Abortion

A4954: Abortion Incidence and Postabortion Care in Rwanda

Author: Paulin Basinga and others

Source: Studies in Family Planning, 43, 1(March, 2012):11-20

Abstract: Abortion is illegal in Rwanda except when necessary to protect a woman's physical health or to save her life. Many women in Rwanda obtain unsafe abortions, and some experience health complications as a result. To estimate the incidence of induced abortion, we conducted a national sample survey of health facilities that provide postabortion care and a purposive sample survey of key informants knowledgeable about abortion conditions. We found that more than 16,700 women received care for complications resulting from induced abortion in Rwanda in 2009, or 7 per 1,000 women aged 15–44. Approximately 40 percent of abortions are estimated to lead to complications requiring treatment, but about a third of those who experienced a complication did not obtain treatment. Nationally, the estimated induced abortion rate is 25 abortions per 1,000 women aged 15–44, or approximately 60,000 abortions annually. An urgent need exists in Rwanda to address unmet need for contraception, to strengthen family planning services, to broaden access to legal abortion, and to improve postabortion care.

Keywords: Abortion, Postabortion care, Rwanda

A4995: Induced abortion: incidence and trends worldwide from 1995 to 2008

Author: Gilda Sedgh and others

Source: Lancet, 379, 9816 (February 18-24, 2012):625 – 632

Abstract: **Background:** Data of abortion incidence and trends are needed to monitor progress toward improvement of maternal health and access to family planning. To date, estimates of safe and unsafe abortion worldwide have only been made for 1995 and 2003. **Methods:** We used the standard WHO definition of unsafe abortions. Safe abortion estimates were based largely on official statistics and nationally representative surveys. Unsafe abortion estimates were based primarily on information from published studies, hospital records, and surveys of women. We used additional sources and systematic approaches to make corrections and projections as needed where data were misreported, incomplete, or from earlier years. We assessed trends in abortion incidence using rates developed for 1995, 2003, and 2008 with the same methodology. We used linear regression models to explore the association of the legal

status of abortion with the abortion rate across subregions of the world in 2008. **Findings:** The global abortion rate was stable between 2003 and 2008, with rates of 29 and 28 abortions per 1000 women aged 15—44 years, respectively, following a period of decline from 35 abortions per 1000 women in 1995. The average annual percent change in the rate was nearly 2·4% between 1995 and 2003 and 0·3% between 2003 and 2008. Worldwide, 49% of abortions were unsafe in 2008, compared to 44% in 1995. About one in five pregnancies ended in abortion in 2008. The abortion rate was lower in subregions where more women live under liberal abortion laws ($p<0·05$). **Interpretation:** The substantial decline in the abortion rate observed earlier has stalled, and the proportion of all abortions that are unsafe has increased. Restrictive abortion laws are not associated with lower abortion rates. Measures to reduce the incidence of unintended pregnancy and unsafe abortion, including investments in family planning services and safe abortion care, are crucial steps toward achieving the Millennium Development Goals.

Keywords: Abortion, Maternal health, Family planning

Arthritis Disease

A4986: Living with Arthritis: Using Self-Management of Valued Activities to Promote Health

Author: Megan C. Janke and others

Source: Qualitative Health Research, 22, 3 (March, 2012): 360-372

Abstract: In this article, we explore how adults with arthritis use self-care strategies in their valued leisure activities, and variations in use based on their access to environmental resources. We conducted six focus groups (N = 34) with adults aged 55 and older with a diagnosis of arthritis. Adults living in residential communities were recruited, with 31% of the sample residing in subsidized housing. Focus group transcripts were analyzed using content analysis based on themes of selective optimization with compensation. We found some differences in strategy use between the resource-rich and resource-poor participants. Adults highlighted the value of their leisure activities and the importance of leisure in maintaining their health and well-being. Our findings point to the need to incorporate leisure education into interventions and programs targeting adults with arthritis.

Keywords: Arthritis, Content analysis, Health and well-being, Self-care

Blood Pressure

A4997: Association of a difference in systolic blood pressure between arms with vascular disease and mortality: a systematic review and meta-analysis

Author: Christopher E Clark and others

Source: Lancet, 379, 9819 (March 10-16, 2012): 905 – 914

Abstract: **Background:** Differences in systolic blood pressure (SBP) of 10 mm Hg or more or 15 mm Hg or more between arms have been associated with peripheral vascular disease and attributed to subclavian stenosis. We investigated whether an association exists between this difference and central or peripheral vascular disease, and mortality. **Methods:** We searched Medline, Embase, Cumulative Index to Nursing and Allied Health Literature, Cochrane, and Medline In Process databases for studies published before July, 2011, showing differences in SBP between arms, with data for subclavian stenosis, peripheral vascular disease, cerebrovascular disease, cardiovascular disease, or survival. We used random effects meta-analysis to combine estimates of the association between differences in SBP between arms and each outcome. **Findings:** We identified 28 eligible studies for review, 20 of which were included in our meta-analyses. In five invasive studies using angiography, mean difference in SBP between arms was 36·9 mm Hg (95% CI 35·4—38·4) for proven subclavian stenosis (>50% occlusion), and a difference of 10 mm Hg or more was strongly associated with subclavian stenosis (risk ratio [RR] 8·8, 95% CI 3·6—21·2). In non-invasive studies, pooled findings showed that a difference of 15 mm Hg or more was associated with peripheral vascular disease (nine cohorts; RR 2·5, 95% CI 1·6—3·8; sensitivity 15%, 9—23; specificity 96%, 94—98); pre-existing cerebrovascular disease (five cohorts; RR 1·6, 1·1—2·4; sensitivity 8%, 2—26; specificity 93%, 86—97); and increased cardiovascular mortality (four cohorts; hazard ratio [HR] 1·7, 95% CI 1·1—2·5) and all-cause mortality (HR 1·6, 1·1—2·3). A difference of 10 mm Hg or higher was associated with peripheral vascular disease (five studies; RR 2·4, 1·5—3·9; sensitivity 32%, 23—41; specificity 91%, 86—94). **Interpretation:** A difference in SBP of 10 mm Hg or more, or of 15 mm Hg or more, between arms might help to identify patients who need further vascular assessment. A difference of 15 mm Hg or more could be a useful indicator of risk of vascular disease and death.

Keywords: Vascular disease, Mortality, Systolic blood pressure

Body-mass index

A5008: General and Abdominal Obesity and Risk of Death among Black Women

Deborah A. Boggs and others

New England Journal of Medicine, 365, 10 (September 8, 2011): 901-908

Abstract: Background: Recent pooled analyses show an increased risk of death with increasing levels of the body-mass index (BMI, the weight in kilograms divided by the square of the height in meters) of 25.0 or higher in populations of European ancestry, a weaker association among East Asians, and no association of an increased BMI with an increased risk of death among South Asians. The limited data available on blacks indicate that the risk of death is increased only at very high levels of BMI (≥35.0). Methods: We prospectively assessed the relation of both BMI and waist circumference to the risk of death among 51,695 black women with no history of cancer or cardiovascular disease who were 21 to 69 years of age at study enrollment. Our analysis was based on follow-up data from 1995 through 2008 in the Black Women's Health Study. Multivariable proportional-hazards models were used to estimate hazard ratios and 95% confidence intervals. Results: Of 1773 deaths identified during follow-up, 770 occurred among 33,916 women who had never smoked. Among nonsmokers, the risk of death was lowest for a BMI of 20.0 to 24.9. For a BMI above this range, the risk of death increased as the BMI increased. With a BMI of 22.5 to 24.9 as the reference category, multivariable-adjusted hazard ratios were 1.12 (95% confidence interval [CI], 0.87 to 1.44) for a BMI of 25.0 to 27.4, 1.31 (95% CI, 1.01 to 1.72) for a BMI of 27.5 to 29.9, 1.27 (95% CI, 0.99 to 1.64) for a BMI of 30.0 to 34.9, 1.51 (95% CI, 1.13 to 2.02) for a BMI of 35.0 to 39.9, and 2.19 (95% CI, 1.62 to 2.95) for a BMI of 40.0 to 49.9 (P<0.001 for trend). A large waist circumference was associated with an increased risk of death from any cause among women with a BMI of less than 30.0. Conclusions: The risk of death from any cause among black women increased with an increasing BMI of 25.0 or higher, which is similar to the pattern observed among whites. Waist circumference appeared to be associated with an increased risk of death only among nonobese women.

Keywords: Abdominal Obesity, Black Women, Risk of Death

Cancer

A4978: Postdiagnosis Change in Bodyweight and Survival After Breast Cancer Diagnosis

Author: Patrick T Bradshaw and others

Source: Epidemiology, 23, 2 (March, 2012): 320-327

Abstract: **Background:** Weight gain after diagnosis is common among women with breast cancer, yet results have been inconsistent among the few studies examining its effects on

survival. **Methods:** We examined the effects of weight gain on mortality among a cohort of 1436 women diagnosed with a first primary breast cancer in 1996–1997, on Long Island, NY. Subjects were interviewed soon after diagnosis and again after approximately 5 years. Weight was assessed at each decade of adult life; 1 year before, at, and 1 year after diagnosis; and at the time of follow-up. Mortality through the end of 2005 was assessed using the National Death Index. Proportional hazards regression was used while using a selection model to account for missing data. **Results:** Compared with women who maintained their prediagnosis weight (±5%), those who gained more than 10% after diagnosis had worse survival (hazard ratio [HR] = 2.67; [95% credible interval = 1.37–5.05]). The effect was more pronounced during the first 2 years after diagnosis (>5% gain: all-cause mortality in the first 2 years, HR = 5.87 [0.89–47.8] vs. after 2 years, 1.49 [0.85–2.57]); among women overweight before diagnosis (overweight women: all-cause HR = 1.91 [0.91–3.88] vs. ideal-weight women, 1.39 [0.62–3.01]); and for women who had gained at least 3 kg in adulthood before diagnosis (≥3-kg gain before diagnosis: 1.80 [0.99–3.26 vs. <3 kg gain before diagnosis: 1.07 [0.30–3.37]. **Conclusions:** These results highlight the importance of weight maintenance for women after breast cancer diagnosis.

Keywords: Breast Cancer, Postdiagnosis Change, Bodyweight, Survival

A4987: Parental Cancer: Catalyst for Positive Growth and Change

Author: Janelle V. Levesque and Darryl Maybery

Source: Qualitative Health Research, 22, 3 (March, 2012): 397-408

Abstract: Cancer is a disease that affects the entire family, with each member having unique psychological needs. To date, there has been limited research into the effect of parental cancer on adult children. Furthermore, existing research has largely overlooked the possibility of positive psychological growth in the adult offspring of cancer patients. To investigate the perceived benefits arising from parental cancer, 11 interviews were undertaken with adults whose parents had been diagnosed with cancer, to discuss their experiences of their parent's illness, and their evaluation of both the positive and negative changes that had arisen. All participants were able to identify positive outcomes in direct response to their parent's cancer. Frequently suggested changes included improved relationships with their sick parent, an increased emphasis on family, revised life priorities, and personal development. The implications of these findings, their link to posttraumatic growth theory, and avenues for future research are discussed.

Keywords: Cancer- psychosocial aspects, Emotion work, Families, Illness and disease, Parent-child

A4988: Denosumab and bone-metastasis-free survival in men with castration-resistant prostate cancer: results of a phase 3, randomised, placebo-controlled trial

Author: Matthew R Smith and others

Source: Lancet, 379, 9810 (January 7-13, 2012):39 – 46

Abstract: **Background:** Bone metastases are a major cause of morbidity and mortality in men with prostate cancer. Preclinical studies suggest that osteoclast inhibition might prevent bone metastases. We assessed denosumab, a fully human anti-RANKL monoclonal antibody, for prevention of bone metastasis or death in non-metastatic castration-resistant prostate cancer. **Methods:** In this phase 3, double-blind, randomised, placebo-controlled study, men with non-metastatic castration-resistant prostate cancer at high risk of bone metastasis (prostate-specific antigen [PSA] ≥8·0 μg/L or PSA doubling time ≤10·0 months, or both) were enrolled at 319 centres from 30 countries. Patients were randomly assigned (1:1) via an interactive voice response system to receive subcutaneous denosumab 120 mg or subcutaneous placebo every 4 weeks. Randomisation was stratified by PSA eligibility criteria and previous or ongoing chemotherapy for prostate cancer. Patients, investigators, and all people involved in study conduct were masked to treatment allocation. The primary endpoint was bone-metastasis-free survival, a composite endpoint determined by time to first occurrence of bone metastasis (symptomatic or asymptomatic) or death from any cause. Efficacy analysis was by intention to treat. The masked treatment phase of the trial has been completed. This trial was registered at ClinicalTrials.gov, number NCT00286091. **Findings:** 1432 patients were randomly assigned to treatment groups (716 denosumab, 716 placebo). Denosumab significantly increased bone-metastasis-free survival by a median of 4·2 months compared with placebo (median 29·5 [95% CI 25·4—33·3] vs 25·2 [22·2—29·5] months; hazard ratio [HR] 0·85, 95% CI 0·73—0·98, p=0·028). Denosumab also significantly delayed time to first bone metastasis (33·2 [95% CI 29·5—38·0] vs 29·5 [22·4—33·1] months; HR 0·84, 95% CI 0·71—0·98, p=0·032). Overall survival did not differ between groups (denosumab, 43·9 [95% CI 40·1—not estimable] months vs placebo, 44·8 [40·1—not estimable] months; HR 1·01, 95% CI 0·85—1·20, p=0·91). Rates of adverse events and serious adverse events were similar in both groups, except for osteonecrosis of the jaw and hypocalcaemia. 33 (5%) patients on denosumab developed osteonecrosis of the jaw versus none on placebo. Hypocalcaemia occurred in 12 (2%) patients on denosumab and two (<1%) on placebo. **Interpretation:** This large randomised study shows that targeting of the bone microenvironment can delay bone metastasis in men with prostate cancer.

Keywords: Prostate cancer, Bone-metastasis-free survival, Cancer

Cardiovascular disease

A4949: Lifetime Risks of Cardiovascular Disease

Author: Jarett D. Berry

Source: New England Journal of Medicine, 366, 4(January 26, 2012): 321-329

Abstract: **Background:** The lifetime risks of cardiovascular disease have not been reported across the age spectrum in black adults and white adults. **Methods:** We conducted a meta-analysis at the individual level using data from 18 cohort studies involving a total of 257,384 black men and women and white men and women whose risk factors for cardiovascular disease were measured at the ages of 45, 55, 65, and 75 years. Blood pressure, cholesterol level, smoking status, and diabetes status were used to stratify participants according to risk factors into five mutually exclusive categories. The remaining lifetime risks of cardiovascular events were estimated for participants in each category at each age, with death free of cardiovascular disease treated as a competing event. **Results:** We observed marked differences in the lifetime risks of cardiovascular disease across risk-factor strata. Among participants who were 55 years of age, those with an optimal risk-factor profile (total cholesterol level, <180 mg per deciliter [4.7 mmol per liter]; blood pressure, <120 mm Hg systolic and 80 mm Hg diastolic; nonsmoking status; and nondiabetic status) had substantially lower risks of death from cardiovascular disease through the age of 80 years than participants with two or more major risk factors (4.7% vs. 29.6% among men, 6.4% vs. 20.5% among women). Those with an optimal risk-factor profile also had lower lifetime risks of fatal coronary heart disease or nonfatal myocardial infarction (3.6% vs. 37.5% among men, <1% vs. 18.3% among women) and fatal or nonfatal stroke (2.3% vs. 8.3% among men, 5.3% vs. 10.7% among women). Similar trends within risk-factor strata were observed among blacks and whites and across diverse birth cohorts. **Conclusions:** Differences in risk-factor burden translate into marked differences in the lifetime risk of cardiovascular disease, and these differences are consistent across race and birth cohorts.

Keywords: Cardiovascular Disease, Disease, Lifetime Risks

A4951: Comparison of the Recognition of Overwork-related Cardiovascular Disease in Japan, Korea, and Taiwan

Author: Jungsun Park and others

Source: Industrial Health, 50, 1(January, 2012): 17-23

Abstract: In Japan, Korea, and Taiwan, cerebrovascular and cardiovascular diseases (CVDs) caused by overwork are recognized by government as work-related. These three countries are the only countries in the world that officially recognize CVDs caused by psychosocial factors (e.g., overwork) as work-related cerebrovascular and cardiovascular diseases (WR-CVDs), and compensate employees accordingly. The present study compared the similarities and differences among the recognition of overwork-related CVDs in Japan, Korea, and Taiwan. The criteria by which WR-CVDs are identified are very similar in the three countries. However, in the interval surveyed (1996–2009), Korea had a remarkably larger number of recognized WR-CVD patients than did Japan or Taiwan. Recognition of occupational diseases is influenced by various factors, including socio-cultural values, the nature of occupational health care schemes, the extent of the social security umbrella, national health insurance policy, and scientific evidence. Our results show that social factors may be very different among the three countries studied, although the recognition criteria for WR-CVDs are quite similar.

Keywords: Overwork, Work-related cerebrovascular, Cardiovascular diseases (WR-CVDs), Recognition

Child health care and development

A4994: Group B streptococcal disease in infants aged younger than 3 months: systematic review and meta-analysis

Author: Karen M Edmond and others

Source: Lancet, 379, 9815 (February 11-17, 2012):547 – 556

Abstract: **Background:** Despite widespread use of intrapartum antibiotic prophylaxis, group B streptococcus remains a leading cause of morbidity and mortality in infants in Europe, the Americas, and Australia. However, estimates of disease burden in many countries outside of these regions is not available. We aimed to examine the current global burden of invasive disease and the serotype distribution of group B streptococcus isolates. **Methods:** We searched Medline, Embase, and Wholis databases for studies on invasive early-onset (day 0—6) and late-onset (day 7—89) group B streptococcal disease. Eligible studies were those that described incidence, deaths, or serotypes. We also reviewed reference lists and contacted experts to seek unpublished data and data missed by our search. Random effects meta-analysis was used to pool data. **Findings:** 74 studies met the inclusion criteria; 56 studies reported incidence, 29 case fatality, and 19 serotype distribution. An additional search for studies that reported serotype distribution from Jan 1, 1980, yielded a total of 38 articles. Only five low-income countries were represented in the review and contributed 5% weight to the meta-analysis. 47 (69%) studies

reported use of any intrapartum antibiotic prophylaxis. Substantial heterogeneity existed between studies. Mean incidence of group B streptococcus in infants aged 0—89 days was 0·53 per 1000 livebirths (95% CI 0·44—0·62) and the mean case fatality ratio was 9·6% (95% CI 7·5—11·8). Incidence of early-onset group B streptococcus (0·43 per 1000 livebirths [95% CI 0·37—0·49]) and case fatality (12·1%, [6·2—18·3]) were two-times higher than late-onset disease. Serotype III (48·9%) was the most frequently identified serotype in all regions with available data followed by serotypes Ia (22·9%), Ib (7·0%), II (6·2%), and V (9·1%). Studies that reported use of any intrapartum antibiotic prophylaxis were associated with lower incidence of early-onset group B streptococcus (0·23 per 1000 livebirths [95% CI 0·13—0·59]) than studies in which patients did not use prophylaxis (0·75 per 1000 livebirths [0·58—0·89]). **Interpretation:** More high-quality studies are needed to accurately estimate the global burden of group B streptococcus, especially in low-income countries. A conjugate vaccine incorporating five serotypes (Ia, Ib, II, III, V) could prevent most global group B streptococcal disease.

Keywords: Group B streptococcal disease, Infants aged, Systematic review, Streptococcal disease

A5007: Technical Efficiency and Scale Efficiency of Comprehensive Emergency Obstetric and Newborn Care Centres in Tamil Nadu

S Rajasulochana and others

Artha Vijnana, LIII, 4 (December, 2011): 412-422

Abstract: Given the budget constraint, it is imperative for the public hospitals to be technically efficient and thereby generate additional resources within. Hospital efficiency studies are very few in the Indian context. This study is based on Comprehensive Emergency Obstetric and Newborn Care (CEmONC) Centres within the secondary public hospitals in Tamil Nadu. It estimates the relative Technical Efficiency (TE) and Scale Efficiency (SE) by DEA method using secondary data on facility-wise expenditure incurred and performance indicators for the year April 2009 to March 2010. This pilot study demonstrates to the policy-makers the versatility of DEA method in measuring inefficiencies among CEmONC Centres.

Keywords: Newborn Care, Emergency Obstetric, Tamil Nadu

Coronary Artery Disease

A4998: Inheritance of coronary artery disease in men: an analysis of the role of the Y chromosome

Author: Fadi J Charchar and others

Source: Lancet, 379, 9819 (March 10-16, 2012): 915 – 922

Abstract: **Background:** A sexual dimorphism exists in the incidence and prevalence of coronary artery disease—men are more commonly affected than are age-matched women. We explored the role of the Y chromosome in coronary artery disease in the context of this sexual inequity. **Methods:** We genotyped 11 markers of the male-specific region of the Y chromosome in 3233 biologically unrelated British men from three cohorts: the British Heart Foundation Family Heart Study (BHF-FHS), West of Scotland Coronary Prevention Study (WOSCOPS), and Cardiogenics Study. On the basis of this information, each Y chromosome was tracked back into one of 13 ancient lineages defined as haplogroups. We then examined associations between common Y chromosome haplogroups and the risk of coronary artery disease in cross-sectional BHF-FHS and prospective WOSCOPS. Finally, we undertook functional analysis of Y chromosome effects on monocyte and macrophage transcriptome in British men from the Cardiogenics Study. **Findings:** Of nine haplogroups identified, two (R1b1b2 and I) accounted for roughly 90% of the Y chromosome variants among British men. Carriers of haplogroup I had about a 50% higher age-adjusted risk of coronary artery disease than did men with other Y chromosome lineages in BHF-FHS (odds ratio 1·75, 95% CI 1·20—2·54, p=0·004), WOSCOPS (1·45, 1·08—1·95, p=0·012), and joint analysis of both populations (1·56, 1·24—1·97, p=0·0002). The association between haplogroup I and increased risk of coronary artery disease was independent of traditional cardiovascular and socioeconomic risk factors. Analysis of macrophage transcriptome in the Cardiogenics Study revealed that 19 molecular pathways showing strong differential expression between men with haplogroup I and other lineages of the Y chromosome were interconnected by common genes related to inflammation and immunity, and that some of them have a strong relevance to atherosclerosis. **Interpretation:** The human Y chromosome is associated with risk of coronary artery disease in men of European ancestry, possibly through interactions of immunity and inflammation.

Keywords: Y chromosome, Coronary artery disease

Demography & Statistics

A4958: Flexible two-dimensional mortality model for use in indirect estimation

Author: John Wilmoth

Source: Population Studies: A Journal of Demography, 66, 1 (March, 2012): 1-28

Abstract: Mortality estimates for many populations are derived using model life tables, which describe typical age patterns of human mortality. We propose a new system of model life tables as a means of improving the quality and transparency of such estimates. A flexible two-dimensional model was fitted to a collection of life tables from the Human Mortality Database. The model can be used to estimate full life tables given one or two pieces of information: child mortality only, or child and adult mortality. Using life tables from a variety of sources, we have compared the performance of new and old methods. The new model outperforms the Coale–Demeny and UN model life tables. Estimation errors are similar to those produced by the modified Brass logit procedure. The proposed model is better suited to the practical needs of mortality estimation, since both input parameters are continuous yet the second one is optional.

Keywords: Model life tables, Mortality estimation, Mortality models, Age patterns of mortality, Death rates,

A4960: Medicare spending, mortality rates, and quality of care

Author: Jack Hadley and James D. Reschovsky

Source: International Journal of Health Care Finance and Economics, 12, 1 (March, 2012): 87-105

Abstract: We applied instrumental variable analysis to a sample of 388,690 Medicare beneficiaries predicted to be high-cost cases to estimate the effects of medical care use on the relative odds of death or experiencing an avoidable hospitalization in 2006. Contrary to conclusions from the observational geographic variations literature, the results suggest that greater medical care use is associated with statistically significant and quantitatively meaningful health improvements: a 10% increase in medical care use is associated with a 8.4% decrease in the mortality rate and a 3.8% decrease in the rate of avoidable hospitalizations.

Keywords: Medicare spending, Mortality rates, Quality of care

A4966: Investigation of maternal deaths following public protests in a tribal district of Madhya Pradesh, central India

Author: Subha B and others

Source: Reproductive Health Matters, 20, 39 (May, 2012): 11-20

Abstract: Since 2005, the Government of India has initiated several interventions to address the issue of maternal mortality, including efforts to improve maternity services and train community health workers, and to give cash incentives to poor women if they deliver in a health facility. Following local protests against a high number of maternal deaths in 2010 in Barwani district in Madhya Pradesh, central India, we undertook a fact-finding visit in January 2011 to investigate the 27 maternal deaths reported in the district from April to November 2010. We found an absence of antenatal care despite high levels of anaemia, absence of skilled birth attendants, failure to carry out emergency obstetric care in obvious cases of need, and referrals that never resulted in treatment. We present two case histories as examples. We took our findings to district and state health officials and called for proven means of preventing maternal deaths to be implemented. We question the policy of giving cash to pregnant women to deliver in poor quality facilities without first ensuring quality of care and strengthening the facilities to cope with the increased patient loads. We documented lack of accountability, discrimination against and negligence of poor women, particularly tribal women, and a close link between poverty and maternal death.

Keywords: Maternal mortality and morbidity, Maternity benefits, Reproductive health policy and programmes, Health systems, Accountability, India

A4970: Role of delays in severe maternal morbidity and mortality: expanding the conceptual framework

Author: Rodolfo Carvalho Pacagnella

Source: Reproductive Health Matters, 20, 39 (May, 2012):155-163

Abstract: Maternal mortality has gained importance in research and policy since the mid-1980s. Thaddeus and Maine recognized early on that timely and adequate treatment for obstetric complications were a major factor in reducing maternal deaths. Their work offered a new approach to examining maternal mortality, using a three-phase framework to understand the gaps in access to adequate management of obstetric emergencies: phase I – delay in deciding to seek care by the woman and/or her family; phase II – delay in reaching an adequate health care facility; and phase III – delay in receiving adequate care at that facility. Recently, efforts have been made to strengthen health systems' ability to identify complications that lead to maternal deaths more rapidly. This article shows that the combination of the “three delays”

framework with the maternal “near-miss” approach, and using a range of information-gathering methods, may offer an additional means of recognizing a critical event around childbirth. This approach can be a powerful tool for policymakers and health managers to guarantee the principles of human rights within the context of maternal health care, by highlighting the weaknesses of systems and obstetric services.

Keywords: Maternal mortality and morbidity, Three delays model, Near-miss event, Emergency obstetric care

A4971: Data do count! Collection and use of maternal mortality data in Peru, 1990–2005, and improvements since 2005

Author: Ruth Iguiniz-Romero and Nancy Palomino

Source: Reproductive Health Matters, 20, 39 (May, 2012):174-184

Abstract: This paper reports on a qualitative, exploratory study in 2005, based on interviews with 15 key decision-makers from the Peruvian Ministry of Health responsible for maternal mortality prevention and officials responsible for national data and information on maternal deaths. The main aims were to find out the sources of data and information used by Ministry of Health officials for programme planning and decision-making, whether policies and programmes were informed by the data available, and data flows among central decision-makers within the Ministry and between Ministry and regional and local health centres. Information systems require staff and systems capable of collecting, processing, analysing and sharing data. In Peru, none of these conditions was fulfilled in a homogeneous way. Vertical programmes in the poorest regions had funds for information systems and infrastructure, but limited technical and human resources. Public health workers were overwhelmed with provision of services and not always trained in data collection or informatics. Thus, quality of data collection and analysis varied greatly across regions. Data collection and usage since the study have been improved, reflected in a fall in maternal mortality ratios and women's increased use of maternity services, but efforts to maintain and improve data quality must continue to ensure that initiatives to prevent maternal mortality can be monitored and services improved.

Keywords: Maternal mortality, Health policy and programmes, Data collection, Data analysis, Peru

A4973: Mortality Risk among Black and White Working Women: The Role of Perceived Work Trajectories

Author: Tetyana P. Shippee and others

Source: Journal of Aging and Health, 24, 1 (February, 2012):141-167

Abstract: **Objective:** Drawing from cumulative inequality theory, the authors examine the relationship between perceived work trajectories and mortality risk among Black and White women over 36 years. **Method:** Panel data from the National Longitudinal Survey of Mature Women (1967-2003) are used to evaluate how objective and subjective elements of work shape mortality risk for Black and White women born between 1923 and 1937. **Results:** Estimates from Cox proportional hazards models reveal that Black working women manifest higher mortality risk than White working women even after accounting for occupation, personal income, and household wealth. Perceived work trajectories were also associated with mortality risk for Black women but not for White women. **Discussion:** The findings reveal the imprint of women's work life on mortality, especially for Black women, and illustrate the importance of considering personal meanings associated with objective work characteristics.

Keywords: Perceived work trajectories, Mortality, Cumulative inequality theory, Racial disparities

A4974: Shape of the BMI-Mortality Association by Cause of Death, Using Generalized Additive Models: NHIS 1986–2006

Author: Anna Zajacova and Sarah A. Burgard

Source: Journal of Aging and Health, 24, 2 (March, 2012):191-211

Abstract: **Objectives:** Numerous studies have examined the association between body mass index (BMI) and mortality. The precise shape of their association, however, has not been established. We use nonparametric methods to determine the relationship between BMI and mortality. **Method:** Data from the National Health Interview Survey-Linked Mortality Files 1986-2006 for adults aged 50 to 80 are analyzed using a Poisson approach to survival modeling within the generalized additive model (GAM) framework. **Results:** The BMI-mortality association is more V shaped than U shaped, with the odds of dying rising steeply from the lowest risk point at BMIs of 23 to 26. The association varies considerably by time since interview and cause of death. For instance, the association has an inverted J shape for respiratory causes but is monotonically increasing for diabetes deaths. **Discussion:** Our findings have implications for

interpreting results from BMI-mortality studies and suggest caution in translating the findings into public health messages.

Keywords: Body mass index, Obesity, Mortality, Cause-specific mortality, Nonparametric models

A4991: Natural history of self-harm from adolescence to young adulthood: a population-based cohort study

Author: Paul Moran and others

Source: Lancet, 379, 9812 (January 21-27): 236 – 243

Abstract: **Background:** Knowledge about the natural history of self-harm is scarce, especially during the transition from adolescence to young adulthood, a period characterised by a sharp rise in self-inflicted deaths. From a repeated measures cohort of a representative sample, we describe the course of self-harm from middle adolescence to young adulthood. **Methods:** A stratified, random sample of 1943 adolescents was recruited from 44 schools across the state of Victoria, Australia, between August, 1992, and January, 2008. We obtained data pertaining to self-harm from questionnaires and telephone interviews at seven waves of follow-up, commencing at mean age 15·9 years (SD 0·49) and ending at mean age 29·0 years (SD 0·59). Summary adolescent measures (waves three to six) were obtained for cannabis use, cigarette smoking, high-risk alcohol use, depression and anxiety, antisocial behaviour and parental separation or divorce. **Findings:** 1802 participants responded in the adolescent phase, with 149 (8%) reporting self-harm, More girls (95/947 [10%]) than boys (54/855 [6%]) reported self-harm (risk ratio 1·6, 95% CI 1·2—2·2). We recorded a substantial reduction in the frequency of self-harm during late adolescence. 122 of 1652 (7%) participants who reported self-harm during adolescence reported no further self-harm in young adulthood, with a stronger continuity in girls (13/888) than boys (1/764). During adolescence, incident self-harm was independently associated with symptoms of depression and anxiety (HR 3·7, 95% CI 2·4—5·9), antisocial behaviour (1·9, 1·1—3·4), high-risk alcohol use (2·1, 1·2—3·7), cannabis use (2·4, 1·4—4·4), and cigarette smoking (1·8, 1·0—3·1). Adolescent symptoms of depression and anxiety were clearly associated with incident self-harm in young adulthood (5·9, 2·2—16). **Interpretation:** Most self-harming behaviour in adolescents resolves spontaneously. The early detection and treatment of common mental disorders during adolescence might constitute an important and hitherto unrecognised component of suicide prevention in young adults.

Keywords: Young adulthood, Adolescence, Self harm

A5004: Women's social networks and birth attendant decisions: Application of the Network-Episode Model

Author: Joyce K. Edmondsa and others

Source: Social Science & Medicine, 74, 3 (February 2012): 452–459

Abstract: This paper examines the association of women's social networks with the use of skilled birth attendants in uncomplicated pregnancy and childbirth in Matlab, Bangladesh. The Network-Episode Model was applied to determine if network structure variables (density/kinship homogeneity/strength of ties) together with network content (endorsement for or against a particular type of birth attendant) explain the type of birth attendant used by women above and beyond the variance explained by women's individual attributes. Data were collected by interviewing a representative sample of 246 women, 18–45 years of age, using survey and social network methods between October and December 2008. Logistic regression models were used to examine the associations. Results suggest that the structural properties of networks did not add to explanatory value but instead network content or the perceived advice of network members add significantly to the explanation of variation in service use. Testing aggregate network variables at the individual level extends the ability of the individual profile matrix to explain outcomes. Community health education and mobilization interventions attempting to increase demand for skilled attendants need to reflect the centrality of kinship networks to women in Bangladesh and the likelihood of women to heed the advice of their network of advisors with regard to place of birth.

Keywords: Bangladesh, Network-Episode Model, Social networks, Skilled birth attendants, Health seeking behavior, Childbirth, Maternal mortality

A5005: Loneliness, health, and mortality in old age: A national longitudinal study

Author: Ye Luo and others

Source: Social Science & Medicine, 74, 6 (March, 2012):907–914

Abstract: This study examined the relationship between loneliness, health, and mortality using a U.S. nationally representative sample of 2101 adults aged 50 years and over from the 2002 to 2008 waves of the Health and Retirement Study. We estimated the effect of loneliness at one point on mortality over the subsequent six years, and investigated social relationships, health behaviors, and health outcomes as potential mechanisms through which loneliness affects mortality risk among older Americans. We operationalized health outcomes as depressive symptoms, self-rated health, and functional limitations, and we conceptualized the

relationships between loneliness and each health outcome as reciprocal and dynamic. We found that feelings of loneliness were associated with increased mortality risk over a 6-year period, and that this effect was not explained by social relationships or health behaviors but was modestly explained by health outcomes. In cross-lagged panel models that tested the reciprocal prospective effects of loneliness and health, loneliness both affected and was affected by depressive symptoms and functional limitations over time, and had marginal effects on later self-rated health. These population-based data contribute to a growing literature indicating that loneliness is a risk factor for morbidity and mortality and point to potential mechanisms through which this process works.

Keywords: USA, Loneliness, Mortality, Emotional health, Longitudinal study, Elderly

Depression

A4972: Aging and Late-Life Depression

Author: Zheng Wu and others

Source: Journal of Aging and Health, 24, 1 (February, 2012):3-28

Abstract: **Objectives:** The objective of this study is to examine the relationship between age and depression among people aged 65 and older. **Method:** The study uses three waves of longitudinal data (1991, 1996, 2001) from a community and institutional sample of Canadians aged 65 and older. The study uses generalized linear mixed-model techniques to estimate the trajectories of depressive symptoms and major depression in late life. **Results:** There is a linear increase in depressive symptoms after age 65, but this occurs in the context of medical comorbidity and is not an independent effect of aging. There is a significant u-shaped relationship between age and major depression, after adjusting for selected covariates. **Discussion:** The relationship between age and late-life depression is complex, and it depends on how the dependent variable is measured. Late-life depression develops through a different set of risk factors than it does in earlier stages of the life course. The “fourth age” appears to be a period of psychiatric morbidity.

Keywords: Depression, Depressive symptoms, Prospective study, Comorbidity, Aging

Diabetes

A4950: Lifestyle Change and Mobility in Obese Adults with Type 2 Diabetes

Author: W. Jack Rejeski and others

Source: New England Journal of Medicine, 366, 13(March 29, 2012): 1209-1217

Abstract: **Background:** Adults with type 2 diabetes mellitus often have limitations in mobility that increase with age. An intensive lifestyle intervention that produces weight loss and improves fitness could slow the loss of mobility in such patients. **Methods**: We randomly assigned 5145 overweight or obese adults between the ages of 45 and 74 years with type 2 diabetes to either an intensive lifestyle intervention or a diabetes support-and-education program; 5016 participants contributed data. We used hidden Markov models to characterize disability states and mixed-effects ordinal logistic regression to estimate the probability of functional decline. The primary outcome was self-reported limitation in mobility, with annual assessments for 4 years. **Results:** At year 4, among 2514 adults in the lifestyle-intervention group, 517 (20.6%) had severe disability and 969 (38.5%) had good mobility; the numbers among 2502 participants in the support group were 656 (26.2%) and 798 (31.9%), respectively. The lifestyle-intervention group had a relative reduction of 48% in the risk of loss of mobility, as compared with the support group (odds ratio, 0.52; 95% confidence interval, 0.44 to 0.63; P<0.001). Both weight loss and improved fitness (as assessed on treadmill testing) were significant mediators of this effect (P<0.001 for both variables). Adverse events that were related to the lifestyle intervention included a slightly higher frequency of musculoskeletal symptoms at year 1. **Conclusions:** Weight loss and improved fitness slowed the decline in mobility in overweight adults with type 2 diabetes.

Keywords: Type 2 Diabetes, Lifestyle Change, Obese Adults

A4984: Realizing Empowerment in Difficult Diabetes Care: A Guided Self-Determination Intervention

Author: Vibeke Zoffmann and Marit Kirkevold

Source: Qualitative Health Research, 22, 1 (January, 2012): 103-118

Abstract: Although health professionals advocate empowerment in patient care, they often fail to realize it in practice. Through grounded theories we previously explained why barriers to empowerment were seldom overcome in diabetes care. Zoffmann used these theories as a basis for developing a decision-making and problem-solving method called guided self-determination (GSD). To realize empowerment, health professionals need detailed knowledge of the barriers, their own roles in these barriers, ways to overcome them, and recognizable evidence of having succeeded. Through theory-driven, qualitative evaluation, the previously

developed grounded theories helped us recognize changes consistent with empowerment in dyads of nurses and patients with poorly controlled type 1 diabetes. By completing GSD reflection, patients remarkably improved their ability to identify, express, and share unique and unexpected difficulties related to living with diabetes. As signs of empowerment, patients and health professionals accomplished shared decision making, resolved life–disease conflicts, and established meaningful and effective relationships.

Keywords: Behavior change, Communication, Decision making, Diabetes, Quality improvement

Drugs and Drugs Policy

A5011: Drug resistance in fungi- an emerging problem

Arunaloke Chakrabarti

Regional Health Forum, 15, 1 (2011): 97-103

Abstract: Over the past quarter of a century, invasive fungal infections have emerged as an important cause of morbidity and mortality in immunocompromised patients. Although several new antifungal drugs have been licensed in recent years, antifungal drug resistance is becoming a major concern during treatment of such patients. The resistance may be intrinsic, acquired or clinical. The understanding of the mechanism of resistance and clinical impact is important while planning treatment strategies. Four altered gene expression pathways have been identified in azole resistance. The mechanism of resistance in polyene and echinocandins is still not clearly understood. Recent studies have revealed that molecular chaperone heat shock protein (Hsp90) can alter the relationship between genotype and phenotype leading to a profound impact on antifungal drug resistance. Though definite progress has been made to correlate standardized in vitro antifungal susceptibility testing with prediction of treatment outcome, limitations still exist due to time required for testing and understanding the factors leading to clinical resistance. Overall, the level of resistance to antifungal agents is still relatively low, but there is a possibility of antifungal resistance becoming a crucial determinant of outcome following antifungal therapy in future.

Subject: Drug, Fungi, Emerging problem

A5012: Response to antimicrobial resistance in a globalized world

Manisha Shridhar

Regional Health Forum, 15, 1 (2011): 112-121

Abstract: Antimicrobial resistance is a major challenge for public health in the current globalized trade-based environment. Antimicrobial drugs are susceptible to obsolescence due to inappropriate use. This relates to use of these drugs in humans and use of antimicrobials in developing food products: plant, animal and aquaculture, etc. Antimicrobial resistance-related issues are becoming important in the work of a range of multilateral bodies such as World Health Organization's International Health Regulations, World Trade Organization's Trade Related Aspects of Intellectual Property Rights and Sanitary and Phytosanitary Measures Agreements, the Food and Agriculture Organization, Office International des Epizooties, and the Codex Alimentarius Commission, etc. Norm-setting at a global level is being undertaken by these multilateral organizations in their own capacity and through joint collaboration. This paper argues that regulatory and policy measures distinguished from drugs in general are imperative to preserve the efficacy of antimicrobials. It also argues that multilateral acceptance needs to develop synergy with norm-setting measures at regional/national levels in order to achieve an effective response to antimicrobial resistance.

Keywords: Antimicrobial resistance, Globalized world, Public Health

Environment & Pollution

A4979: Short-term Effects of Air Pollution on Pulse Pressure among Nonsmoking Adults

Author: Szu-Yinga Chen and others

Source: Epidemiology, 23, 2 (March, 2012): 341-348

Abstract: **Background:** Previous studies on the effects of acute air pollution have focused primarily on blood pressure (BP). **Methods:** Our study enrolled 9238 nonsmoking adults over 30 years of age from 6 townships in Taiwan: 1 seaport, 1 urban, 1 industrial, and 3 rural. Using generalized additive models, we evaluated the associations between brachial BP and short-term exposure to 5 air pollutants: particulate matter with diameter <10 μm (PM10), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), carbon monoxide (CO), and ozone (O_3). **Results:** After adjusting for individual and meteorologic factors, the systolic BP was decreased by all 5 pollutants, whereas the diastolic BP was increased by SO_2, NO_2, and O_3. The pulse pressure was consistently decreased by all 5 pollutants, with changes of −1.5 (95% confidence interval = −2.0 to −1.1), −0.6 (−0.9 to −0.4), −2.4 (−3.0 to −1.8), −1.2 (−1.6 to −0.9), and −1.4 (−1.8 to −0.9) mm Hg for interquartile range increases in 3-day lagged PM_{10}, SO_2, NO_2, carbon monoxide, and O_3, respectively. PM_{10} exposure was more strongly associated with reduction of pulse pressure

among men, persons >60 years of age, those with hypertension, and those living in the industrial township. **Conclusions**: Short-term exposure to air pollution reduces pulse pressure. PM_{10} in industrial emissions may contribute to pulse pressure changes. Age, sex, and hypertensive status may modify the effects of PM_{10} on pulse pressure.

Keywords: Air Pollution, Pulse pressure, Nonsmoking Adults

Epidemiology

A4961: Association of Body Composition with Glucose Levels: An Epidemiological Approach

Author: Rao P. Chandrasekhar and others

Source: South Asian Anthropologist, 12, 1 (March, 2012):13-18

Abstract:The data on behavioural variables, anthropometric measurements, blood pressure (systolic and diastolic) and fasting blood glucose levels were collected from 286 (Male 139; Female 147) subjects who are e" 20 years from a scheduled caste population the Mala from Andhra Pradesh. The prevalence of diabetes was 4.2%. The results were compared with studies across the country.

Keywords: Diabetes Mellitus, Body composition, Rural population, Andhra Pradesh

Fertility

A5001: Effect of infertility treatment and pregnancy-related hormones on breast cell proliferation in vitro

Author: Anne Cooley and others

Source: Human Reproduction, 27, 1 (January, 2012): 146-152

Abstract: **BACKGROUND:** Breast cancer development involves a series of mutations in a heterogeneous group of proto-oncogenes/tumor suppressor genes that alter mammary cells to create a microenvironment permissive to tumorigenesis. Exposure to hormones during infertility treatment may have a mutagenic effect on normal mammary epithelial cells, high-risk breast lesions and early-stage breast cancers. Our goal was to understand the association between infertility treatment and normal and cancerous breast cell proliferation. **METHODS:** MCF-10A normal mammary cells and the breast cancer cell lines MCF-7 [estrogen receptor (ER)-

positive, well differentiated] and HCC 1937 (ER-negative, aggressive, BRCA1 mutation) were treated with the weak ER activator clomiphene citrate and hormones that are increased during infertility treatment. Direct effects of treatment on cell proliferation and colony growth were determined. **RESULTS:** While clomiphene citrate had no effect on MCF-10A cells or MCF-7 breast cancer cells, it decreased proliferation of HCC 1937 versus untreated cells (P= 0.003). Estrogen had no effect on either MCF-10A or HCC 1937 cells but, as expected, increased cell proliferation (20–100 nM; P≤0.002) and colony growth (10–30 nM; P< 0.0001) of MCF-7 cells versus control. Conversely, progesterone decreased both proliferation (P= 0.001) and colony growth (P= 0.01) of MCF-10A cells, inhibited colony size of MCF-7 cells (P= 0.01) and decreased proliferation of HCC 1937 cells (P= 0.008) versus control. hCG (100 mIU/ml) decreased both proliferation (P ≤ 0.01) and colony growth (P ≤ 0.002) of all three cell lines. **CONCLUSIONS**: Although these data are preclinical, they support possible indirect estrogenic effects of infertility regimens on ER-positive breast cancer cells and validate the potential protective effect of pregnancy-related exposure to hCG.

Key words: Infertility, Breast cancer, Fertility treatment, Estrogen, Pregnancy

A5002: Subfertility and risk of later life maternal cardiovascular disease

Author: Nisha I. Parikh and others

Source: Human Reproduction, 27, 2 (February, 2012): 568-575

Abstract: **BACKGROUND:** Subfertility shares common pathways with cardiovascular disease (CVD), including polycystic ovarian syndrome, obesity and thyroid disorders. Women with prior 0–1 pregnancies are at an increased risk of incident CVD when compared with women with two pregnancies. It is uncertain whether history of subfertility among women eventually giving birth is a risk factor for CVD. **METHODS:** Among Swedish women with self-reported data on subfertility in the Swedish Medical Birth Register (n = 863 324), we used Cox proportional hazards models to relate a history of subfertility to CVD risk after adjustment for age, birth year, highest income, education, birth country, hypertension, diabetes, preterm birth, small for gestational age (SGA), smoking and for BMI in separate models. In additional analyses, we excluded women with: (i) pregnancy-related or non-pregnancy-related hypertension and/or diabetes; and (ii) preterm births and/or SGA babies. **RESULTS:** Among nulliparous women eventually having a childbirth (between 1983 and 2005, the median follow-up time 11.9; 0–23 years and 9 906 621 person-years of follow-up), there was an increased risk of CVD among women reporting ≥5 years of subfertility versus 0 years (hazard ratio 1.19, 95% confidence interval 1.02–1.39). There were not significantly elevated CVD risks for women with 1–2 or 3–4 years of subfertility versus 0 years. Accounting for BMI did not change results. Excluding women

with hypertension and/or diabetes attenuated associations, whereas exclusion of women with preterm and/or SGA births did not change findings. **CONCLUSIONS**: Subfertility among women eventually having a childbirth is a risk factor for CVD even upon accounting for cardiovascular risk factors and adverse pregnancy outcomes. Future studies should explore the mechanisms underlying this association.

Key words: Subfertility, Cardiovascular disease, Polycystic ovarian syndrome, Pregnancy

Subject: Reproductive epidemiology

Health Care

A4959: Measuring incidence of catastrophic out-of-pocket health expenditure: with application to India

Author: Rama Pal

Source: International Journal of Health Care Finance and Economics, 12, 1 (March, 2012): 63-85

Abstract: The present paper attempts to provide a new measure of catastrophic out-of-pocket health expenditure based on consumption of necessities. In literature, catastrophic expenditure is measured as out-of-pocket health expenditure that exceeds some fixed proportion of household income or household's capacity to pay. According the new measure proposed in this paper, OOP health expenditure is catastrophic if it reduces the non-health expenditure to a level where household is unable to maintain consumption of necessities. Based on this measure of catastrophic health expenditure, the paper examines determinants of catastrophic out-of-pocket health expenditure in India. The results show that, incidence of catastrophic OOP health expenditure increases with income, when we use the earlier measures. However, results based on the revised measure show that, the incidence of catastrophic payments goes down as income increases. Therefore, the analysis suggests that the findings are sensitive to the method used. The findings from multivariate analysis show economic and social status of Indian households are important determinants of incidence of catastrophic health expenditure. Education reduces the probability of incurring catastrophic health expenditure. Moreover, these findings are sensitive to measure of catastrophic OOP health expenditure and therefore, it is important to consider appropriate measure of catastrophic OOP health expenditure.

Keywords: Catastrophic health expenditure, Consumption of necessities, India

A4963: Medicare managed care and primary care quality: examining racial/ethnic effects across states

Author: Jayasree Basu

Source: Health Care Management Science, 15, 1 (March, 2012): 15-28

Abstract: The study assesses the role of Medicare Advantage (MA) plans in providing quality primary care in comparison to FFS Medicare in three states, New York, California, Florida, across three racial ethnic groups. The performance is measured in terms of providing better quality primary care, as defined by lowering the risks of preventable hospital admissions. Using 2004 hospital discharge data (HCUP-SID) of Agency for Healthcare Research and Quality for three states, a multivariate cross sectional design is used with individual admission as the unit of analysis. The study found that MA plans were associated with lower preventable hospitalizations relative to marker admissions. The benefit also spilled over to different racial and ethnic subgroups and in some states, e.g. CA and FL, MA enrollment was associated with significantly lower odds of minority admissions than of white admissions. These results may indicate a potentially favorable role of MA plans in attenuating racial/ethnic inequalities in primary care in some states.

Keywords: Managed care, Medicare, Racial and ethnic disparities, Preventable hospitalizations, Primary care

A4975: Tribal Health Care Services—Anecdotal Evidence of 'Health Trap' in Selected Areas: A Case Study

Author: N. Rajagopal

Source: Journal of Health Management, 14, 1 (March, 2012): 51-66

Abstract: Kerala has been a destination for many economists from all around the world for its 'unique model of development'. The basic sustainable indicators of human capital attainment of Kerala, despite its low income, are probably an exception in the human capital theory. Professor Amartya Sen, on many occasions, cited a 'new paradigm of social development' in the state. Many world bodies like UNDP, WHO, UNICEF, etc. have acknowledged this at different times. The development paradigm of Kerala had been a source of inspiration for the preparation of the Human Development Index (HDI) in 1990. The strong record of basic health has made the state comparable with developed countries.

Keywords: Tribal, Ethnography, Health care utilization

A4996: Trends in access to health services and financial protection in China between 2003 and 2011: a cross-sectional study

Author: Qun Meng and others

Source: Lancet, 379, 9818 (March 3-9, 2012): 805 – 814

Abstract: **Background:** In the past decade, the Government of China initiated health-care reforms to achieve universal access to health care by 2020. We assessed trends in health-care access and financial protection between 2003, and 2011, nationwide. **Methods:** We used data from the 2003, 2008, and 2011 National Health Services Survey (NHSS), which used multistage stratified cluster sampling to select 94 of 2859 counties from China's 31 provinces and municipalities. The 2011 survey was done with a subset of the NHSS sampling frame to monitor key indicators after the national health-care reforms were announced in 2009. Three sets of indicators were chosen to measure trends in access to coverage, health-care activities, and financial protection. Data were disaggregated by urban or rural residence and by three geographical regions: east, central, and west, and by household income. We examined change in equity across and within regions. **Findings:** The number of households interviewed was 57 023 in 2003, 56 456 in 2008, and 18 822 in 2011. Response rates were 98·3%, 95·0%, and 95·5%, respectively. The number of individuals interviewed was 193 689 in 2003, 177 501 in 2008, and 59 835 in 2011. Between 2003 and 2011, insurance coverage increased from 29·7% (57 526 of 193 689) to 95·7% (57 262 of 59 835, p<0·0001). The average share of inpatient costs reimbursed from insurance increased from 14·4 (13·7—15·1) in 2003 to 46·9 (44·7—49·1) in 2011 (p<0·0001). Hospital delivery rates averaged 95·8% (1219 of 1272) in 2011. Hospital admissions increased 2·5 times to 8·8% (5288 of 59 835, p<0·0001) in 2011 from 3·6% (6981 of 193 689) in 2003. 12·9% of households (2425 of 18 800) had catastrophic health expenses in 2011. Caesarean section rates increased from 19·2% (736 of 3835) to 36·3% (443 of 1221, p<0·0001) between 2003 and 2011. **Interpretation:** Remarkable increases in insurance coverage and inpatient reimbursement were accompanied by increased use and coverage of health care. Important advances have been made in achieving equal access to services and insurance coverage across and within regions. However, these increases have not been accompanied by reductions in catastrophic health expenses. With the achievement of basic health-services coverage, future challenges include stronger risk protection, and greater efficiency and quality of care.

Keywords: Health services, Financial protection, China

A5006: Does Morbidity among Elderly Increase Household Health Care Expenditure?

Yadawendra Singh and others

Artha Vijnana, LIII, 4 (December, 2011): 334-352

Abstract: The study examines the effect of population ageing on health expenditure at the household and individual levels utilizing NSS 60th Round data. It found that one quarter of the elderly reported their health as poor and the proportion increased with increase in age. Disease prevalence among elderly was high. It was more than 40 per cent and it increase with age so that per capita hospitalization cost for the elderly is four times higher than for others. The skewness in health expenditure towards the elderly tends to diminish when we adjust the aged population for their higher risk of getting diseases. Presence of elderly in the household augments per capita hospitalization cost for the household.

Keywords: Morbidity, Health Care, Health expenditure

Health care technology and management

A4964: U.S. hospital efficiency and adoption of health information technology

Author: Natalia A. Zhivan and Mark L. Diana

Source: Health Care Management Science, 15, 1 (March, 2012): 37-47

Abstract: This study empirically examines the association between hospital inefficiency and the decision to introduce electronic medical records (EMR) and computerized physician order entry (CPOE) in a national sample of U.S. general hospitals in urban areas in 2006. The main research question is whether the presence of hospital cost inefficiency or other factors driving inefficiency in the production process of a hospital explain low adoption rates of health information technology (HIT) in a hospital setting. We estimated a logistic regression of HIT adoption as a function of hospital cost inefficiency scores obtained using a stochastic frontier analysis. The results demonstrate that hospitals with a greater degree of cost inefficiency were more likely to introduce EMR, suggesting that the benefits of EMR implementation in terms of improved efficiency were likely to outweigh the costs of adoption compared to hospitals that are more efficient. The results showed no association between cost inefficiency and the CPOE adoption decision.

Keywords: Health information technology, EMR, CPOE, HIT adoption, Hospital inefficiency, U.S. hospital

A4982: Exploring Challenges to Telehealth Communication by Specialists in Poison Information

Author: Erin Rothwell and others

Source: Qualitative Health Research, 22, 1 (January, 2012): 67-75

Abstract: The use of the telephone for providing health care is growing. A significant amount of social meaning is derived from visual information, and the absence of visual stimuli provides unique barriers to communication and increases the risks for misunderstandings and distractions. Understanding challenges to telephone communication can provide insight into training opportunities for overcoming these difficulties and improving patient care. The purpose of this research was to explore through focus groups the challenges of phone communication perceived by specialists in poison information. General types of challenges to effective phone communication included developing new communication skills to compensate for lack of visual information, difficulty assessing caller understanding, difficulty managing caller misunderstandings, maintaining distinctive assessments for routine calls, and managing the multifaceted aspects of job stress. The desire for training to enhance telehealth and cultural competency skills was also mentioned, and these findings might provide guidance for the development of training opportunities for telehealth professionals.

Keywords: Communication, Community and public health, Emergency care, Focus groups

Heart Disease

A4983: Development of a Patient Needs Assessment Model for Pulmonary Rehabilitation

Author: Jennie-Laure Sully and others

Source: Qualitative Health Research, 22, 1 (January, 2012): 76-88

Abstract: Patients with chronic obstructive pulmonary disease are often referred to pulmonary rehabilitation programs to manage their symptoms and the consequences of the disease on their lives. Finding ways to target programs to a specific patient's needs could help improve individual response to the program. The purpose of this study was to develop a conceptual model for the assessment of patients' rehabilitation needs by using a grounded theory approach. Focus groups, consultations of medical charts, and a literature review helped us develop a conceptual model characterized by the following categories: need recognition, knowledge, motivation, expectations, goals, ability to fulfill needs, and the ability for personal adjustment. Based on a content matrix reflecting the conceptual model and disease

consequences, items to be included in a prototype instrument were formulated and a preliminary validation phase was conducted.

Keywords: Concept development, Grounded theory, Health outcomes, Rehabilitation, Respiratory disorders

Hepatitis

A4980: Staying Safe from Hepatitis C: Engaging With Multiple Priorities

Author: Magdalena Harris and others

Source: Qualitative Health Research, 22, 1 (January, 2012): 31-42

Abstract: Hepatitis C virus (HCV) infection is a significant global public health problem. In developed countries, 90% of new infections occur among people who inject drugs (PWID), with seroprevalence increasing rapidly among new injectors. Staying Safe is an international, qualitative, social research project, the aim of which is to draw on the experiences of long-term PWID to inform a new generation of HCV prevention strategies. The Sydney project team employed life history interviews and computer-generated timelines to elicit detailed data about unexposed participants' (n =13) injecting practices, circumstances, and social networks over time. The motivations and strategies that enabled participants to avoid risk situations, and which might have helped them to "stay safe," appeared not to be directly related to harm-reduction messages or HCV avoidance. These included the ability and inclination to maintain social and structural resources, to mainly inject alone, to manage withdrawal, and to avoid injecting-related scars. These findings point to the multiple priorities that facilitate viral avoidance among PWID and the potential efficacy of nonspecific HCV harm-reduction interventions for HCV prevention.

Keywords: Hepatitis C, Illness and disease, Prevention, Life history, Risk- behaviors

HIV/AIDS

A4953: Association between Remarriage and HIV Infection in 13 Sub-Saharan African Countries

Author: Damien de Walque and Rachel Kline

Source: Studies in Family Planning, 43, 1(March, 2012):1-10

Abstract: Separated, divorced, and widowed individuals in Africa are at significantly increased risk for HIV infection. Using nationally representative data from 13 sub-Saharan African countries, this study confirms that finding and goes further by examining those who have experienced a marital dissolution and are now remarried. Results show that remarried individuals form a large portion of the population and have a higher-than-average HIV prevalence. HIV-positive remarried individuals are at risk of transmitting the infection to their spouse, because many of the couples are serodiscordant. The large number of high-risk remarried individuals is a source of vulnerability and further infection, and should be acknowledged and taken into account by prevention strategies that rarely address this population.

Keywords: HIV, Sub-Saharan African Countries, HIV Infection, Remarriage

A4981: Challenges Facing Providers Caring for HIV/HCV-Coinfected Patients

Author: Helen-Maria Lekas and others

Source: Qualitative Health Research, 22, 1 (January, 2012): 54-66

Abstract: Despite the high prevalence of hepatitis C virus (HCV) infection among injection drug users also infected with human immunodeficiency virus (HIV), and the synergistic adverse effect of the two diseases on patients' health and survival, research on the clinical management of these patients and particularly the low uptake of HCV therapy is limited. We conducted qualitative interviews with 17 HIV providers from two urban public hospitals. We discovered that the limitations of the current state of medical knowledge, the severe side effects of HIV and HCV therapies, and the psychosocial vulnerability of HIV/HCV-coinfected patients combined with their resistance to becoming informed about HCV posed significant challenges for providers. To contend with these challenges, providers incorporated key dimensions of patient-centered medicine in their practice, such as considering their patients' psychosocial profiles and the meaning patients assign to being coinfected, and finding ways to engage their patients in a therapeutic alliance.

Keywords: Health care, Health care professionals, Hepatitis C, HIV, HCV, AIDS

A4990: Efficacy and safety of an extended nevirapine regimen in infant children of breastfeeding mothers with HIV-1 infection for prevention of postnatal HIV-1 transmission (HPTN 046): a randomised, double-blind, placebo-controlled trial

Author: Hoosen M Coovadia and others

Source: Lancet, 379, 9812 (January 21-27, 2012): 221 – 228

Abstract: **Background:** Nevirapine given once-daily for the first 6, 14, or 28 weeks of life to infants exposed to HIV-1 via breastfeeding reduces transmission through this route compared with single-dose nevirapine at birth or neonatally. We aimed to assess incremental safety and efficacy of extension of such prophylaxis to 6 months. **Methods:** In our phase 3, randomised, double-blind, placebo-controlled HPTN 046 trial, we assessed the incremental benefit of extension of once-daily infant nevirapine from age 6 weeks to 6 months. We enrolled breastfeeding infants born to mothers with HIV-1 in four African countries within 7 days of birth. Following receipt of nevirapine from birth to 6 weeks, infants without HIV infection were randomly allocated (by use of a computer-generated permuted block algorithm with random block sizes and stratified by site and maternal antiretroviral treatment status) to receive extended nevirapine prophylaxis or placebo until 6 months or until breastfeeding cessation, whichever came first. The primary efficacy endpoint was HIV-1 infection in infants at 6 months and safety endpoints were adverse reactions in both groups. We used Kaplan-Meier analyses to compare differences in the primary outcome between groups. This study is registered with ClinicalTrials.gov, number NCT00074412. **Findings:** Between June 19, 2008, and March 12, 2010, we randomly allocated 1527 infants (762 nevirapine and 765 placebo); five of whom had HIV-1 infection at randomisation and were excluded from the primary analyses. In Kaplan-Meier analysis, 1·1% (95% CI 0·3—1·8) of infants who received extended nevirapine developed HIV-1 between 6 weeks and 6 months compared with 2·4% (1·3—3·6) of controls (difference 1·3%, 95% CI 0—2·6), equating to a 54% reduction in transmission (p=0·049). However, mortality (1·2% for nevirapine vs 1·1% for placebo; p=0·81) and combined HIV infection and mortality rates (2·3% vs 3·2%; p=0·27) did not differ between groups at 6 months. 125 (16%) of 758 infants given extended nevirapine and 116 (15%) of 761 controls had serious adverse events, but frequency of adverse events, serious adverse events, and deaths did not differ significantly between treatment groups. **Interpretation:** Nevirapine prophylaxis can safely be used to provide protection from mother-to-child transmission of HIV-1 via breastfeeding for infants up to 6 months of age.

Keywords: Breastfeeding mothers, HIV-1 infection, Infant children

A5009: HIV-1 drug resistance among drug-naïve and HAART-treated patients in India: Current status

Pachamuthu Balakrishnan and others

Regional Health Forum, 15, 1 (2011): 27-43

Abstract: Highly active antiretroviral therapy (HAART) has dramatically improved survival and quality of life among people living with HIV/AIDS globally. However, drug resistant mutations of HIV are seriously challenging the benefits of HAART, especially considering the heterogeneity of the epidemic in India. With the introduction of generic HAART, there has been a steep increase in patients initiating HAART in India. Drug resistant mutations easily evolve in the presence of sub-optimal adherence. It should also be noted that since most patients pay for medications out-of-pocket, interruptions in therapy due to monetary constraints are not uncommon. There is limited information on HIV drug resistance in resource constrained settings, like India, where the predominant circulating HIV-1 sub-type is C. The transmissibility of drug-resistant forms of the virus is also a major public health concern especially when formulating treatment guidelines. This article reviews published data available on the patterns of HIV-1 drug resistance among treatmentnaïve and drug-exposed patients in India.

Key words: HIV drug resistance, Non-B subtypes, Antiretroviral drugs, Primary drug resistance, HIV monitoring, India.

Hypertension

A4993: Clinical features of paediatric pulmonary hypertension: a registry study

Author: Rolf MF Berger and others

Source: Lancet, 379, 9815 (February 11-17, 2012):537 - 546

Abstract: **Background:** Paediatric pulmonary hypertension, is an important cause of morbidity and mortality, and is insufficiently characterised in children. The Tracking Outcomes and Practice in Pediatric Pulmonary Hypertension (TOPP) registry is a global, prospective study designed to provide information about demographics, treatment, and outcomes in paediatric pulmonary hypertension. **Methods:** Consecutive patients aged 18 years or younger at diagnosis with pulmonary hypertension and increased pulmonary vascular resistance were enrolled in TOPP at 31 centres in 19 countries from Jan 31, 2008, to Feb 15, 2010. Patient and disease characteristics, including age at diagnosis and at enrolment, sex, ethnicity, presenting symptoms, pulmonary hypertension classification, comorbid disorders, medical and family history, haemodynamic indices, and functional class were recorded. Follow-up was decided by the patients' physicians according to the individual's health-care needs. **Findings:** 362 of 456 consecutive patients had confirmed pulmonary hypertension (defined as mean pulmonary artery pressure ≥25 mm Hg, pulmonary capillary wedge pressure ≤12 mm Hg, and pulmonary

vascular resistance index ≥3 WU/m−2). 317 (88%) patients had pulmonary arterial hypertension (PAH), which was idiopathic [IPAH] or familial [FPAH] in 182 (57%), and associated with other disorders in 135 (43%), of which 115 (85%) cases were associated with congenital heart disease. 42 patients (12%) had pulmonary hypertension associated with respiratory disease or hypoxaemia, with bronchopulmonary dysplasia most frequent. Finally, only three patients had either chronic thromboembolic pulmonary hypertension or miscellaneous causes of pulmonary hypertension. Chromosomal anomalies, mainly trisomy 21, were reported in 47 (13%) of patients with confirmed disease. Median age at diagnosis was 7 years (IQR 3—12); 59% (268 of 456) were female. Although dyspnoea and fatigue were the most frequent symptoms, syncope occurred in 31% (57 of 182) of patients with IPAH or FPAH and in 18% (eight of 45) of those with repaired congenital heart disease; no children with unrepaired congenital systemic-to-pulmonary shunts had syncope. Despite severe pulmonary hypertension, functional class was I or II in 230 of 362 (64%) patients, which is consistent with preserved right-heart function. **Interpretation:** TOPP identifies important clinical features specific to the care of paediatric pulmonary hypertension, which draw attention to the need for paediatric data rather than extrapolation from adult studies.

Keywords: Paediatric, Hypertension

Leprosy

A4965: Nutritional status of leprosy patients in India

Author: PSS Rao and AS John

Source: Indian Journal of Leprosy, 84, 1 (Jan-March, 2012): 17-22

Abstract: A cross-sectional epidemiological study was carried out at a Leprosy Referral Hospital in Delhi to assess the nutritional status of multibacillary leprosy patients in comparison to the general population using BMI. 150 people affected with multibacillary leprosy were included in the study, of whom 108 (72%) had WHO Grade 2 disability. 100 non leprosy patients were also included as a control group. Socio-demographic and clinical details as well as their height and weight were measured and the BMI computed. The findings clearly showed that under-nutrition (BMI < 18.5) was more common in people affected by leprosy than in those without leprosy, regardless of age or sex. Presence of disability made the incidence of under- nutrition more likely. The duration of disease, number of lesions or bacterial index had no impact on the level of nutrition. There may be multiple factors working together to lead to this under-nutrition and these are discussed briefly. If, we aim to provide high quality services with a holistic approach, a mandatory BMI should be calculated for every patient and if under

nourished, a qualitative diet summary should be done and suitable nutritional advice given. Further, studies are needed for a better understanding of the occurrence and progression of under-nutrition in leprosy to find efficient ways to combat this problem.

Keywords: Under-nutrition, Leprosy, BMI, India

Malaria

A4992: Global malaria mortality between 1980 and 2010: a systematic analysis

Author: Christopher JL Murray and others

Source: Lancet, 379, 9814 (February 4-10, 2012): 413 – 431

Abstract: **Background:** During the past decade, renewed global and national efforts to combat malaria have led to ambitious goals. We aimed to provide an accurate assessment of the levels and time trends in malaria mortality to aid assessment of progress towards these goals and the focusing of future efforts. **Methods:** We systematically collected all available data for malaria mortality for the period 1980—2010, correcting for misclassification bias. We developed a range of predictive models, including ensemble models, to estimate malaria mortality with uncertainty by age, sex, country, and year. We used key predictors of malaria mortality such as Plasmodium falciparum parasite prevalence, first-line antimalarial drug resistance, and vector control. We used out-of-sample predictive validity to select the final model. **Findings:** Global malaria deaths increased from 995 000 (95% uncertainty interval 711 000—1 412 000) in 1980 to a peak of 1 817 000 (1 430 000—2 366 000) in 2004, decreasing to 1 238 000 (929 000—1 685 000) in 2010. In Africa, malaria deaths increased from 493 000 (290 000—747 000) in 1980 to 1 613 000 (1 243 000—2 145 000) in 2004, decreasing by about 30% to 1 133 000 (848 000—1 591 000) in 2010. Outside of Africa, malaria deaths have steadily decreased from 502 000 (322 000—833 000) in 1980 to 104 000 (45 000—191 000) in 2010. We estimated more deaths in individuals aged 5 years or older than has been estimated in previous studies: 435 000 (307 000—658 000) deaths in Africa and 89 000 (33 000—177 000) deaths outside of Africa in 2010. **Interpretation:** Our findings show that the malaria mortality burden is larger than previously estimated, especially in adults. There has been a rapid decrease in malaria mortality in Africa because of the scaling up of control activities supported by international donors. Donor support, however, needs to be increased if malaria elimination and eradication and broader health and development goals are to be met.

Keywords: Malaria, Mortality, Demograhpy

Maternal and Child Health

A4956: Applying WHO's 'workforce indicators of staffing need' (WISN) method to calculate the health worker requirements for India's maternal and child health service guarantees in Orissa State

Author: Amy Hagopian and others

Source: Health Policy and Planning, 27, 1 (January, 2012): 11-18

Abstract: **Objective:** In one district of Orissa state, we used the World Health Organization's Workforce Indicators of Staffing Need (WISN) method to calculate the number of health workers required to achieve the maternal and child health 'service guarantees' of India's National Rural Health Mission (NRHM). We measured the difference between this ideal number and current staffing levels. **Methods:** We collected census data, routine health information data and government reports to calculate demand for maternal and child health services. By conducting 54 interviews with physicians and midwives, and six focus groups, we were able to calculate the time required to perform necessary health care tasks. We also interviewed 10 new mothers to cross-check these estimates at a global level and get assessments of quality of care. **Findings**: For 18 service centres of Ganjam District, we found 357 health workers in our six cadre categories, to serve a population of 1.02 million. Total demand for the MCH services guaranteed under India's NRHM outpaced supply for every category of health worker but one. To properly serve the study population, the health workforce supply should be enhanced by 43 additional physicians, 15 nurses and 80 nurse midwives. Those numbers probably under-estimate the need, as they assume away geographic barriers. **Conclusions:** Our study established time standards in minutes for each MCH activity promised by the NRHM, which could be applied elsewhere in India by government planners and civil society advocates. Our calculations indicate significant numbers of new health workers are required to deliver the services promised by the NRHM.

Keywords: Health workers, Orissa State, Rural health, Health planning, health professionals

A4957: Effect of knowledge of community health workers on essential newborn health care: a study from rural India

Author: Praween K Agrawal

Source: Health Policy and Planning, 27, 2(March, 2012): 115-126

Abstract: **Background**: This study explored the relationship between the knowledge of community health workers (CHWs)—anganwadi workers (AWWs) and auxiliary nurse midwives (ANMs)—and their antenatal home visit coverage and effectiveness of the visits, in terms of essential newborn health care practices at the household level in rural India. **Methods**: We used data from 302 AWWs and 86 ANMs and data from recently delivered women (RDW) (n = 13 023) who were residents of the CHW catchment areas and gave birth to a singleton live baby during 2004–05. Using principal component analysis, knowledge scores for preventive care and danger signs were computed separately for AWWs and ANMs and merged with RDW data. A multivariate logistic regression model was used to estimate the adjusted effect of knowledge level. A generalized estimating equation (GEE) was used to account for clustering. **Results:** Coverage of antenatal home visits and newborn care practices were positively correlated with the knowledge level of AWWs and ANMs. Initiation of breastfeeding in the first hour of life (odds ratio 1.97; 95% confidence interval (CI): 1.55–2.49 for AWW, and odds ratio 1.62; 95% CI: 1.25–2.09 for ANM), clean cord care (odds ratio 2.03; 95% CI: 1.64–2.52 for AWW, and odds ratio 1.43; 95% CI: 1.17–1.75 for ANM) and thermal care (odds ratio 2.16; 95% CI: 1.64–2.85 for AWW and odds ratio 1.88; 95% CI: 1.43–2.48 for ANM) were significantly higher among women visited by AWWs or ANMs who had better knowledge compared with those with poor knowledge. **Conclusion:** CHWs' knowledge is one of the crucial aspects of health systems to improve the coverage of community-based newborn health care programmes as well as adherence to essential newborn care practices at the household level.

Keywords: Knowledge level, Community health workers, Newborn health care, Rural India

A4962: Maternal Care and Childrearing Practices: A Micro Level Study among the Bhumija Tribe of Northern Orissa, India

Author: Goswami Monali and others

Source: South Asian Anthropologist, 12, 1 (March, 2012):51-59

Abstract: Multidimensional factors sway the goal of safe motherhood and it is still a dream for much of India's rural and tribal population. The present paper is an endeavor to comprehend the maternal care and childrearing practices of the Bhumija tribal women of Northern Orissa. The antenatal care coverage is only 60.3%, 55.4% has consumed IFA supplement and 51.2% women has taken TT vaccine. Concomitantly, the women of the child bearing age are confronted with various complications of high risk. Despite of Governments various initiatives such as Janani Suraksha Yojana (JSY) and ASHA, it is interesting to note that still majority of the women (62.8%) are contingent upon the elderly women of the village during childbirth. Breastfeeding shows a positive association (correlation) with the length of postpartum

amenorrhea. The study also envisages the faulty feeding and weaning practices of the tribal children. Therefore there is still a need to reinforce the maternal and child health care practices in this population and give sufficient importance to it as an interventions to impoverish maternal & child mortality and morbidity.

Keywords: Breastfeeding, Colostrums, Immunization, Bhumija Tribe, Orissa

A5000: Equity in maternal, newborn, and child health interventions in Countdown to 2015: a retrospective review of survey data from 54 countries

Author: Aluísio JD Barros and others

Source: Lancet, 379, 9822 (March 31-April 6, 2012): 1225 – 1233

Abstract: **Background:** Countdown to 2015 tracks progress towards achievement of Millennium Development Goals (MDGs) 4 and 5, with particular emphasis on within-country inequalities. We assessed how inequalities in maternal, newborn, and child health interventions vary by intervention and country. **Methods:** We reanalysed data for 12 maternal, newborn, and child health interventions from national surveys done in 54 Countdown countries between Jan 1, 2000, and Dec 31, 2008. We calculated coverage indicators for interventions according to standard definitions, and stratified them by wealth quintiles on the basis of asset indices. We assessed inequalities with two summary indices for absolute inequality and two for relative inequality. **Findings:** Skilled birth attendant coverage was the least equitable intervention, according to all four summary indices, followed by four or more antenatal care visits. The most equitable intervention was early initation of breastfeeding. Chad, Nigeria, Somalia, Ethiopia, Laos, and Niger were the most inequitable countries for the interventions examined, followed by Madagascar, Pakistan, and India. The most equitable countries were Uzbekistan and Kyrgyzstan. Community-based interventions were more equally distributed than those delivered in health facilities. For all interventions, variability in coverage between countries was larger for the poorest than for the richest individuals. **Interpretation:** We noted substantial variations in coverage levels between interventions and countries. The most inequitable interventions should receive attention to ensure that all social groups are reached. Interventions delivered in health facilities need specific strategies to enable the countries' poorest individuals to be reached. The most inequitable countries need additional efforts to reduce the gap between the poorest individuals and those who are more affluent.

Keywords: Maternal, Newborn, Child health, Equity, Survey data

A5003: Maternal leave policies and vaccination coverage: A global analysis

Author: Mark Dakua and others

Source: Social Science & Medicine, 74, 2 (January 2012): 120–124

Abstract: Childhood vaccination is a proven and cost-effective way to reduce childhood mortality; however, participation in vaccination programs is not universal even where programs are free or low cost. Studies in diverse countries have reported work conflicts as limiting parents' ability to vaccinate their children. Using policy data for 185 UN member countries, we explore the hypothesis that an increased opportunity for parents to bring children to vaccination sites will translate into higher childhood vaccination rates. To do so, we use OLS regression to examine the relationship between the duration of adequately paid maternal leave and the uptake of vaccines. We find that a higher number of full-time equivalent weeks of paid maternal leave is associated with higher childhood vaccination rates, even after controlling for GDP per capita, health care expenditures, and social factors. Further research is needed to assess whether this association is upheld in longitudinal and intervention studies, as well as whether other forms of leave such as paid leave to care for the health of family members is effective at increasing the ability of parents to bring children for needed preventive care.

Keywords: Childhood vaccination, Maternity leave, Global health

Mental Health

A4985: Living With a Mentally Ill Parent: Exploring Adolescents' Experiences and Perspectives

Author: Marianne V. Trondsen

Source: Qualitative Health Research, 22, 2 (February, 2012): 174-188

Abstract: Although a considerable body of research has described the implications of parental mental illness, the perspectives of children and adolescents have rarely been addressed. In this article, I explore adolescents' experiences in everyday life, based on an action-oriented study of a Norwegian online self-help group for adolescents (aged 15 to 18) with mentally ill parents. The analysis was conducted through participant observation of the group for 2 years. The adolescents experienced a variety of difficult challenges related to their parent's mental illness: lack of information and openness; unpredictability and instability; fear; loneliness; and loss and sorrow. However, they also discussed strategies for active management of the challenges arising from the family situation. I argue that these adolescents can be understood as vulnerable as well as active participants in managing their everyday lives. I emphasize the

importance of including perspectives of children and adolescents in further research so as to improve health care for families with parental mental illness.

Keywords: Adolescents, Mental health,illness, Parenting

Paediatric

A4999: Burn size and survival probability in paediatric patients in modern burn care: a prospective observational cohort study

Author: Robert Kraft and others

Source: Lancet, 379, 9820 (March 17-23, 2012): 1013 – 1021

Abstract: **Background:** Patient survival after severe burn injury is largely determined by burn size. Modern developments in burn care have greatly improved survival and outcomes. However, no large analysis of outcomes in paediatric burn patients with present treatment regimens exists. This study was designed to identify the burn size associated with significant increases in morbidity and mortality in paediatric patients. **Methods:** We undertook a single-centre prospective observational cohort study using clinical data for paediatric patients with burns of at least 30% of their total body surface area (TBSA). Patients were stratified by burn size in 10% increments, ranging from 30% to 100% TBSA, with a secondary assignment made according to the outcome of a receiver operating characteristic (ROC) analysis. Statistical analysis was done with Student's t test, $\chi 2$ test, logistic regression, and ROC analysis, as appropriate, with significance set at $p<0{\cdot}05$. **Findings:** 952 severely burned paediatric patients were admitted to the centre between 1998 and 2008. All groups were comparable in age (mean 7·3 [SD 5·3] years, ranging from 6·1 [5·1] years in the 30—39% TBSA group to 9·6 [5·4] years in the 90—100% TBSA group) and sex distribution (628 [66%] boys, ranging from 59% [73/123] in the 60—69% TBSA group to 82% [42/51] in the 90—100% TBSA group). 123 (13%) patients died (increasing from 3% [five of 180] in the 30—39% TBSA group to 55% [28/51] in the 90—100% TBSA group; $p<0{\cdot}0001$), 154 (16%) developed multiorgan failure (increasing from 6% [ten] in the 30—39% TBSA group to 45% [23] in the 90—100% TBSA group; $p<0{\cdot}0001$), and 89 (9%) had sepsis (increasing from 2% [three] in the 30—39% TBSA group to 26% [13] in the 90—100% TBSA group; $p<0{\cdot}0001$). Burn size of 62% TBSA was a crucial threshold for mortality (odds ratio 10·07, 95% CI 5·56—18·22, $p<0{\cdot}0001$). **Interpretation:** We established that, in a modern paediatric burn care setting, a burn size of roughly 60% TBSA is a crucial threshold for postburn morbidity and mortality. On the basis of these findings, we recommend that paediatric patients with greater than 60% TBSA burns be immediately transferred to a specialised burn centre. Furthermore, at the burn centre, patients should be treated with increased vigilance and

improved therapies, in view of the increased risk of poor outcome associated with this burn size.

Keywords: Burn care, Paediatric, Survival probability

Pregnancy

A4955: Decision making Regarding Unwanted Pregnancy among Adolescents in Mexico City: A Qualitative Study

Author: Carrie Tatum and others

Source: Studies in Family Planning, 43, 1(March, 2012):43-56

Abstract: Adolescents in Latin America and the Caribbean confront difficult decisions when faced with unwanted pregnancies, especially given the region's legal restrictions on and widespread cultural opposition to abortion. Little research has been conducted on pregnancy decisionmaking among young people in this region. This study examines the role of peers, partners, family members, and health-care providers in adolescents' decisionmaking regarding pregnancy continuation or termination in Mexico City shortly after abortion was legalized in 2007. Qualitative in-depth interviews and focus group discussions were conducted in 2009 with participants aged 13–17 who experienced an unwanted pregnancy. Although participants were able to formulate preferences regarding pregnancy resolution, parents' wishes usually prevailed when their wishes conflicted. Peers were generally found to be supportive, whereas the role of partners varied. Results indicate the need for comprehensive sexuality education to promote adolescents' autonomy, mechanisms other than legal mandates to encourage constructive parental involvement, and confidential counseling from health professionals offering options and supporting adolescents' ability to act on their decisions.

Keywords: Pregnancy, Adolescents, Mexico, Decision making

A4968: Pregnancy registration systems can enhance health systems, increase accountability and reduce mortality

Author: Alain B Labrique and others

Source: Reproductive Health Matters, 20, 39 (May, 2012): 113-117

Abstract: As many low- to middle-income countries strive to achieve targets of reduced maternal, neonatal and infant mortality set by the Millennium Development Goals, health system innovations which can accelerate progress are being carefully examined. Among these are technologies and systems which aim to strengthen frontline health workers and the health systems within which they work, by enabling the registration of pregnancies, births and outcomes. Accurate, population-based numerators and denominators can help to improve accountability of the health system to provide expected routine antenatal and post-natal care, as well as emergency support and referral, as needed. The enumeration of women of reproductive age, followed by prospective, voluntary registration of pregnancies has the potential to support governments, health agencies, and the populations they serve, to ensure public health service delivery and to guide informed policies.

Keywords: Health information systems, Registration of pregnancy, Maternity services, Maternal and infant health, Demography

A4969: Registration and monitoring of pregnant women in Tamil Nadu, India: a critique

Author: Rakhal Gaitonde

Source: Reproductive Health Matters, 20, 39 (May, 2012):118-124

Abstract: In 2008 a pregnancy registration system was introduced in rural Tamil Nadu, India, which is now being scaled up. It will collect data on antenatal, delivery and post-partum care in pregnant women and infant health. This is seen as an important public health intervention, justified for its potential to ensure efficiency in provision and use of maternity services. However, from another perspective, it can be seen as a form of control over women, reducing the experience of safe pregnancy and delivery to a few measurable variables. The burden of implementing this task falls on Village Health Nurses, who are also women, reducing their time for interacting with and educating people and visiting communities, which is their primary task and the basis on which they are evaluated. In addition, they face logistical constraints in rural settings that may affect the quality of data. In a health system with rigid internal hierarchies and power differentials, this system may become more of a supervisory and monitoring tool than a tool for a learning health system. It may also lead to a victim-blaming approach (“you missed two antenatal visits”) rather than health system learning to improve maternal and infant health. The paper concludes by recommending ways to use the system and the data to tackle the broader social determinants of health, with women, health workers and communities as partners in the process.

Keywords: Health information systems, Registration of pregnancy, Maternity services, Maternal and infant health, Tamil Nadu, India, Demography

A4976: Perfluorinated Compounds and Subfecundity in Pregnant Women

Author: Kristina W Whitworth and others

Source: Epidemiology, 23, 2 (March, 2012): 257–263

Abstract: **Background:** Perfluorinated compounds are ubiquitous pollutants; epidemiologic data suggest they may be associated with adverse health outcomes, including subfecundity. We examined subfecundity in relation to 2 perfluorinated compounds—perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). **Methods:** This case-control analysis included 910 women enrolled in the Norwegian Mother and Child Cohort Study in 2003 and 2004. Around gestational week 17, women reported their time to pregnancy and provided blood samples. Cases consisted of 416 women with a time to pregnancy greater than 12 months, considered subfecund. Plasma concentrations of perfluorinated compounds were analyzed using liquid chromatography–mass spectrometry. Adjusted odds ratios (ORs) and 95% confidence intervals (CIs) were estimated for each pollutant quartile using logistic regression. Estimates were further stratified by parity. **Results:** The median plasma concentration of PFOS was 13.0 ng/mL (interquartile range [IQR] = 10.3–16.6 ng/mL) and of PFOA was 2.2 ng/mL (IQR = 1.7–3.0 ng/mL). The relative odds of subfecundity among parous women was 2.1 (95% CI = 1.2–3.8) for the highest PFOS quartile and 2.1 (1.0–4.0) for the highest PFOA quartile. Among nulliparous women, the respective relative odds were 0.7 (0.4–1.3) and 0.5 (0.2–1.2). **Conclusion:** Previous studies suggest that the body burden of perfluorinated compounds decreases during pregnancy and lactation through transfer to the fetus and to breast milk. Afterward, the body burden may increase again. Among parous women, increased body burden may be due to a long interpregnancy interval rather than the cause of a long time to pregnancy. Therefore, data from nulliparous women may be more informative regarding toxic effects of perfluorinated compounds. Our results among nulliparous women did not support an association with subfecundity.

Keywords: Pregnant Women, Perfluorinated Compounds, Subfecundity

A4989: Chemotherapy and human chorionic gonadotropin concentrations 6 months after uterine evacuation of molar pregnancy: a retrospective cohort study

Author: Roshan Agarwal and others

Source: Lancet, Volume, 379, 9811 (January 14-20, 2012): 130 - 135

Abstract: **Background:** Indications for chemotherapy in gestational trophoblastic disease include raised human chorionic gonadotropin (hCG) concentrations 6 months after uterine evacuation of hydatidiform mole, even when values are falling. We aimed to establish whether chemotherapy is always necessary in these patients. **Methods:** We retrospectively identified women registered between January, 1993, and May, 2008, at Charing Cross Hospital, London, UK, who had persistently high hCG concentrations 6 months after evacuation of hydatidiform mole. Rates of hCG normalisation, relapse, and death were assessed in patients continued under surveillance and those who received chemotherapy after 6 months. We postulated that a surveillance policy would be clinically acceptable if hCG values returned to normal in 75% of patients or more. **Findings:** 76 (<1%) of 13 960 patients with hydatidiform moles had persistently high hCG concentrations of more than 5 IU/L 6 months after evacuation. 66 (87%) patients continued under surveillance and hCG values spontaneously returned to normal without chemotherapy in 65 (98%) of these patients. Values in one patient did not become normal because of chronic renal failure, but she remains healthy. Ten patients received chemotherapy, and hCG concentrations returned to normal in eight (80%) of these individuals (surveillance vs chemotherapy groups p=0·044) and remained slightly high (6—11 IU/L) in two without any associated clinical problems off treatment. We noted no significant differences between individuals in the surveillance and chemotherapy groups, apart from lower median hCG concentrations 6 months after evacuation in those under surveillance than in those given chemotherapy (13 IU/L, range 5—887, vs 157 IU/L, range 6—6438; p=0·004). Overall, there were no deaths in this series. **Interpretation:** A surveillance policy seems to be clinically acceptable in patients with low and declining concentrations of hCG 6 months after evacuation of hydatidiform mole.

Keywords: Moral pregnancy, Chemotherapy, Human chorionic gonadotropin

Sleep-related

A4952: Recovery after Three-shift Work: Relation to Sleep-related Cardiac Neuronal Regulation in Nurses

Author: Min-Huey Chung

Source: Industrial Health, 50, 1(January, 2012): 24-30

Abstract: This study was to evaluate whether sleep-related autonomic function in nurses recovers during their days off following a rapidly rotating, clockwise shift schedule. Ten

rotating-shift nurses and ten regular morning-shift nurses were included. Nurses slept at home and were allowed to sleep and wake spontaneously. For the rotating-shift workers, ambulatory polysomnographic recordings were taken during nighttime sleep (after the second morning shift, afternoon shift, and on days off) and during daytime sleep (after the second night shift). No significant differences were found between regular-shift nurses and rotating-shift nurses in terms of sleep patterns and cardiac autonomic functions during day shift. When comparing sleep patterns within shift groups, the total sleep time of night shift was lower than their other shifts. Controlling for the variable of total sleep time allowed us to compare cardiac autonomic functions following different shifts (for the rotating shift nurses). During the non-rapid eye movement and rapid eye movement periods, the high frequency (HF) value on rotating shift nurses' days off was found to be significantly higher than their other shifts. However, the low to high frequency ratio (LF/HF) on days off was found to be obviously lower than that during shift work. Two consecutive days off may be sufficient for nurses to recover sleep-related autonomic functions after a rapidly rotating, clockwise three-shift schedule. Sleep-related autonomic functions may be improved during days off to minimize health risks.

Keywords: Nurses, Sleep, Autonomic nervous system, Heart rate variability, Shift work

Tuberculosis

A4977: Multidrug Resistance among New Tuberculosis Cases: Detecting Local Variation Through Lot Quality-assurance Sampling

Author: Bethany Lynna Hedt and others

Source: Epidemiology, 23, 2 (March, 2012): 293-300

Abstract: **Background:** Current methodology for multidrug-resistant tuberculosis (MDR TB) surveys endorsed by the World Health Organization provides estimates of MDR TB prevalence among new cases at the national level. On the aggregate, local variation in the burden of MDR TB may be masked. This paper investigates the utility of applying lot quality-assurance sampling to identify geographic heterogeneity in the proportion of new cases with multidrug resistance. **Methods:** We simulated the performance of lot quality-assurance sampling by applying these classification-based approaches to data collected in the most recent TB drug-resistance surveys in Ukraine, Vietnam, and Tanzania. We explored 3 classification systems— two-way static, three-way static, and three-way truncated sequential sampling—at 2 sets of thresholds: low MDR TB = 2%, high MDR TB = 10%, and low MDR TB = 5%, high MDR TB = 20%. **Results:** The lot quality-assurance sampling systems identified local variability in the prevalence of multidrug resistance in both high-resistance (Ukraine) and low-resistance settings (Vietnam). In Tanzania,

prevalence was uniformly low, and the lot quality-assurance sampling approach did not reveal variability. The three-way classification systems provide additional information, but sample sizes may not be obtainable in some settings. New rapid drug-sensitivity testing methods may allow truncated sequential sampling designs and early stopping within static designs, producing even greater efficiency gains. **Conclusions:** Lot quality-assurance sampling study designs may offer an efficient approach for collecting critical information on local variability in the burden of multidrug-resistant TB. Before this methodology is adopted, programs must determine appropriate classification thresholds, the most useful classification system, and appropriate weighting if unbiased national estimates are also desired.

Keywords: Tuberculosis, Quality-assurance Sampling

A5010: Drug resistance in tuberculosis in South-East Asia

Vineet Bhatia and others

Regional Health Forum, 15, 1 (2011): 44-51

Abstract: The South-East Asia Region (SEAR) of WHO bears around one third of the global burden of multidrugresistant (MDR-TB). Extensively drug-resistant TB (XDR-TB) has also been reported from five countries in the Region. Evidence suggests that drug resistance is essentially a man-made phenomenon because of inadequate or poorly administered treatment. Current treatment regimens recommended under DOTS cure TB patients and prevent emergence of resistance. Even though countries in the Region have 100% geographical coverage, access to DOTS services for marginalized and vulnerable populations remains an issue. International Standards of TB Care is not yet adopted by all providers. For existing resistant cases there is limited capacity and experience in diagnosing and managing MDR-TB cases. Limited laboratory capacity for diagnosis of drug resistant cases and for surveillance, difficulties in procuring quality secondline drugs and long lead times for procurement are some of the constraints. Substantial additional resources are required to scale up programmatic management of drug resistant TB. Several steps are required to simultaneously scale up diagnosis, treatment and surveillance of MDR and XDR-TB. These include technical and financial support to countries by WHO, technical partners and funding agencies; programme efforts to ensure implementation of all elements of the Stop-TB strategy including mobilization of sufficient resources; regulatory measures to ensure rational use of drugs; an infection control policy to prevent spread and community.

Keywords: South-East Asia, Tuberculosis, Drug.

Women Health

A4967: Role of litigation in ensuring women's reproductive rights: an analysis of the Shanti Devi judgment in India

Author: Jameen Kaur

Source: Reproductive Health Matters, 20, 39 (May, 2012): 21-30

Abstract: The struggle for reproductive self-determination has specific significance for women and girls in India, where a maternal death occurs every five minutes. This paper analyses the role litigation played in seeking redress for violations of the reproductive rights of Shanti Devi, who died in childbirth in 2010 in Haryana state, and some of the socio-economic, cultural, political and legal factors involved. It provides a brief overview of India's national and international obligations with regard to maternal health, and through the lens of the litigation in Shanti Devi's case, it examines how the government failed to protect, respect and fulfill her right to life and health. Litigation can be used to ensure accountability in further cases by building on case law, informing communities about these decisions and their rights, and holding government accountable at local, state and central level. Litigation also has limits, most importantly due to people's lack of awareness of their rights and entitlements, the lack of government outreach programmes informing them of these, and the lack of accountability mechanisms within health programmes when they are not transparent or functioning effectively. Thus, although constitutional justice is an important tool for democratic progress and social change, social justice will only be achieved through broader social struggle.

Keywords: Maternal mortality, Law and policy, Litigation, Reproductive rights, Human rights, India

List of Author Index

Hadley, Jack	A4960
Hagopian, Amy	A4956
Harris, Magdalena	A4980
Hedt, Bethany Lynna	A4977
Iguiniz-Romero, Ruth	A4971
Janke, Megan C.	A4986
John, AS	A4965
Kaur, Jameen	A4967
Kirkevold, Marit	A4984
Kline, Rachel	A4953
Kraft, Robert	A4999
Labrique, Alain B	A4968
Lekas, Helen-Maria	A4981
Levesque, Janelle V.	A4987
Luo, Ye	A5005
Maybery, Darryl	A4987
Meng, Qun	A4996
Monali, Goswami	A4962
Moran, Paul	A4991
Murray, Christopher JL	A4992
Pacagnella, Rodolfo Carvalho	A4970
Pal, Rama	A4959
Palomino, Nancy	A4971
Parikh, Nisha I.	A5002

Park, Jungsun	A4951
Rajagopal, N.	A4975
Rao, PSS	A4965
Rejeski, W. Jack	A4950
Reschovsky, James D.	A4960
Rothwell, Erin	A4982
Sedgh, Gilda	A4995
Shippee, Tetyana P.	A4973
Smith, Matthew R	A4988
Subha, B	A4966
Sully, Jennie-Laure	A4983
Tatum, Carrie	A4955
Trondsen, Marianne V.	A4985
Walque, Damien de	A4953
Whitworth, Kristina W.	A4976
Wilmoth, John	A4958
Wu, Zheng	A4972
Zajacova, Anna	A4974
Zhivan, Natalia A.	A4964
Zoffmann, Vibeke	A4984

List of Keyword Index

Breast Cancer	A4978, A5001
Breastfeeding	A4962
Breastfeeding Mothers	A4990
Burn Care	A4999
Cancer	A4978, A4987, A4988, A4988
Cancer- Psychosocial Aspects	A4987
Cardiovascular Disease	A4949, A4949, A4951, A5002
Cardiovascular Diseases	A4951
Catastrophic Health Expenditure	A4959
Cause-Specific Mortality	A4974
Chemotherapy	A4989
Child Health	A5000
Child Health Care and Development	A4994
Childbirth	A5004
Childhood Vaccination	A5003
China	A4996
Colostrums	A4962
Communication	A4982, A4984
Community and Public Health	A4982
Community Health Workers	A4957
Comorbidity	A4972
Concept Development	A4983
Consumption of Necessities	A4959
Content Analysis	A4986

Coronary Artery Disease	A4998, A4998
Cpoe	A4964
Cumulative Inequality Theory	A4973
Data Analysis	A4971
Data Collection	A4971
Death Rates	A4958
Decision Making	A4955, A4984
Demography	A4992, A4968, A4969, A4970
Demography & Statistics	A4958, A4960, A4966, A4970, A4971, A4973, A4991, A5004, A5005
Depression	A4972, A4972
Depressive Symptoms	A4972
Diabetes	A4950, A4984, A4984
Diabetes Mellitus	A4961
Disease	A4949
Elderly	A5005
Emergency Care	A4982
Emergency Obstetric Care	A4970
Emotion Work	A4987
Emotional Health	A5005
EMR	A4964
Environment & Pollution	A4979
Epidemiology	A4961
Equity	A5000

Health Seeking Behavior	A5004
Health Services	A4996
Health Systems	A4966
Health Workers	A4956
Heart Disease	A4983
Heart Rate Variability	A4952
Hepatitis	A4980
Hepatitis C	A4980, A4981
Hit Adoption	A4964
HIV	A4953, A4981
HIV Infection	A4953
HIV-1 Infection	A4990
HIV/AIDS	A4953, A4981, A4990
Hospital Inefficiency	A4964
Human Chorionic Gonadotropin	A4989
Human Rights	A4967
Hypertension	A4993, A4993
Illness	A4985
Illness and Disease	A4980, A4987
Immunization	A4962
India	A4959, A4965, A4966, A4967
Infant Children	A4990
Infants Aged	A4994
Infertility	A5001

Knowledge Level	A4957
Law and Policy	A4967
Leprosy	A4965, A4965
Life History	A4980
Lifestyle Change	A4950
Lifetime Risks	A4949
Litigation	A4967
Loneliness	A5005
Longitudinal Study	A5005
Malaria	A4992, A4992
Managed Care	A4963
Maternal	A5000
Maternal and Child Health	A4956, A4957, A4962, A5000, A5003
Maternal and Infant Health	A4968, A4969
Maternal Health	A4995
Maternal Mortality	A4967, A4971, A5004
Maternal Mortality and Morbidity	A4966, A4970
Maternity Benefits	A4966
Maternity Leave	A5003
Maternity Services	A4968, A4969
Medicare	A4963
Medicare Spending	A4960
Mental Health	A4985
Mexico	A4955

Tribal	A4975
Tuberculosis	A4977, A4977
Type 2 Diabetes	A4950
U.S. Hospital	A4964
Under-Nutrition	A4965
USA	A5005
Vascular Disease	A4997
Women Health	A4967
Work-Related Cerebrovascular	A4951
Y Chromosome	A4998
Young Adulthood	A4991