likely to use antenatal care services. The results further suggest that women's agency mediates some, but not all, of the effect of relationship quality on use of maternal health-care services.

Keywords: Health care services, India, maternal health care

A4868: Health Care bias and sex differences in growth among Rajbansis of West Bengal

Author: Subir Biswas and Ganesh Chandra Malick

Source: South Asian Anthropologist, 10, 2 (September 2010): 181-187

Abstract: The aim of this study is to explore the sex bias health care facilities as well as nutrition as a factor of differential growth, keeping in mind the natural biological difference between sexes. The study was carried out in two stages; first one includes collection of demographic data which have identified sex bias health care systems using household survey, interviews and observation among 976 persons of 200 families including 525 male and 451 female. The second stage was cross sectional study of growth and was restricted to measuring anthropological parameters like stature, weight and mid upper arm circumference of 112 boys and 112 girls of 6 to 12 years age. Nutritional status considered was – weight-for-age height for-age, weight-for-height and BMI comparing WHO as well as Indian standards. The difference between genders was not found significant at 0.05% level. Girls appear to be better buffered than boys against the ill effect of malnutrition.

Keywords: Gender bias, health care, Rajbansis, West Bengal

A4869: Voices From the Inside: African American Women's Perspectives on Healthy Lifestyles

Author: Jill Rowe

Source: Health Education Behavior, 37, 6 (December 2010): 789-800

Abstract: The author of this study conducted focus groups with African American women to explore their perspectives on obesity, disease causation, and their ideas on the functionality of cultural, social, historical, environmental, and psychological forces in altering healthy eating habits. Reoccurring themes centered on four areas: (a) the definition of health as a mind, body, and spiritual construct; (b) conceptualizations of cultural norms regarding healthy foods versus unhealthy foods; (c) the importance of eating and social rituals on food choices; and (d) the impact of the environment in sustaining healthy initiatives. Structural constraints that uphold

legacies of disenfranchisement, environmental injustice, and segregation influence the food choices available in low-wealth communities. These factors continue to operate and are vital issues to consider when designing culturally relevant wellness programs.

Keywords: African American women, disease causation, cultural sensitivity, healthy lifestyles, environmental justice

A4768: School differences in adolescent health and wellbeing: Findings from the Canadian Health Behaviour in School-aged Children Study

Author: Hana Saab and Don Klinger

Source: *Social Science and Medicine*, 70, 6 (March 2010): 850-858

Abstract: The goal of this study was to assess the relationship between student- and school-level factors and student health and wellbeing outcomes, and to estimate the variability present at each of the student and school levels for each of three selected health-related outcomes. The data are from the 2006 Canadian Health Behaviour in School-aged children (HBSC) study in which Grades 6–10 students (N = 9670) and administrators (N = 187) were surveyed. The three outcome measures are Self-Rated Health (SRH), Emotional Wellbeing (EWB), and Subjective Health Complaints (SHC). Individual and school-level effects on the three outcomes were estimated using multi-level modeling. Both individual and school-level factors were associated with students' health. Gender, family wealth, family structure, academic achievement and neighbourhood were significant student-level predictors. We identified random associations between the student-level variables and reported health outcomes. These random effects indicate that the relationships between these student variables and health are not consistent across schools. Student Problem Behaviours at the school were significant predictors of SRH and SHC, while Student Aggression and the school's average socioeconomic standing were significant school-level predictors of EWB. Findings suggest that the environment and disciplinary climate in schools can predict student health and wellbeing outcomes, and may have important implications for school initiatives aimed at students who are struggling both emotionally and academically.

Keywords: Adolescent, health, neighbourhood, school, Canada

## **Health care technology and management**

A4834: RFID-supported medical and healthcare systems

Author: Lidong Wang

Source: International Journal of Healthcare Technology and Management, 11, 6 (2010): 462-473

Abstract: Radio Frequency Identification (RFID) can improve services and management in medical and healthcare systems. It helps monitor patients, link patients with key drugs and personnel, and track medical devices and potentially hazardous materials in hospitals. In telemedicine, RFID integrated with sensors can monitor blood products' temperature, send patients' physiological status, and identify patients' locations in case of emergency. Based on the EPCglobal Network, RFID can track all transactions from the beginning to the end in the pharmaceutical industry, which combats counterfeit products and protects product brands. Information security about RFID tags, challenges, and future work are also discussed.

Keywords: RFID, radio frequency identification, healthcare technology, information security

A4875: Public health informatics in India: The potential and the challenges

Author: A.V. Athavale and Sanjay P. Zodpey

Source: Indian Journal of Public Health, 54, 3 (July-September, 2010): 131-136

Abstract: Public health informatics is emerging as a new and distinct specialty area in the global scenario within the broader discipline of health informatics. The potential role of informatics in reducing health disparities in underserved populations has been identified by a number of reports from all over the world. The article discusses the scope, the limitations and future perspective of this novice discipline in context to India. It also highlights information and technology related tools namely Geographical information systems, Telemedicine and Electronic Medical Record/Electronic Health Record. India needs to leverage its "technology" oriented growth until now (e.g., few satellite-based telemedicine projects, etc.) simultaneously toward development of "information"-based public health informatics systems in future. Under the rapidly evolving scenario of global public health, the future of the public health governance and population health in India would depend upon building and integrating the comprehensive and responsive domain of public health informatics.

Keywords: Electronic health record, GIS, ICTs, public health informatics, telemedicine

## Health Economics

A4837: Gender and Household Health Expenditure in Odisha, India

Author: Himanshu Sekhar Rout

Source: Journal of Health Management, 12, 4 (December 20, 2010): 445-460

**Abstract:** Socially constructed gender has significant influence on the health and Household Health Expenditures (HHE). From the gender and health literatures, three things are clear: most of the studies are macro in nature and based on secondary data; there is lack of research on the issues of gender and health, and out of whatever researches exist, most focus on the female sex; and as health conditions are localised, there is a need for research on the micro aspects of gender and health. In this connection, the present article is a modest attempt to study the gender bias (or unbias) in the HHE based on primary data collected from four districts of Odisha, India, by adopting multi-stage random sampling method. To substantiate the gender bias (or unbias) in health expenditure, multiple regression analysis is used and descriptive statistics are estimated. The result shows that there is a significant difference between the average male and female HHE in rural, urban and combined areas but not in tribal areas. A comparative study of influence of gender on HHE in rural and urban areas shows that the influence of male on the average HHE in rural areas is more than in urban areas whereas the influence of female on it is higher in urban areas. But a comparative study of influence of gender on HHE in rural, urban and tribal areas shows that the influence of male and female on the average HHE is more in tribal areas than rural and urban areas. To reduce the gender disparity in HHE long-term and sustained improvements in women's and men's health is required. This may be brought out through expansion of education and economic opportunities among men and women. Moreover, a strong mental and attitudinal change in both men and women is essential.

**Keywords:** Gender, household health expenditure, Odisha, rural, urban tribal

## Health policy and planning

A4809: Forecasting future tobacco control policy: where to next?

Author: Becky Freeman

Source: Australian and New Zealand Journal of Public Health, 34, 5 (October 2010): 447–450

Abstract: Objective: Effective tobacco control policies include price increases through taxes, restrictions on smoking in public and work places, adequately funded mass media campaigns, bans on advertising, health warnings on packages and cessation assistance. As these policies have been largely implemented in Australia, what next should the country do in tobacco control? Methods: Ninety-one Australian tobacco control stakeholders took part in a web-based survey about the future of tobacco control policies. Results: The policy deemed most important in decreasing smoking was to increase excise and customs duty by 30%. Other policies receiving high support included: funding mass media campaigns through tax hypothecation; introducing retail display bans; plain packaging of tobacco products; and banning smoking in outdoor dining areas. Reintroducing the sale of smokeless tobacco products received the least support. Conclusion: Countries that have largely implemented the provisions of the Framework Convention on Tobacco Control must maintain commitments to proven tobacco control measures, but also provide global leadership through the adoption of innovative policies. Implications: The release of the Australian 2009 National Preventative Health Taskforce's report presents an opportunity to translate these ideas into action.

Keywords: Smoking, tobacco, public health, health policy

A4816: Discursive gaps in the implementation of public health policy guidelines in India: The case of HIV testing

Author: Kabir Sheikh and John Porter

Source: Social Science & Medicine, 71, 11 (December 2010): 2005-2013

Abstract: The implementation of standardized policy guidelines for care of diseases of public health importance has emerged as a subject of concern in low and middle-income countries (LMIC) globally. We conducted an empirical research study using the interpretive policy analysis approach to diagnose reasons for gaps in the implementation of national guidelines for HIV testing in Indian hospitals. Forty-six in-depth interviews were conducted with actors involved in policy implementation processes in five states of India, including practitioners, health administrators, policy-planners and donors. We found that actors' divergences from their

putative roles in implementation were underpinned by their inhabitation of discrete 'systems of meaning' – frameworks for perceiving policy problems, acting and making decisions. Key gaps in policy implementation included conflicts between different actors' ideals of performance of core tasks and conformance with policy, and problems in communicating policy ideas across systems of meaning. These 'discursive' gaps were compounded by the lack of avenues for intellectual intercourse and by unaccounted interrelationships of power between implementing actors. Our findings demonstrate the importance of thinking beyond short-sighted ideals of aligning frontline practices with global policymakers' intentions. Recognising the deliberative nature of implementation, and strengthening discourse and communications between involved actors may be critical to the success of public health policies in Indian and comparable LMIC settings. Effective policy implementation in the long term also necessitates enhancing practitioners' contributions to the policy process, and equipping country public health functionaries to actualize their policy leadership roles.

Keywords: India, public health policy, public health guidelines, HIV testing, policy analysis

A4817: False hope: Effects of social class and health policy on oral health inequalities for migrant farmworker families

Author: Heide Castaneda

Source: *Social Science & Medicine*, 71, 11 (December 2010): 2028-2037

Abstract: Few studies have engaged issues of social class and access related to dental health care policy from an ethnographic perspective. The state of Florida in the US has one of the poorest records in the nation for providing dental care for low-income children, falling especially short for Medicaid-enrolled children. In this paper, we discuss unmet dental health needs of children in migrant farmworker families. Although one of the most marginalized populations, most are eligible for Medicaid and are thus covered for dental services. However, serious disparities have been linked to the lack of access through the public insurance system. This study was informed by participant observation at dental clinics and a Migrant Head Start Center and interviews with dental health providers (n = 19) and migrant farmworker parents (n = 48) during 2009. Our results indicate that some typical factors associated with poor oral health outcomes, such as low dental health literacy, may not apply disproportionately to this population. Instead, we argue that structural features and ineffective policies contribute to oral health care disparities. Dental Medicaid programs are chronically underfunded, resulting in low reimbursement rates, low provider participation, and a severe distribution shortage of dentists within poor communities. We characterize the situation for families in Florida as one of "false hope" because of the promise of services with neither adequate resources nor the urgency to

provide them. The resulting system of charity care, which leads dentists to provide pro bono care instead of accepting Medicaid, serves to only further persistent inequalities. We provide several recommendations, including migrant-specific efforts such as programs for sealants and new mothers; improvements to the current system by removing obstacles for dentists to treat low-income children; and innovative models to provide comprehensive care and increase the number of providers.

Keywords: USA, Health disparities, oral health, dental care, migrants, farmworkers

A4811: Longitudinal Study of Low Back Pain and Daily Vibration Exposure in Professional Drivers

Author: Massimo Bovenzi

Source: *Industrial Health*, 48, 5 (2010): 584-595

Abstract: The aim of this study was to investigate the relation between low back pain (LBP) outcomes and measures of daily exposure to whole-body vibration (WBV) in professional drivers. In a study population of 202 male drivers, who were not affected with LBP at the initial survey, LBP in terms of duration, intensity, and disability was investigated over a two-year follow-up period. Vibration measurements were made on representative samples of machines and vehicles. The following measures of daily WBV exposure were obtained: (i) 8-h energy-equivalent frequency-weighted acceleration (highest axis),  $A(8)_{max}$  in  $ms^{-2}$  r.m.s.; (ii)  $A(8)_{sum}$  (root-sum-of-squares) in  $ms^{-2}$  r.m.s.; (iii) Vibration Dose Value (highest axis),  $VDV_{max}$  in  $ms^{-1.75}$ ; (iv)  $VDV_{sum}$  (root-sum-of-quads) in  $ms^{-1.75}$ . The cumulative incidence of LBP over the follow-up period was 38.6%. The incidence of high pain intensity and severe disability was 16.8 and 14.4%, respectively. After adjustment for several confounders,  $VDV_{max}$  or  $VDV_{sum}$  gave better predictions of LBP outcomes over time than  $A(8)_{max}$  or  $A(8)_{sum}$ , respectively. Poor predictions were obtained with  $A(8)_{max}$ , which is the currently preferred measure of daily WBV exposure in European countries. In multivariate data analysis, physical work load was a significant predictor of LBP outcomes over the follow-up period. Perceived psychosocial work environment was not associated with LBP.

Keywords: Cohort study, professional drivers, low back pain, daily vibration exposure

A4812: Indian Adolescent sexuality: Sexual knowledge, Attitudes and Behaviors among Urban Youth

Author: Priyanka Dheerendra Joshi



Source: *Psychological studies*, 55, 3 (July-September 2010): 181-187

Abstract: With emerging westernization, there is growing concern about sexual promiscuity and changing attitudes toward sexuality. A questionnaire was administered to 182 adolescents from the city of Mumbai in the age group of 17-21 years in order to examine their knowledge about crucial aspects of sexuality and their source of sex related information. The survey also accessed attitudes regarding sex education, premarital sex and homosexuality, as well as sexual behaviors engaged in by the youth. Results showed that sexual knowledge about physiology of sexual response, conception, and pregnancy was less than other areas such as masturbation and contraception. Peers, books and magazines were the most frequently used source of sex information. Boys reported more liberal attitudes and more frequent sexual behaviors than girls. Implications of the results in terms of access to accurate information, communication about sexual issues, and health policy reforms are discussed.

Keywords: Sexuality adolescent, Indian adolescents, sexual knowledge, sexual attitudes, sexual behavior

## Immunization

A4748: Effectiveness of Planning and Management Interventions for Improving Age-appropriate Immunization in Rural India

Author: Shankar Prinja

Source: Bulletin of the World Health Organization, 88, 2 (February 2010): 97-103

**Abstract:** **Objective:** To study the effectiveness of planning and management interventions for ensuring children in India are immunized at the appropriate age. **Methods:** The study involved children aged less than 18 months recruited from Haryana, India, in 2005–2006: 4336 in a pre-intervention cohort and 5213 in a post-intervention cohort. In addition, immunization of 814 hospitalized children from outside the study area was also assessed. Operational barriers to age-appropriate immunization with diphtheria, pertussis and tetanus (DPT) vaccine were investigated by monitoring vaccination coverage, observing immunization sessions and interviewing parents and health-care providers. An intervention package was developed, with community volunteers playing a pivotal role. Its effectiveness was assessed by monitoring the ages at which the three DPT doses were administered. **Findings:** The main reasons for delayed immunization were staff shortages, non-adherence to plans and vaccine being out of stock. In the post-intervention cohort, 70% received a third DPT dose before the age of 6 months, significantly more than in the pre-intervention cohort (62%;  $P = 0.002$ ). In addition, the mean age at which the first, second and third DPT doses were administered decreased by 17, 21 and 34 days, respectively, in the study area over a period of 18 months ( $P$  for trend  $< 0.0001$ ). No change was observed in hospitalized children from outside the study area. **Conclusion:** An intervention package involving community volunteers significantly improved age-appropriate DPT immunization in India. The Indian Government's intention to recruit village-based volunteers as part of a health sector reform aimed at decentralizing administration could help increase timely immunization.

**Keywords:** Planning, management, immunization, rural India, whooping cough, DPT vaccine, health sector reform, Haryana

## Infertility

A4825: Increasing trends of ovulatory dysfunction in infertile women with or without menstrual abnormalities

Author: Chhabra S and Tembhare A

Source: The Indian Practitioner, 63, 12 (December 2010): 765-769

**Abstract:** Menstrual abnormalities are the commonest complaints associated with infertility. Curettage has been a time tested, reproducible method of study of endometrial abnormalities in cases of infertility as well as menstrual abnormalities. Endometrium may be in phase, out of phase, normal/abnormal. The aim of the present study was to analyse the trends of anovulatory endometrium in infertile women with or without menstrual disorders. **Methods:** present biphasic study of ovulation/anovulation in women with infertility has been carried out at a rural tertiary care institution. Study includes 300 randomly included case records of women who had reported with infertility a decade back, [phase one (PI)] and 300 in recent past, [phase two (PII)] **Results:** Menstrual irregularities were the most common complaint associated with infertility. Ten per cent women with primary and 22% with secondary infertility in PI and 25% cases of primary and 38% cases of secondary infertility in PII with no menstrual abnormalities had anovulatory endometrium, significantly more cases of anovulatory endometrium in PII, (p value <0.0034 and <0.05 respectively in primary and secondary infertility). In 35% cases of primary infertility with scanty menstruation both in PI and PII and 26% and 57% women with excessive menstruation, in PI and PII respectively had anovulatory endometrium. Anovulation was more often seen in cases of heavy menstruation and was much more in recent past (PII) (p value <0.05). **Conclusion:** Present pilot study reveals that anovulatory endometrium in women having infertility with or without menstrual disorders has increased over the years. Research needs to be done on this issue and for the reasons of the change so that prevention can be attempted.

**Keywords:** Anovulation, infertile women, menstrual abnormalities

## **Maternal and Child Health**

A4885: Client satisfaction on maternal and child health services in rural Bengal

Author: Palas Das

Source: Indian Journal of Community Medicine, 35, 4 (2010): 478-481

**Abstract:** Background: Services are being provided by health functionaries to the community with the objective of fulfilling their satisfaction but sometimes this is not working for the target population. Objectives: The study was conducted to assess the satisfaction of clients' receiving maternal and child health services and to elicit clients' suggestion for improving the services. Materials and Methods: An exit interview was employed to collect data using a predesigned and pretested schedule. Results: Most of the populations were adult clients. In respect of satisfaction, responses of the clients were either satisfactory (54.31%) or good (23.56%) on maternal and child health services; 'poor or very poor around 20% and it was significantly worse in respect of satisfaction'. Most of the clients (63.06 to 73.94%) expressed their responses as satisfactory and good regarding the assessment of doctors and it was significant. Most of them (73.31%) expressed "satisfactory" response on the quality of services given by nursing staffs. Suggestions of clients for improving the level of satisfaction were sought and in this respect, response was little. Conclusions: Mostly satisfactory observations on maternal and child health services were found in respect of clients' satisfaction and there was scope to improve the quality and quantity of services, and accordingly actions may be taken in the working field.

**Keywords:** Maternal health, child health, Bengal

## Mental Health

A4775: Siblings and childhood mental health: Evidence for a later-born advantage

Author: David W. Lawsona and Ruth Mace

Source: Social Science & Medicine, 70, 12 (June 2010): 2061-2069

Abstract: The social and health sciences have often emphasised the negative impacts of large sibship size and late birth order on childhood. For example, it is now well established that, other things being equal, children in large families and/or with many older siblings, receive lower allocations of care time from both parents, are more likely to grow up in conditions of economic hardship, and, as a likely consequence, exhibit relatively poor educational and physical health outcomes. Few researchers have, however, quantitatively assessed how siblings may influence indicators of mental health, where it is conceivable that social interactions with siblings may have a positive influence. Here, using data from a large British cohort survey (the Avon Longitudinal Study of Parents and Children), we explored the effects of sibling configuration on the Strengths and Difficulties Questionnaire, as a multidimensional index for mental health problems. We demonstrate a significant socio-economic gradient in mental health between the ages of three and nine years, but little evidence for negative effects of large sibship size. Rerunning this analysis to examine birth order, a much clearer pattern emerged; the presence of older siblings was associated with relatively good mental health, while the presence of younger siblings was associated with relatively poor mental health. This suggests that being born into a large family, providing the child is not joined by subsequent siblings, may carry important benefits unconsidered by past research. We discuss possible interpretations of this pattern and the wider implications for understanding the family context of child development.

Keywords: Parental investment, sibling competition, birth order, childhood mental health, UK

A4776: Meaning and mental health consequences of long-term immigration detention for people seeking asylum

Author: Guy J. Coffey

Source: Social Science & Medicine, 70, 12 (June 2010): 2070-2079

Abstract: The aim of the present research was to examine the experience of extended periods of immigration detention from the perspective of previously detained asylum seekers and to identify the consequences of these experiences for life after release. The study sample

comprised seventeen adult refugees (sixteen male and one female; average age 42 years), who had been held in immigration detention funded by the Australian government for on average three years and two months. They were interviewed on average three years and eight months following their release and had been granted permanent visa status or such status was imminent. The study employed a combination of qualitative and quantitative methods to explore detention and post-detention experiences, and mental health some years after release. The qualitative component consisted of semi-structured interviews exploring psychological well-being, daily life, significant events, relationships, and ways of coping throughout these periods. This was supplemented with standardised quantitative measures of current mental health and quality of life. All participants were struggling to rebuild their lives in the years following release from immigration detention, and for the majority the difficulties experienced were pervasive. Participants suffered an ongoing sense of insecurity and injustice, difficulties with relationships, profound changes to view of self and poor mental health. Depression and demoralisation, concentration and memory disturbances, and persistent anxiety were very commonly reported. Standardised measures found high rates of depression, anxiety, PTSD and low quality of life scores. The results strongly suggest that the psychological and interpersonal difficulties participants were suffering at the time of interview were the legacy of their adverse experiences while detained. The current study assists in identifying the characteristics of prolonged immigration detention producing long-term psychological harm.

Keywords: Asylum seekers, refugees, immigration detention, resettlement, mental health, Australia

A4807: Mental health problems among young people on remand: has anything changed since 1989?

Author: Michael G. Sawyer

Source: Australian and New Zealand Journal of Public Health, 34, 6, (December 2010): 594–597

Abstract: Objectives: To determine whether the prevalence of mental health problems among adolescents on court ordered remand in South Australia has changed since 1989. To compare the prevalence of mental health problems reported among adolescents on remand in 1989 and 2008/09 with the prevalence among adolescents in the general community. Method: Mental health problems were identified using the Youth Self-Report (YSR), which was completed by 11–17 year olds on remand in South Australia in 1989 (n=100) and in 2008/09 (n=197), and 13–17 year olds (n=1,283) in the national survey of mental health problems among Australian adolescents conducted in 1998. Results: Although adolescents on remand reported somewhat fewer mental health problems in 2008/09 than were reported in 1989, the prevalence of

problems in both groups of adolescents on remand was significantly higher than that reported for adolescents in the general community. Conclusion: Adolescents on remand have a much higher prevalence of mental health problems than other adolescents in the community, with little change evident over the past 20 years. Implications: To reduce the high levels of mental health problems experienced by adolescents on remand, interventions need to provide effective management and treatment both during the time adolescents are on remand and after they return to the general community.

Keywords: Adolescents, Remand, Mental health problems

A4848: Association of socio-economic, gender and health factors with common mental disorders in women: a population-based study of 5703 married rural women in India

Author: Rahul Shidhaye and Vikram Patel

Source: International Journal of Epidemiology, 39, 6 (December 2010): 1510-1521

Abstract: Background: There are few population-based studies from low- and middle-income countries that have described the association of socio-economic, gender and health factors with common mental disorders (CMDs) in rural women. Methods: Population-based study of currently married rural women in the age group of 15–39 years. The baseline data are from the National Family Health Survey-II conducted in 1998. A follow-up study was conducted 4 years later in 2002–03. The outcome of CMD was assessed using the 12-item General Health Questionnaire (GHQ-12). Due to the hierarchical nature and complex survey design, data were analysed using mixed-effect logistic regression with random intercept model. Results: A total of 5703 women (representing 83.5% of eligible women) completed follow-up. The outcome of CMD was observed in 609 women (10.7%, 95% confidence interval 9.8–11.6). The following factors were independently associated with the outcome of CMD in the final multivariable model: higher age, low education, low standard of living, recent intimate partner violence (IPV), husband's unsatisfactory reaction to dowry, husband's alcohol use and women's own tobacco use. Conclusions: Socio-economic and gender disadvantage factors are independently associated with CMDs in this population of women. Strategies that address structural determinants, for example to promote women's education and reduce their exposure to IPV, may reduce the burden of CMDs in women.

Keywords: Women, depression, social determinants

A4849: Prenatal smoking exposure and offspring stress coping in late adolescence: no causal link

Author: Ralf Kuja-Halkola

Source: *International Journal of Epidemiology*, 39, 6 (December 2010): 1531-1540

**Abstract:** Background: In utero exposure to tobacco smoking has been suggested to cause persistent alterations in cognitive functioning. We examined if mothers' smoking during pregnancy (SDP) is associated with long-term impairment in offspring stress coping and the causal mechanism behind a possible link. Methods: We used a large cohort (n = 187 106) of young males in Sweden (mean age = 18.2 years), who underwent a semi-structured psychological assessment in 1997–2006, including an evaluation of stress coping ability, as part of the compulsory military conscript examination. We compared differentially exposed siblings within nuclear families and cousins in extended families and used multilevel structural equation models to disentangle genetic from environmental contributions to the association between SDP and stress coping. Results: SDP and offspring stress coping was moderately strongly associated when comparing unrelated individuals [regression coefficient (b) = -0.38 on a nine-point scale; 95% confidence interval (CI) -0.40 to -0.36, P < 0.0001]. In contrast, it disappeared when siblings were compared (b = 0.11; 95% CI -0.01 to 0.23, P = 0.071). This familial confounding was entirely due to genetic influences. Conclusions: SDP is an established risk factor for pregnancy- and birth-related complications. However, we found no long-term effect of SDP on offspring stress coping. Rather, the observed association was due to familial confounding of genetic origin; women prone to SDP also transmit genes to their children that are associated with poorer coping with stress.

**Keywords:** Smoking during pregnancy, adolescent stress coping, children-of-sibling model, intergenerational association

A4855: Reconsidering the Role of Social Disadvantage in Physical and Mental Health: Stressful Life Events, Health Behaviors, Race, and Depression

Author: Briana Mezuk

Source: *American Journal of Epidemiology*, 172, 11 (December 1, 2010): 1238-1249

**Abstract:** Prevalence of depression is associated inversely with some indicators of socioeconomic position, and the stress of social disadvantage is hypothesized to mediate this relation. Relative to whites, blacks have a higher burden of most physical health conditions but, unexpectedly, a lower burden of depression. This study evaluated an etiologic model that



integrates mental and physical health to account for this counterintuitive patterning. The Baltimore Epidemiologic Catchment Area Study (Maryland, 1993–2004) was used to evaluate the interaction between stress and poor health behaviors (smoking, alcohol use, poor diet, and obesity) and risk of depression 12 years later for 341 blacks and 601 whites. At baseline, blacks engaged in more poor health behaviors and had a lower prevalence of depression compared with whites (5.9% vs. 9.2%). The interaction between health behaviors and stress was nonsignificant for whites (odds ratio (OR) = 1.04, 95% confidence interval: 0.98, 1.11); for blacks, the interaction term was significant and negative ( $\beta$ : -0.18,  $P < 0.014$ ). For blacks, the association between median stress and depression was stronger for those who engaged in zero (OR = 1.34) relative to 1 (OR = 1.12) and  $\geq 2$  (OR = 0.94) poor health behaviors. Findings are consistent with the proposed model of mental and physical health disparities.

Keywords: Adaptation- psychological, depression, health behavior, health status disparities, stress- psychological

A4860: Sleep, Mental Health Status, and Medical Errors among Hospital Nurses in Japan

Author: Mayumi Arimura

Source: *Industrial Health*, 48, 6 (November 2010): 811-817

Abstract: Medical error involving nurses is a critical issue since nurses' actions will have a direct and often significant effect on the prognosis of their patients. To investigate the significance of nurse health in Japan and its potential impact on patient services, a questionnaire-based survey amongst nurses working in hospitals was conducted, with the specific purpose of examining the relationship between shift work, mental health and self-reported medical errors. Multivariate analysis revealed significant associations between the shift work system, General Health Questionnaire (GHQ) scores and nurse errors: the odds ratios for shift system and GHQ were 2.1 and 1.1, respectively. It was confirmed that both sleep and mental health status among hospital nurses were relatively poor, and that shift work and poor mental health were significant factors contributing to medical errors.

Keywords: Medical errors, mental health, nurse, shift work, sleep problems, Japan

## **Pediatrics**

A4762: Parents' Experiences of Caring for a Child with Chronic Pain

Author: Donald Maciver

Source: Qualitative Health Research, 20, 9 (September 2010): 1272-1282

Abstract: Involvement of parents in their children's pain management is universally accepted as best practice, yet there is little understanding of their needs. Twelve parents of children with chronic pain were recruited to this study in which the impact of caring for a child with chronic pain was explored. All parents started in distress, and most moved into a stance that enabled them to balance the child's needs with their own. These parents discussed "stepping back" from their child's distress and gaining mastery over fearful emotional reactions. A minority remained in distress, finding an adaptive response to the child's pain challenging. Catastrophic thinking, fear of pain, and the desire to fulfill a nurturing parental role led parents to place themselves continually "on call." Findings indicate that parents might require support to care effectively for their children, and that many of the actions necessitated by children's pain require complex and counterintuitive decisions.

Keywords: Adolescents, children, families, chronic pain, pediatrics

## Pregnancy

A4753: Breast cancer characteristics are modified by first trimester human placenta: in vitro co-culture study

Author: S. Tartakover-Matalon

Source: Human Reproduction, 25, 10 (October 2010): 2441-2454

**Abstract:** Background: Pregnant women with breast cancer present with a more advanced disease compared with non-pregnant women. Nevertheless, breast cancer metastasis to the placenta is rare. Trophoblast/tumor implantations share the same biochemical mediators, while only the first is stringently controlled. We hypothesized that the same mechanisms that affect/restrain placental implantation may inhibit metastatic growth in the placenta. We aimed to analyze the effects of human placenta on breast cancer cells. Methods: First trimester human placental explants were co-cultured with MCF-7/T47D-eGFP tagged cells. Following culture, placenta/cancer cells/both were fixed, paraffin embedded and sliced for immunohistochemical analysis or sorted by their eGFP expression for future analysis. The tested parameters were: proliferation (immunohistochemistry)/cell cycle (FACS), apoptosis (immunohistochemistry/FACS), cell count/adhesion/distribution around the placenta (cell sorter, visual observation and counting), matrix metalloproteinase activity (zymogram) and estrogen receptor (ER) expression (western blotting, immunohistochemistry). Results: Reduced breast cancer cell numbers (45%↓, 48%↓ for MCF-7/T47D, respectively,  $P < 0.05$ ) were observed near the placenta. The placenta elevated MCF-7 sub-G1 phase and modestly elevated apoptosis (3–17%↑ for T47D/MCF-7, respectively,  $P < 0.05$ ). Our findings demonstrate breast cancer cell migration from the placenta as: (i) T47D/MCF-7 cells changed their morphology to that of motile cells; (ii) elevated MMPs activity was found in the co-culture; (iii) placental soluble factors detached breast cancer cells; and (4) the placenta reduced MCF-7/T47D cells' ER expression (a characteristic of motile cells). Conclusions: MCF-7/T47D cells are eliminated from the placental surroundings. Analyzing the causes of these phenomena may suggest biological pathways for this event and raise new therapeutic targets.

Keywords: Pregnancy, breast cancer, human placenta

A4757: Violence against Women by their Intimate Partner during Pregnancy and Postnatal Depression: A Prospective Cohort Study

Author: Ana Bernarda Ludermit

Source: Lancet, 376, 9744 (September 11, 2010): 903-910

**Abstract:** Partner violence against women is common during pregnancy and might have an adverse effect on the mental health of women after delivery. We aimed to investigate the

association of postnatal depression with psychological, physical, and sexual violence against women by their intimate partners during pregnancy. **Methods** In a prospective cohort study undertaken in Recife, northeastern Brazil, between July, 2005, and December, 2006, we enrolled pregnant women (aged 18-49 years) in their third trimester of pregnancy who were attending primary health-care clinics. The women were interviewed during pregnancy and after delivery. The form of partner violence in pregnancy was assessed with a validated questionnaire, and the Edinburgh postnatal depression scale was used to measure postnatal depression. Associations were estimated with odds ratios (ORs), adjusted for confounding factors contributing to the association between postnatal depression and intimate partner violence. **Findings** 1133 pregnant women were eligible for inclusion in the study, of whom 1045 had complete data for all variables and were included in the analysis. 270 women (25.8%, 95% CI 23.2-28.6) had postnatal depression. The most common form of partner violence was psychological (294 [28.1%, 25.4-31.0]). Frequency of psychological violence during pregnancy was positively associated with occurrence of postnatal depression, and although this association was attenuated after adjustment, women reporting the highest frequency of psychological violence were more likely to have postnatal depression even after adjustment (adjusted OR 2.29, 95% CI 1.15-4.57). Women who reported physical or sexual violence in pregnancy were more likely to develop postnatal depression (OR 3.28, 2.29-4.70), but this association was substantially reduced after adjustment for psychological violence and confounding factors. **Interpretation** Psychological violence during pregnancy by an intimate partner is strongly associated with postnatal depression, independently of physical or sexual violence. This finding has important policy implications since most social policies focus on prevention and treatment of physical violence. **Funding** Departamento de Ciência e Tecnologia da Secretaria de Ciência, Tecnologia, e Insumos Estratégicos, and Conselho Nacional de Desenvolvimento Científico e Tecnológico (Brazil).

**Keywords:** Cohort studies, psychological violence, sexual violence, pregnant women, customer information systems

A4759: Association between Pregnancy Weight Gain and Birthweight: A within-family Comparison

**Author:** David S Ludwig and Janet Currie

**Source:** Lancet, 376, 9745 (September 18, 2010): 984-990

**Abstract:** Excessive weight gain during pregnancy seems to increase birthweight and the offspring's risk of obesity later in life. However, this association might be confounded by genetic and other shared effects. We aimed to examine the association between maternal weight gain

and birthweight using state-based birth registry data that allowed us to compare several pregnancies in the same mother. **Methods** In this population-based cohort study, we used vital statistics natality records to examine all known births in Michigan and New Jersey, USA, between Jan 1, 1989, and Dec 31, 2003. From an initial sample of women with more than one singleton birth in the database, we made the following exclusions: gestation less than 37 weeks or 41 weeks or more; maternal diabetes; birthweight less than 500 g or more than 7000 g; and missing data for pregnancy weight gain. We examined how differences in weight gain that occurred during two or more pregnancies for each woman predicted the birthweight of her offspring, using a within-subject design to reduce confounding to a minimum. **Findings** Our analysis included 513 501 women and their 1 164 750 offspring. We noted a consistent association between pregnancy weight gain and birthweight ( $\beta$  7.35, 95% CI 7.10-7.59,  $p < 0.0001$ ). Infants of women who gained more than 24 kg during pregnancy were 148.9 g (141.7-156.0) heavier at birth than were infants of women who gained 8-10 kg. The odds ratio of giving birth to an infant weighing more than 4000 g was 2.26 (2.09-2.44) for women who gained more than 24 kg during pregnancy compared with women who gained 8-10 kg. **Interpretation** Maternal weight gain during pregnancy increases birthweight independently of genetic factors. In view of the apparent association between birthweight and adult weight, obesity prevention efforts targeted at women during pregnancy might be beneficial for offspring. **Funding** US National Institutes of Health.

**Keywords:** Pregnancy weight gains, birth weights, maternal weight gain, population-based cohorts

A4824: Cigarette smoking during early pregnancy reduces the number of embryonic germ and somatic cells

**Author:** L. S. Mamsen

**Source:** Human Reproduction, 25, 11 (November 2010): 2755-2761

**Abstract:** **Background:** Cigarette smoking during pregnancy is associated with negative reproductive consequences for male fetuses in adult life such as reduced testicular volume and sperm concentration. The present study evaluates the number of germ and somatic cells present in human embryonic first-trimester gonads in relation to maternal smoking. **Methods:** The study includes 24 human first-trimester testes, aged 37–68 days post-conception, obtained from women undergoing legal termination of pregnancy. A questionnaire was used to obtain information about smoking and drinking habits during pregnancy. Validated stereological methods were used to estimate gonadal cell numbers in histological sections. Results were also evaluated in the context of previously published data on ovaries from our laboratory. **Results:** A

significant reduction in the number of germ cells by 55% [95% confidence interval (CI) 74–21% reduction,  $P = 0.004$ ] and somatic cells by 37% (95% CI 59–3%,  $P = 0.023$ ) was observed in testes prenatally exposed to maternal cigarette smoking, compared with unexposed. The effect of maternal smoking was dose-dependent being higher in the heavy smokers and remained consistent after adjusting for possible confounders such as alcohol and coffee consumption ( $P = 0.002$ ). The number of germ cells in embryonic gonads, irrespective of gender, was also significantly reduced by 41% (95% CI 58–19%,  $P = 0.001$ ) in exposed versus non-exposed embryonic gonads. Conclusions: Prenatal exposure to maternal cigarette smoke reduces the number of germ and somatic cells in embryonic male and female gonads. This effect may have long-term consequences on the future fertility of exposed offspring. These findings may provide one potential cause of the reduced fertility observed during recent years.

Keywords: Germ cells, human embryos, first-trimester pregnancy, smoking

A4863: Birth weight and adult hypercholesterolemia: Subgroups of small-for-gestational-age based on maternal smoking status during pregnancy

Author: Xiaozhong wen

Source: *Epidemiology*, 21, 6 (November 2010): 786-790

Abstract: Background: Being born small-for-gestational-age (SGA) is associated with hypercholesterolemia in later life. It is possible that only certain subgroups of SGA are at elevated risk for hypercholesterolemia. We examined the associations between SGA subgroups based on levels of maternal smoking during pregnancy and adult hypercholesterolemia. Methods: A subsample of 1625 adult offspring from the Collaborative prenatal project were followed at mean age 39 years. Subjects were classified by recorded fetal growth and maternal smoking status during pregnancy. Clinical diagnosis of hypercholesterolemia was obtained in interviews. Results: Compared with the appropriate-for-gestational-age subgroup without maternal smoking during pregnancy, only SGA subgroups with maternal smoking during pregnancy had higher risk of hypercholesterolemia: for heavy smoking, adjusted hazard ratio= 2.5 (95% confidence interval= 1.4-4.3); moderate smoking, 1.7 (1.0-2.8); nonsmoking, 1.1 (0.5-2.1). Conclusion: Only SGA infants whose mothers smoked during pregnancy had elevated risk of hypercholesterolemia in adulthood.

Keywords: Maternal smoking, pregnancy, hypercholesterolemia, birth weight

A4867: Parity pattern of early childbearing in Bangladeshi women: A multivariate statistical analysis

Author: Roshidul Islam

Source: South Asian Anthropologist, 10, 2 (September, 2010): 175-179

Abstract: Early pregnancy is a critical issue in safe motherhood. Childbearing in Bangladesh is characterized by early start of motherhood, quick progress still the peak age of reproduction and slow progress still the end of childbearing period. This article presents the results of logistic regression analysis of early childbearing. Out of 11 variables, 8 variables influence the early childbearing period, they are, education of women, place of residence, religion, age at first marriage, father's education, marital duration, women work status and contraceptive use.

Keywords: Early childbearing, Bangladeshi women, multivariate analysis

A4872: Etiology of recurrent pregnancy loss in women over the age of 35 years

Author: Kerri Marquard

Source: Fertility and Sterility, 94, 4 (September 2010): 1473-1477

Abstract: Objective: To determine the rate of embryonic chromosomal abnormalities, thrombophilias, and uterine anomalies in women over the age of 35 years with recurrent pregnancy loss (RPL). Design: Retrospective cohort study. Setting: Academic reproductive endocrinology and infertility clinic. Patient(s): Women  $\geq 35$  years old with  $\geq 3$  first trimester miscarriages. Intervention(s): None. Main Outcome Measure(s): Age, number of prior losses, cytogenetic testing of the products of conception (POC), uterine cavity evaluation, parental karyotype, TSH, and antiphospholipid antibody (APA) and thrombophilia testing. Aneuploidy in the POC in women with RPL was compared with sporadic miscarriages ( $\leq 2$  losses) in women  $\geq 35$  years. Result(s): Among 43 RPL patients, there were 50 miscarriages in which cytogenetic analysis was performed. In the RPL group, the incidence of chromosomal abnormalities in the POC was 78% (39 out of 50) compared with a 70% incidence (98 out of 140) in the sporadic losses. Thrombophilia results in the RPL patients were normal in 38 patients, four patients had APA syndrome, and one had protein C deficiency. Forty out of 43 had normal uterine cavities. Both TSH and parental karyotypes were normal in all of the patients tested. When the evaluation of RPL included karyotype of the POC, only 18% remained without explanation. However, without fetal cytogenetics, 80% of miscarriages would have been unexplained. Conclusion(s): In older patients with RPL, fetal chromosomal abnormalities are responsible for the majority of miscarriages. Other causes were present in only 20% of cases.

Keywords: Recurrent pregnancy loss, maternal age, spontaneous abortion, chromosome

## Psychology

A4779: Long-term economic costs of psychological problems during childhood

Author: James Patrick Smitha and Gillian C. Smithb

Source: Social Science & Medicine, 71, 1 (July 2010): 110-115

Abstract: Childhood psychological conditions including depression and substance abuse are a growing concern among American children, but their long-term economic costs are unknown. This paper uses unique data from the US Panel Study of Income Dynamics (PSID) following groups of siblings and their parents for up to 40 years prospectively collecting information on education, income, work, and marriage. Following siblings offers an opportunity to control for unobserved family and neighborhood effects. A retrospective child health history designed by the author was placed into the 2007 PSID wave measuring whether respondents had any of 14 childhood physical illnesses or suffered from depression, substance abuse, or other psychological conditions. Large effects are found on the ability of affected children to work and earn as adults. Educational accomplishments are diminished, and adult family incomes are reduced by 20% or \$10,400 per year with \$18,000 less family household assets. Lost income is partly a consequence of seven fewer weeks worked per year. There is also an 11% point lower probability of being married. Controlling for physical childhood diseases shows that these effects are not due to the co-existence of psychological and physical diseases, and estimates controlling for within-sibling differences demonstrate that these effects are not due to unobserved common family differences. The long-term economic damages of childhood psychological problems are large—a lifetime cost in lost family income of approximately \$300,000, and total lifetime economic cost for all those affected of 2.1 trillion dollars.

Keywords: Children, economic cost, psychological health, USA, family income

A4781: Does education buffer the impact of disability on psychological distress?

Author: Jornt J. Mandemakersa and Christiaan W.S. Mondenb

Source: Social Science & Medicine, 71, 2 (July 2010): 288-297

Abstract: This paper investigates whether education buffers the impact of physical disability on psychological distress. It further investigates what makes education helpful, by examining whether cognitive ability and occupational class can explain the buffering effect of education. Two waves of the 1958 British National Child Development Study are used to test the hypothesis that the onset of a physical disability in early adulthood (age 23 to 33) has a smaller



effect on psychological distress among higher educated people. In total 423 respondents (4.6%) experienced the onset of a physical disability between the ages of 23 and 33. We find that a higher educational level cushions the psychology impact of disability. Cognitive ability and occupational class protect against the effect of a disability too. The education buffer arises in part because individuals with a higher level of education have more cognitive abilities, but the better social position of those with higher levels of education appears to be of greater importance. Implications of these findings for the social gradient in health are discussed.

Keywords: UK, psychological distress, education, cognitive ability, social class

A4859: Work-family Conflict in Japan: How Job and Home Demands Affect Psychological Distress

Author: Akihito Shimazu

Source: *Industrial Health*, 48, 6 (November 2010): 766-774

Abstract: The aim of the present study was to examine how job and home demands are related to psychological distress in a sample of Japanese working parents with preschool children (n=196). We expected that job and home demands are partially related to psychological distress through work-to-family conflict (WFC) and family-to-work conflict (FWC), respectively. Structural equation modeling showed that, as expected, home demands were partially related to psychological distress, both directly and indirectly through FWC. In contrast, job demands were only directly related to psychological distress. The differences between the roles of FWC and WFC are discussed using identity theory.

Keywords: Home demands, Job demands, psychological distress, Japan, work-family conflict

A4861: Pain Catastrophizing and Lower Physical Fitness in a Sample of Computer Screen Workers with Early Non-specific Upper Limb Disorders: A Case-control Study

Author: Marjon D.F. Van Eijsden-Besseling

Source: *Industrial Health*, 48, 6 (November 2010): 818-823

Abstract: In computer workers psychological factors and physical fitness may play an important role in the onset and course of non-specific work-related upper limb disorders (WRULD) beyond socio-demographic factors. Based on our experiences in daily practice we assumed that pain catastrophizing and other psychological variables such as perfectionism, anxiety state and trait,

and low physical fitness, are possibly associated with the occurrence of WRULD. We aim to study the association between pain catastrophizing, perfectionism, anxiety (state and trait), physical fitness, sex and level of education and the occurrence of WRULD, controlling for age as a confounder. Eighty-eight computer workers with early non-specific WRULD, who had been recruited for an intervention study, were compared with 31 healthy computer workers (controls) recruited from different departments of a university. This cross-sectional case-control study examined the influence of aforementioned variables on WRULD by means of logistic regression analyses. Among the different predictor variables investigated, pain catastrophizing (OR=1.37; 95%CI 1.17-1.59) and lower physical fitness had a positive relationship with WRULD (OR=0.65; 95%CI 0.48-0.87). According to this study, pain catastrophizing and lower physical fitness seem to be associated with early non-specific WRULD in computer workers. Prospective studies are needed to unravel these relationships.

Keywords: Case-control study, pain catastrophizing, physical fitness, computer workers

## **Reproductive Epidemiology**

A4838: Reproductive Tract Infections among Women of Rural Community in Mewat, India

Author: Lalima Srivastava

Source: Journal of Health Management, 12, 4 (December 20, 2010 ): 519-538

Abstract: Mewat is a backward area of north India, dominated by Meo community, a Muslim Rajput community following a mixture of Hindu and Islamic customs, practices and beliefs. Illiteracy, unhealthy lives, burden of frequent pregnancies, strong traditional culture and practices put the Meo women at higher risk of acquiring Reproductive Tract Infections (RTIs). A community based cross-sectional study was undertaken among married women (between 15 and 49 yrs) in Mewat. The objective of the study was to understand the socio-demographic and socio-cultural factors that increase vulnerability to RTI among women. Both qualitative and quantitative data were collected. This article presents the findings of the study. 72.6 per cent of the respondents reported one or more symptoms of RTI. Only 31 per cent of the respondents were aware about RTI and 21 per cent about HIV/AIDs. Bivariate analysis indicated statistically significant association between educational level, age at marriage, place of delivery and awareness about RTI with presence of self-reported symptoms of RTI among the study population. Improving literacy and increasing awareness level among women about reproductive health is needed to reduce incidence of RTI in the study area.

Keywords: Mewat, women, reproductive tract infections, health

## Reproductive Health

A4797: Privatisation in reproductive health services in Pakistan: three case studies

Author: T. K. Sundari Ravindran

Source: Reproductive health matters, 18, 36 (November 2010): 13-24

Abstract: Privatisation in Pakistan's health sector was part of the Structural Adjustment Programme that started in 1998 following the country's acute foreign exchange crisis. This paper examines three examples of privatisation which have taken place in service delivery, management and capacity-building functions in the health sector: 1) large-scale contracting out of publicly-funded health services to private, not-for-profit organisations; 2) social marketing/franchising networks providing reproductive health services; and 3) a public-private partnership involving a consortium of private players and the government of Pakistan. It assesses the extent to which these initiatives have contributed to promoting equitable access to good quality, comprehensive reproductive health services. The paper concludes that these forms of privatisation in Pakistan's health sector have at best made available a limited range of fragmented reproductive health services, often of sub-optimal quality, to a fraction of the population, with poor returns in terms of health and survival, especially for women. This analysis has exposed a deep-rooted malaise within the health system as an important contributor to this situation. Sustained investment in health system strengthening is called for, where resources from both public and private sectors are channelled towards achieving health equity, under the stewardship of the state and with active participation by and accountability to members of civil society.

Keywords: Reproductive health policy, privatisation, social franchising, public-private partnerships, Pakistan

A4871: Reproductive health of women electing bariatric surgery

Author: Gabriella G. Gosman

Source: Fertility and Sterility, 94, 4 (September 2010): 1426-1431

Abstract: Objective: To describe the reproductive health history and characteristics of women having bariatric surgery and to determine whether this differs by age of onset of obesity. Design: Retrospective and cross-sectional analyses of self-reported survey data. Setting: Six sites of the Longitudinal Assessment of Bariatric Surgery-2 study. Patient(s): The study included 1,538 females having bariatric surgery. Intervention(s): None. Main Outcome Measure(s):

Reported polycystic ovary syndrome (PCOS), pregnancy and fertility history, contraceptive use, and plans for pregnancies. Result(s): Mean age was 44.8 years (range, 18–78 years); mean body mass index was 47.2 kg/m<sup>2</sup> (range, 33.8–87.3 kg/m<sup>2</sup>). PCOS had been diagnosed by a health care provider in 13.1% of subjects. Of women who had tried to conceive, 41.9% experienced infertility and 61.4% had a live birth after experiencing infertility. In the whole group, prior live birth was reported by 72.5%. Women who were obese by 18 years old were more likely to report PCOS and infertility and less likely to have ever been pregnant, compared with women who became obese later in life. Future pregnancy was important to 30.3% of women younger than 45 years, whereas 48.6% did not plan to become pregnant in the future. In the year before surgery, 51.8% used contraception. Conclusion(s): Self-reporting of obesity by age 18 appears to be related to reproductive morbidity. Women undergoing bariatric surgery have important reproductive health care needs, including reliable contraception and counseling about plans for postoperative pregnancy.

Keywords: Bariatric surgery, women's health, pregnancy, infertility, polycystic ovary syndrome

## Social Science

A4763: Forced migration and child health and mortality in Angola

Author: W. A. Avogo and V. Agadjanian

Source: Social Science and Medicine, 70, 1 (January 2010): 53-60

Abstract: This study investigates the effects of forced migration on child survival and health in Angola. Using survey data collected in Luanda, Angola, in 2004, just two years after the end of that country's prolonged civil war, we compare three groups: migrants who moved primarily due to war, migrants whose moves were not directly related to war, and non-migrants. First, we examine the differences among the three groups in under-five mortality. Using an event-history approach, we find that hazards of child death in any given year were higher in families that experienced war-related migration in the same year or in the previous year, net of other factors. To assess longer-term effects of forced migration, we examine hazards of death of children who were born in Luanda, i.e., after migrants had reached their destinations. We again observe a disadvantage of forced migrants, but this disadvantage is explained by other characteristics. When looking at the place of delivery, number of antenatal consultations, and age-adequate immunization of children born in Luanda, we again detect a disadvantage of forced migrants relative to non-migrants, but now this disadvantage also extends to migrants who came to Luanda for reasons other than war. Finally, no differences across the three groups in child morbidity and related health care seeking behavior in the two weeks preceding the survey are found. We interpret these results within the context of the literature on short- and long-term effects of forced migration on child health.

Keywords: Childhood mortality, child health, forced migration, angola

A4764: Promoting health equity in conflict-affected fragile states

Author: Olga Bornemisza

Source: Social Science and Medicine, 70, 1 (January 2010): 80-88

Abstract: Issues around health equity in conflict-affected fragile states have received very little analysis to date. This paper examines the main factors that threaten health equity, the populations that are most vulnerable and potential strategies to improve health equity. The methods employed are a review of the published and grey literature, key informant interviews and an analysis of data on social determinants of health indicators. A new conceptual framework was developed outlining types of inequity, factors that influence equity and possible

strategies to strengthen equity. Factors that affect equity include displacement, gender and financial barriers. Strategies to strengthen health equity include strengthening pro-equity policy and planning functions; building provider capacity to provide health services; and reducing access and participation barriers for excluded groups. In conclusion, conflict is a key social determinant of health. More data is needed to determine how conflict affects within-country and between-country equity, and better evaluated strategies are needed to reduce inequity.

Keywords: Health, equity, fragile states, conflict, violence

A4765: Human rights, transitional justice, public health and social reconstruction

Author: Phuong Ngoc Pham

Source: Social Science and Medicine, 70, 1 (Jan 2010): 98-105

Abstract: Mass violence, armed conflict, genocide, and complex humanitarian emergencies continue to create major social and public health disasters at the dawn of the 21st Century. Transitional justice, a set of policies designed to address the effects of war on traumatized communities and bring justice, lies at the nexus of public health, conflict, and social reconstruction. Despite the paucity of empirical evidence, advocates of transitional justice have claimed that it can alleviate the effects of trauma, deter future violence, and bring about social reconstruction in war-affected communities. Empirical evidence – including new data and analyses presented in this article – suggests a link between trauma, mental health and attitudes towards and responses to transitional justice programs, but there has been little theoretical discussion about the intersection between public health and transitional justice, and even less empirical research to generate discussion between these two fields. Yet, public health professionals have an important role to play in assessing the impact of transitional justice on communities affected by mass violence. In this paper, we offer a conceptual model for future research that seeks to examine the relationship between transitional justice programs and their potential value to the fields of medicine and public health and discuss the methodological issues and challenges to a comprehensive evaluation of this relationship. To illustrate the discussion, we examine new data and analyses from two cases of contemporary conflicts, eastern Democratic Republic of Congo (DRC) and northern Uganda.

Keywords: Human rights, transitional justice, social reconstruction, Uganda, democratic republic of Congo

A4766: Race disparities in low birth weight in the U.S. south and the rest of the nation

Author: Lenna Nepomnyaschy

Source: *Social Science and Medicine*, 70, 5 (March 2010): 684-691

Abstract: There are well-documented and as yet unexplained disparities in birth outcomes by race in the USA. This paper examines the sources of disparities in low birth weight between blacks and whites in the US, by focusing on differences in disparities between two very distinct geographic areas, the Deep South and the rest of the country. Two findings from prior research drive the analyses: first, health overall is worse in the Deep South states; second, race disparities are smaller in the Deep South than in the rest of the nation. A number of potential explanations for these findings are examined using nationally representative data on approximately 8,000 children born in the US in 2001. Results suggest that, first, almost all of the increased burden of low birth weight in the Deep South states may be explained by differences in race composition and socioeconomic status between the Deep South and rest of the nation. Second, the slightly lower race disparities found in the Deep South states are being driven not by better outcomes for black mothers, but by two other factors: higher returns to socioeconomic status for black mothers and much worse outcomes for poor white mothers in the Deep South compared with the rest of the country.

Keywords: USA, low birth weight, race, regional variation, socioeconomic status

A4767: Perceived social position and health: Is there a reciprocal relationship?

Author: Dana Garbarski

Source: *Social Science and Medicine*, 70, 5 (March 2010): 692-699

Abstract: Recent work exploring the relationship between socioeconomic status and health has employed a psychosocial concept called perceived social position as a predictor of health. Perceived social position is likely the “cognitive averaging” (Singh-Manoux, Marmot, & Adler, 2005) of socioeconomic characteristics over time and, like other socioeconomic factors, is subject to interplay with health over the life course. Based on the hypothesis that health can also affect perceived social position, in this paper we used structural equation modeling to examine whether perceived social position and three different health outcomes were reciprocally related in the Wisconsin Longitudinal Study, a longitudinal cohort study of older adults in the United States. The relationship between perceived social position and health differed across health outcomes—self-reported health, the Health Utilities Index, and depressive symptoms—as well as across operationalizations of perceived social position—



compared to the population of the United States, compared to one's community, and a latent variable of which the two items are indicators. We found that perceived social position affected self-reported health when operationalized as latent and US perceived social position, yet there was a reciprocal relationship between self-reported health and community perceived social position. There was a reciprocal relationship between perceived social position and the Health Utilities Index, and depressive symptoms affected perceived social position for all operationalizations of perceived social position. The findings suggest that the causal relationship hypothesized in prior studies—that perceived social position affects health—does not necessarily hold in empirical models of reciprocal relationships. Future research should interrogate the relationship between perceived social position and health rather than assume the direction of causality in their relationship.

Keywords: USA, perceived social position, subjective social status, socioeconomic status, health utilities index, older adults

A4785: Poverty and common mental disorders in low and middle income countries: A systematic review

Author: Crick Lund

Source: *Social Science & Medicine*, 71, 3 (August 2010): 517-528

Abstract: In spite of high levels of poverty in low and middle income countries (LMIC), and the high burden posed by common mental disorders (CMD), it is only in the last two decades that research has emerged that empirically addresses the relationship between poverty and CMD in these countries. We conducted a systematic review of the epidemiological literature in LMIC, with the aim of examining this relationship. Of 115 studies that were reviewed, most reported positive associations between a range of poverty indicators and CMD. In community-based studies, 73% and 79% of studies reported positive associations between a variety of poverty measures and CMD, 19% and 15% reported null associations and 8% and 6% reported negative associations, using bivariate and multivariate analyses respectively. However, closer examination of specific poverty dimensions revealed a complex picture, in which there was substantial variation between these dimensions. While variables such as education, food insecurity, housing, social class, socio-economic status and financial stress exhibit a relatively consistent and strong association with CMD, others such as income, employment and particularly consumption are more equivocal. There are several measurement and population factors that may explain variation in the strength of the relationship between poverty and CMD. By presenting a systematic review of the literature, this paper attempts to shift the debate from questions about whether poverty is associated with CMD in LMIC, to questions about which

particular dimensions of poverty carry the strongest (or weakest) association. The relatively consistent association between CMD and a variety of poverty dimensions in LMIC serves to strengthen the case for the inclusion of mental health on the agenda of development agencies and in international targets such as the millenium development goals.

Keywords: Mental health, poverty, developing countries, depression, systematic review

A4786: Residential mobility in the UK during pregnancy and infancy: Are pregnant women, new mothers and infants 'unhealthy migrants'?

Author: Helena Tunstall

Source: Social Science & Medicine, 71, 4 (August 2010): 786-798

Abstract: People that move home within developed countries report, on average, better health than non-movers. Pregnant women, new mothers and infants are particularly mobile, but the limited evidence regarding the relationship between their mobility and health suggests they may not conform to the 'healthy migrant' effect. This paper examines the relationship between mobility and health among these groups in the UK, using logistic regression to analyse cross-sectional data for 18,197 families in the Millennium Cohort Study wave one. It compares health status variables among mobile and non-mobile families; describes mobile families' socio-demographic characteristics; explores associations between health outcomes, reasons for residential moves, and experiences of homelessness; and assesses the association between mobility and health care utilisation, social support and residential satisfaction. The paper concludes that mobile pregnant women, new mothers and infants do have poor health outcomes in comparison to non-movers, but this is primarily explained by their socio-demographic characteristics and the negative circumstances associated with a minority of their moves. Families that moved during pregnancy and infancy had worse self-rated health and depression among mothers, and lower birth weight and higher risk of accidents among infants, than non-movers. Mothers in mobile families were younger and had lower levels of education and owner-occupation than non-movers. After adjustment for socio-demographic characteristics mobility was weakly and non-significantly associated with most health variables with the exception of self-rated health and depression among mothers who moved for negative reasons (such as relationship breakdown or problems with neighbours), or had been homeless since birth. After adjustment mobile families had lower levels of most measures of health care utilisation compared to non-movers, but mothers did not report less frequent social contacts, and those that moved during infancy for positive reasons (such as wanting a better home or neighbourhood) had greater satisfaction with home and area.

Keywords: UK, residential mobility, pregnancy, health care, social support, Internal migration

A4795: Natural, the normal and the normative: Contested terrains in ageing and old age

Author: Ian Rees Jones and Paul F. Higgs

Source: Social Science & Medicine, 71, 8 (October 2010): 1513-1519

Abstract: Improvements in health and longevity in countries such as the UK and USA have radically destabilised notions of ageing and old age. From the 19th century onwards the idea of a natural lifecourse following normatively understood stages ending in infirmity and death has been challenged by social and bio-medical developments. Breakthroughs in bio-gerontology and in bio-medicine have created the possibility of an increasingly differentiated idea of normal ageing. The potential to overcome or significantly reduce the age-associated effects of bodies growing older has led many social gerontologists to argue for a return to a more 'normatively' based conception of ageing and old age. This paper examines and outlines the tensions between these different discourses and points out that our understanding of the norm is also fast changing as it intersects with the somatic diversity inherent in contemporary consumer society. Drawing on the theoretical work of Ulrich Beck and Zygmunt Bauman, this paper argues that the normalization of diversity leads to a reworking of the idea of normativity which in turn is reflected in profound transformations at the level of institutional arrangements and legal systems. Such changes not only lead to more discussion of what is legally and socially acceptable but also potentially lead to greater calls for regulation concerning outcomes. In this paper we argue that we need to distinguish between the newly reconfigured domains of the natural, the normal and the normative now being utilised in the understanding of ageing if we are to understand this important field of health.

Keywords: Ageing, old age, second modernity, normativity

A4813: Neighborhoods, daily activities, and measuring health risks experienced in urban environments

Author: Luke A. Basta

Source: Social Science & Medicine, 71, 11 (December 2010): 1943-1950

Abstract: Studies of place and health often classify a subject's exposure status according to that which is present in their neighborhood of residence. One's neighborhood is often proxied by designating it to be an administratively defined unit such as census tract, to make analysis feasible. Although it is understood that residential space and actual lived space may not correspond and therefore exposure misclassification may result, few studies have the opportunity to investigate the implications of this issue concretely. A population-based case-

control study that is currently underway provides one such opportunity. Adolescent victims of assault in Philadelphia, Pennsylvania, USA, and a control sample of adolescents drawn randomly from the community are being enrolled to study how alcohol consumption and time spent nearby alcohol outlets – individual-level and environmental-level risk factors for violence, respectively – over the course of daily activities relate to the likelihood of being assaulted. Data from a rapport-building exercise consist of hand-drawn sketches that subjects drew on street maps when asked to indicate the area considered their neighborhood. The main data consist of self-reported, detailed paths of the routes adolescents traveled from one location to the next over the course of one full day. Having noticed interesting patterns as the data collection phase proceeds, we present here an analysis conducted with the data of 55 control subjects between 15 and 19 years old. We found that hand-drawn neighborhoods and activity paths did not correspond to census tract boundaries, and time subjects spent in close proximity to alcohol outlets during their daily activities was not correlated with the prevalence of alcohol outlets in the census tract of their residence. This served as a useful example demonstrating how classifying subjects as exposed based solely on the prevalence of the exposure in the geographic area of their residence may misrepresent the exposure that is etiologically meaningful.

Keywords: Neighborhood, urban health, exposure misclassification, activity patterns, violence, time geography, adolescents, space, USA

A4827: Shorter Stay, Longer Life: Age at Migration and Mortality Among the Older Mexican-Origin Population

Author: Ronald J. Angel

Source: *Journal of Aging and Health*, 22, 7 (October 2010): 914-931

Abstract: Objectives: In this article, we investigate the association between age at migration and mortality during a 13-year period in a sample of Mexican American immigrants 65 and older at baseline. Method: We employ the Hispanic Established Populations for Epidemiologic Studies of the Elderly (H-PESE) to control for mortality-related health and social factors. Results: Our analyses show that the immigrant generation does not represent a homogeneous mortality risk category. Individuals who migrated to the United States in mature adulthood have a considerably lower risk of death than individuals who migrated in childhood or midlife. Chronic conditions or functional capacity do not account for these differences. Conclusion: Our findings suggest that standard risk pools may differ significantly on the basis of genetic and unmeasured life-course factors. A better understanding of the late-life immigrant mortality advantage has important implications for more effective and targeted social and medical interventions.

Keywords: Migration, Mexico, living arrangements, mortality

A4828: Old-Age Disability and Wealth among Return Mexican Migrants from the United States

Author: Rebeca Wong and Cesar Gonzalez-Gonzalez

Source: Journal of Aging and Health, 22, 7 (October 2010): 932-954

Abstract: Objective: To examine the old-age consequences of international migration with a focus on disability and wealth from the perspective of the origin country. Method: Analysis sample includes persons aged 60+ from the Mexican Health and Aging Study, a national survey of older adults in Mexico in 2001. Univariate methods are used to present a comparative profile of return migrants. Multivariate models are estimated for physical disability and wealth. Results: Gender differences are profound. Return migrant women are more likely to be disabled while men are wealthier than comparable older adults in Mexico. Discussion: Compared to current older adults, younger cohorts of Mexico—U.S. migrants increasingly include women, and more migrants seem likely to remain in the United States rather than return, thus more research will be needed on the old-age conditions of migrants of both countries.

Keywords: Migration, aging, Mexico, disability.

A4829: Return Migration and the Health of Older Aged Parents: Evidence From Rural Thailand

Author: Zachary Zimmer and John Knodel

Source: Journal of Aging and Health, 22, 7 (October 2010): 955-976

Abstract: Objective: To examine the extent to which an association exists between health of older parents and return migration of children in rural Thailand. Method: Data come from the 2006 Migration Impact Survey specifically designed to obtain information on the impact of migration on older adults in rural areas. Associations are examined from both the perspectives of parents (N = 883) and migrating children (N = 2,150) using equations that adjust for demographic characteristics of parents and children and factors that may indicate unmet support needs. Results: A robust association with poor health promoting migration returns from both parent and child perspective exists and remains even with controls that might attenuate the relationship. Discussion: Although media discussions have pointed out dangers of out-migration for older adults, little systematic evidence exists. This study supports the viewpoint that accommodations for older adults can be made despite social changes promoting out-migration and demographic aging of the population.

Keywords: Demography, migration, Thailand

A4839: Intergenerational Mobility in Educational and Occupational Attainment: A Comparative Study of Social Classes in India

Author: Rajarshi Majumder

Source: Margin: The Journal of Applied Economic Research, 4, 4 (November 17, 2010): 463-494

Abstract: Disparities between social groups transcend the boundary of current generation and perpetuate across future generations as well. This is manifested as low intergenerational mobility in terms of both education and occupation in developing countries in general, and among specific ethnic groups within those countries in particular. This paper examines the extent of intergenerational mobility in both educational and occupational attainments for diverse social groups in India to understand the inertia of disparities prevalent. Results indicate strong intergenerational stickiness in both educational achievement and occupational distribution among the scheduled castes and tribes who have been discriminated against historically. Occupational mobility is lower than educational mobility indicating that educational progress is not being transformed to occupational improvement and bringing up the possibility of discrimination in the labour market. This also brings to the fore the fact that historical social exclusion has had a long-run effect and the inertia is quite strong.

Keywords: Intergenerational mobility, education, occupational choice, social disparity, India

A4840: Gender and Migration from Albania

Author: Guy Stecklov

Source: Demography, 47, 4 (November, 2010): 935-961

Abstract: This article examines the dynamics and causes of the shift in the gender composition of migration, and more particularly, in women's access to migration opportunities and decision making. Our analysis focuses on Albania, a natural laboratory for studying international migration where out migration was essentially nonexistent from the end of World War II to the end of the 1980s. Interest in the Albanian case is heightened because of the complex layers of inequality existing at the time when migration began: relatively low levels of inequality within the labor market and educational system- a product of the communist era-while household relations remained heavily steeped in tradition and patriarchy. We use micro-level data from the Albania 2005 living Standards Measurement Study, including migration histories for family members since migration began. Based on discrete-time hazard models, the analysis shows a dramatic increase in male migration and a gradual and uneven expansion of the female proportion of this international migration. Female migration, which is shown to be strongly

associated with education, wealth, and social capital, appears responsive to economic incentives and constraints. Using information on the dependency of female migration to the household demographic structure as well as the sensitivity of female migration to household-level shocks, we show how household-level constraints and incentives affect male and female migration differently. Throughout this period, however, women's migration behavior appears more directly aligned with household-level factors and there is little evidence to suggest that increased female migration signals rising behavioral independence among Albanian women.

Keywords: Migration, gender, Albania

A4841: Kinship Institutions and Sex Ratios in India

Author: Tanika Chakraborty and Sukko Kim

Source: *Demography*, 47, 4 (November, 2010): 989-1012

Abstract: This article explores the relationship between Kinship institutions and sex ratios in India at the turn of the twentieth century. Because kinship rules vary by caste, language, religion, and region, we construct sex ratios by these categories at the district level by using data from the 1901 Census of India for Punjab (North), Bengal (East) and Madras (South). We find that the male-to-female sex ratio varied positively with caste rank, fell as one moved from the North to the East and then to the South, was higher for Hindus than for Muslims, and was higher for northern Indo-Aryan speakers than for the southern Dravidian-speaking people. We argue that these systematic patterns in the data are consistent with variations in the institution of family, kinship, and inheritance.

Keywords: India, Kinship Institutions

## **Tuberculosis**

A4751: National Survey of Tuberculosis Prevalence in Viet Nam

Author: Nguyen Binh Hoa

Source: Bulletin of the World Health Organization, 88, 4 (April 2010): 273-280

**Abstract:** **Objective:** To estimate the prevalence of tuberculosis in Viet Nam with data from a population-based survey, compare it with the prevalence estimated by the World Health Organization, and identify major demographic determinants of tuberculosis prevalence. **Methods:** A cross-sectional survey with multistage cluster sampling, stratified by urban, rural and remote areas, was done in 2006–2007 in 70 communes. All inhabitants aged  $\geq 15$  years were invited for cough and chest X-ray examination. Participants with findings suggestive of tuberculosis provided sputum specimens for smear examination and culture. Point prevalence estimates, 95% confidence intervals and design effects were calculated. Confidence intervals and P-values were adjusted for the cluster design. **Findings:** Of 114 389 adult inhabitants, 94 179 (82.3%) were screened. Of 87 314 (92.7%) screened by both questionnaire and chest X-ray, 3522 (4.0%) had productive cough, 518 (0.6%) had a recent history of tuberculosis and 2972 (3.4%) had chest X-ray abnormalities suggestive of tuberculosis. Sputum tests were done for 7648 participants. Sputum test, bacterial culture or both confirmed 269 tuberculosis cases, 174 of which were smear-positive. The prevalence rate of smear-positive tuberculosis was 145 per 100 000 (95% confidence interval: 110–180) assuming no tuberculosis in persons aged  $< 15$  years. Prevalence was 5.1 times as high in men as in women, increased with age, was higher in rural than in urban or remote areas and showed a north-to-south gradient. **Conclusion:** In Viet Nam, the tuberculosis prevalence rate based on positive sputum smear tests was 1.6 times as high as previously estimated. Age and sex patterns were consistent with notification data. Tuberculosis control should remain a high priority in Viet Nam.

**Keywords:** Viet Nam, national survey, health organization, demographic determinants, tuberculosis



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