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ADOLESCENT HEALTH

1. **Oxford Journals Medicine & Health Feasibility and acceptability of delivering adolescent health interventions alongside HPV vaccination in Tanzania**. Deborah Watson-Jones1,2,*, Shelley Lees3, Joseph Mwanga4, Nyasule Neke4, John Changalucha4, Nathalie Broutet5, Ibrahim Maduhu6, Saidi Kapiga1,7, Venkatraman Chandra-Mouli5, Paul Bloem5 and David A Ross. *Health Policy and Planning Volume 31, Issue 6, September 2016, Pp. 691-699.*

Human papillomavirus (HPV) vaccination offers an opportunity to strengthen provision of adolescent health interventions (AHI). We explored the feasibility of integrating other AHI with HPV vaccination in Tanzania.A desk review of 39 policy documents was preceded by a stakeholder meeting with 38 policy makers and partners. Eighteen key informant interviews (KIIs) with health and education policy makers and district officials were conducted to further explore perceptions of current programs, priorities and AHI that might be suitable for integration with HPV vaccination.Fourteen school health interventions (SHI) or AHI are currently being implemented by the Government of Tanzania. Most are delivered as vertical programmes. Coverage of current programs is not universal, and is limited by financial, human resource and logistic constraints. Limited community engagement, rumours, and lack of strategic advocacy has affected uptake of some interventions, e.g. tetanus toxoid (TT) immunization. Stakeholder and KI perceptions and opinions were limited by a lack of experience with integrated delivery and AHI that were outside an individual's area of expertise and experience. Deworming and educational sessions including reproductive health education were the most frequently mentioned interventions that respondents considered suitable for integrated delivery with HPV vaccine.Given programme constraints, limited experience with integrated delivery and concern about real or perceived side-effects being attributed to the vaccine, it will be very important to pilot-test integration of AHI/SHI with HPV vaccination. Selected interventions will need to be simple and quick to deliver since health workers are likely to face significant logistic and time constraints during vaccination visits.

Key words: Adolescent health, HPV, Integration, Tanzania, Vaccine

2. **Assessing girls' HIV vulnerability: evidence from Botswana, Malawi and Mozambique.** Carol R Underwood1,* and Hilary M Schwandt. *Health Policy and Planning Volume 31, Issue 6, July 2016, Pp. 729-735.*

Past research documents multiple factors associated with girls' susceptibility to human immunodeficiency virus transmission; yet a literature review found no systematic approach to measure vulnerability. This study characterized, developed and tested a set of indicators to measure girls' vulnerability, resulting in the vulnerable girls index (VGI). A quasi- experimental, separate-sample pre-/post-test design was used to test the index. Adolescent girls were randomly drawn for the pre-test (2277 respondents) and post-test (1418 respondents) from 16 purposively selected communities in Botswana, Malawi and Mozambique. The higher the VGI score—or the more vulnerable the girl—the more likely she was to report premarital sexual experience across the three countries and the more likely she was to report low agency to insist upon condom use in Botswana and Mozambique. The VGI can be used to assess girls' vulnerability levels across time and space for policy and programme planning purposes, and as part of programme evaluations.

Key words: Adolescent Health, HIV prevention, Gender, Health Behaviour

3. **Instability in Parent–Child Coresidence and Adolescent Development in Urban South Africa**. Letícia J. Marteleto, Shannon Cavanagh, Kate Prickett, Shelley Clark. *Studies in Family Planning. Vol 47, Issue 1, March 2016*

There is widespread recognition of the importance of family stability for child development. South Africa presents an interesting context in which to study the consequences of family instability because of the traditionally fluid nature of household composition due to labor migration, child fostering, and non-marital fertility. More recently, the HIV pandemic has added another source of instability. Within South Africa, however, patterns of instability differ markedly across racial groups. We use the Cape Area Panel Study (CAPS) data to examine the implications of changes in parent–child coresidence for educational and sexual development of young South Africans. We show that changes in maternal

and paternal coresidence have implications for the timing of sexual initiation for both black and coloured adolescents. Maternal and paternal transitions also lead to poorer educational outcomes for coloured adolescents, but parental disruptions are not significantly related to educational outcomes for blacks. These findings suggest that the implications of coresidential instability vary by race, reflecting racial differences with respect to cultural, social, and economic conditions.

Key Words: Adolescent Development, South Africa, Cape Area Panel Study

4. **Empowering Adolescent Girls in Socially Conservative Settings: Impacts and Lessons Learned from the Ishraq Program in Rural Upper Egypt**. Maia Sieverding, Asmaa Elbadawy. *Studies in Family Planning, Vol 47, Issue 2, June 2016*

In rural Upper Egypt, adolescence is a critical period in girls' transition to adulthood during which they are at risk for a number of negative outcomes, including restricted mobility and early marriage and childbearing. This study evaluates and presents lessons learned from Ishraq, an educational program that established safe spaces for out-of-school adolescent girls in rural Upper Egypt. Baseline and endline surveys were administered to all households containing an eligible girl in the program areas. We analyze the predictors of program enrollment and dropout and use difference-in-differences estimation to evaluate the impact of the program on participants as compared to non-participating eligible girls. Although we find positive impacts on literacy, attitudes toward sports, and reproductive health knowledge, little impact was found on broader indicators of empowerment, and no impact on the attitudes of participants' mothers or brothers. The experience of the Ishraq program highlights several key challenges facing safe spaces programs for adolescent girls, including targeting of a dispersed population with restricted mobility, reaching girls at a young age, achieving community-level attitudinal change, and the need for long-term follow-up of participants to measure behavioral change.

Keywords: Adolescent Health, Women Empowerment, Ishraq program

CHILD HEALTH

5. **Inpatient management of children with severe acute malnutrition: a review of WHO guidelines**. Kirkby D Tickell & Donna M Denno. *Bulletin of the World Health Organization.Vol94/Issue 9,September 2016,P- 642*

In December 2015, we searched Google scholar and WHO's website for WHO recommendations on severe acute malnutrition management and evaluated the history and cited evidence behind these recommendations. We systematically searched WHO International Clinical Trials Registry Platform, clinicaltrials.gov and the Controlled Trials metaRegister until 10 August 2015 for recently completed, ongoing, or pending trials. WHO's guidelines provide 33 recommendations on the topic. However, 16 (48.5%) of these recommendations were based solely on expert opinion – unsupported by published evidence. Another 11 (33.3%) of the recommendations were supported by the results of directly relevant research – i.e. either randomized trials (8) or observational studies (3). The other six recommendations (18.2%) were based on studies that were not conducted among children with complicated severe malnutrition or studies of treatment that were not identical to the recommended intervention. Trials registries included 20 studies related to the topic, including nine trials of alternative feeding regimens. Acute medical management and follow-up care studies were minimally represented.

Key Words: Child Health, Malnutrition, WHO Guidelines

6. **Low-quality scientific evidence for the continuation of universal Vitamin A supplementation among under 5 children in India**. Umesh Kapil, Aakriti Gupta. *Indian Journal of Public Health.Vol 60/Issue 3/Jul-Sept. 2016/p. 176*

Vitamin A supplementation (VAS) is presently being undertaken in India among under 5 (U5) children for two possible benefits (i) to prevent nutritional blindness due to Vitamin A deficiency (VAD) and (ii) to reduce U5 mortality. The existing scientific evidence suggests that nutritional blindness due to VAD has been

virtually eliminated and also the difference between U5 mortality rate and infant mortality rate is very low for VAS to have any meaningful impact. On the contrary, scientific evidence indicates that there could be side effects of the administration of mega dose of Vitamin A (MDVA). These side effects of MDVA have not been systematically investigated. The universal VAS should be discontinued immediately as there are no likely benefits to U5 children.

Key Words: Vitamin A supplementation, Child Health

7. **Epidemiology of childhood overweight & obesity in India: A systematic review**. Harish Ranjani1, TS Mehreen1, Rajendra Pradeepa1, Ranjit Mohan Anjana1, Renu Garg2, Krishnan Anand3, Viswanathan Mohan1. *Indian Journal of Medical Research,Volume : 143 / Issue : 2,Feb 2016 ,Page : 160-174*

Background & objectives: Childhood obesity is a known precursor to obesity and other non-communicable diseases (NCDs) in adulthood. However, the magnitude of the problem among children and adolescents in India is unclear due to paucity of well-conducted nationwide studies and lack of uniformity in the cut-points used to define childhood overweight and obesity. Hence an attempt was made to review the data on trends in childhood overweight and obesity reported from India during 1981 to 2013. Methods: Literature search was done in various scientific public domains from the last three decades using key words such as childhood and adolescent obesity, overweight, prevalence, trends, etc. Additional studies were also identified through cross-references and websites of official agencies. Results: Prevalence data from 52 studies conducted in 16 of the 28 States in India were included in analysis. The median value for the combined prevalence of childhood and adolescent obesity showed that it was higher in north, compared to south India. The pooled data after 2010 estimated a combined prevalence of 19.3 per cent of childhood overweight and obesity which was a significant increase from the earlier prevalence of 16.3 per cent reported in 2001-2005. Interpretation & conclusions: Our review shows that overweight and obesity rates in children and adolescents are increasing not just among the higher socio-economic groups but also in the lower income groups where underweight still remains a major concern.

Keywords: Child Health, Childhood Obesity, Overweight

8. **Neonatal mortality within 24 hours of birth in six low- and lower-middle-income countries**. Abdullah H Baqui, Dipak K Mitra, Nazma Begum, Lisa Hurt, Seyi Soremekun, Karen Edmond, Betty Kirkwood, Nita Bhandari, Sunita Taneja, Sarmila Mazumder, Muhammad Imran Nisar, Fyezah Jehan, Muhammad Ilyas, Murtaza Ali, Imran Ahmed, Shabina Ariff, Sajid B Soofi, Sunil Sazawal, Usha Dhingra, Arup Dutta, Said M Ali, Shaali M Ame, Katherine Semrau, Fern M Hamomba, Caroline Grogan, Davidson H Hamer, Rajiv Bahl, Sachiyo Yoshida & Alexander Manu. *Bulletin of the World Health Organization, Vol 94, Issue 10, October 2016, 752*

To estimate neonatal mortality, particularly within 24 hours of birth, in six low- and lower-middle-income countries.We analysed epidemiological data on a total of 149 570 live births collected between 2007 and 2013 in six prospective randomized trials and a cohort study from predominantly rural areas of Bangladesh, Ghana, India, Pakistan, the United Republic of Tanzania and Zambia. The neonatal mortality rate and mortality within 24 hours of birth were estimated for all countries and mortality within 6 hours was estimated for four countries with available data. The findings were compared with published model-based estimates of neonatal mortality.Overall, the neonatal mortality rate observed at study sites in the six countries was 30.5 per 1000 live births (range: 13.6 in Zambia to 47.4 in Pakistan). Mortality within 24 hours was 14.1 per 1000 live births overall (range: 5.1 in Zambia to 20.1 in India) and 46.3% of all neonatal deaths occurred within 24 hours (range: 36.2% in Pakistan to 65.5% in the United Republic of Tanzania). Mortality in the first 6 hours was 8.3 per 1000 live births, i.e. 31.9% of neonatal mortality.Neonatal mortality within 24 hours of birth in predominantly rural areas of six low- and lower-middle-income countries was higher than model-based estimates for these countries. A little under half of all neonatal deaths occurred within 24 hours of birth and around one third occurred within 6 hours. Implementation of high-quality, effective obstetric and early newborn care should be a priority in these settings

Keywords: Neonatal Mortality, Lower-middle-income countries, Child Health

9. **Data on survival of recent births as a source of child mortality estimates in the developing world: An assessment of census data**. Leena Merdad, Kenneth Hill & Michael Levin. *Population Studies, Vol 70, Issue 3, Nov 2016, Pages 345-358*

In many less developed countries, household surveys collect full and summary birth histories to provide estimates of child mortality. However, full birth histories are expensive to collect and cannot provide precise estimates for small areas, and summary birth histories only provide past child mortality trends. A simple method that provides estimates for the most recent past uses questions about the survival of recent births in censuses or large household surveys. This study examines such data collected by 45 censuses and shows that on average they tend to underestimate under-5 mortality in comparison with alternative estimates, albeit with wide variations. In addition, the high non-sampling uncertainty in this approach precludes its use in providing robust estimates of child mortality at the country level. Given these findings, we suggest that questions about the survival of recent births to collect data on child mortality not be included in census questionnaires.

Keywords: Child Mortality, Child Survival, Millennium Development Goals, Survival of Recent Births, Census, Less Developed Countries

CONTRACEPTION

10. **Population Policy: Abortion and Modern Contraception Are Substitutes.** Miller, G. & Valente, C. *Demography .Volume 53, Issue 4, August 2016, pp 979–1009*

A longstanding debate exists in population policy about the relationship between modern contraception and abortion. Although theory predicts that they should be substitutes, the empirical evidence is difficult to interpret. What is required is a large-scale intervention that alters the supply (or full price) of one or the other and, importantly, that does so in isolation (reproductive health programs often

bundle primary health care and family planning—and in some instances, abortion services). In this article, we study Nepal's 2004 legalization of abortion provision and subsequent expansion of abortion services, an unusual and rapidly implemented policy meeting these requirements. Using four waves of rich individual-level data representative of fertile-age Nepalese women, we find robust evidence of substitution between modern contraception and abortion. This finding has important implications for public policy and foreign aid, suggesting that an effective strategy for reducing expensive and potentially unsafe abortions may be to expand the supply of modern contraceptives.

Keywords: Abortion, Contraception, Nepal

11. **The perplexing links between contraceptive sterilization and (dis)advantage in ten low-fertility countries**. Mieke C. W. Eeckhaut & Megan M. Sweeney. *Population Studies, Vol 70, Issue 1, March 2016, Pages 39-58*

This study investigated the association between contraceptive sterilization and socio-economic status (measured by educational attainment) in ten countries, using data from the 2006–10 National Survey of Family Growth and the 2004–10 Generations and Gender Surveys. The findings confirm that a long-standing association between socio-economic status and sterilization persists in the contemporary United States: female sterilization is associated with economic disadvantage, whereas male sterilization is associated with economic advantage. The latter association is found to be unique to the United States, but female sterilization is associated with disadvantage in most of the other countries studied. While basic demographic background factors such as early childbearing and parity can explain the observed associations in most of the countries, a strong gendered association between sterilization and socio-economic status remains in the United States and Belgium even after adjusting for these factors.

Keywords: Contraception, Sterilization, Socio-economic status, Comparative analysis, United States

DISEASES

12. **A retrospective analysis of oral cholera vaccine use, disease severity and deaths during an outbreak in South Sudan.** Cavin Epie Bekolo, Joris Adriaan Frank van Loenhout, Jose Manuel Rodriguez-Llanes, John Rumunu, Otim Patrick Ramadan & Debarati Guha-Sapir. *Bulletin of the World Health Organization.Vol94/Issue 9/September 2016,P 667*

The study involved a retrospective analysis of demographic and clinical data from 41 cholera treatment facilities in South Sudan on patients who developed cholera disease between 23 April and 20 July 2014 during a large outbreak, a few months after a pre-emptive oral vaccination campaign. Patients who developed severe dehydration were regarded as having a severe cholera infection. Vaccinated and unvaccinated patients were compared and multivariate logistic regression analysis was used to identify factors associated with developing severe disease or death.In total, 4115 cholera patients were treated at the 41 facilities: 1946 (47.3%) had severe disease and 62 (1.5%) deaths occurred. Multivariate analysis showed that patients who received two doses of oral cholera vaccine were 4.5-fold less likely to develop severe disease than unvaccinated patients (adjusted odds ratio, aOR: 0.22; 95% confidence interval, CI: 0.11–0.44). Moreover, those with severe cholera were significantly more likely to die than those without (aOR: 4.76; 95% CI: 2.33–9.77).

Key Words: Vaccine, Cholera Vaccine

13. **Zika: the origin and spread of a mosquito-borne virus**. Mary Kay Kindhauser, Tomas Allen, Veronika Frank, Ravi Shankar Santhana & Christopher Dye. *Bulletin of the World Health Organization.Vol94/Issue 9/September 2016,P 675*

To describe the temporal and geographical distribution of Zika virus infection and associated neurological disorders, from 1947 to 1 February 2016, when Zika became a Public Health Emergency of International Concern (PHEIC).We did a

literature search using the terms "Zika" and "ZIKV" in PubMed, cross-checked the findings for completeness against other published reviews and added formal notifications to WHO submitted under the International Health Regulations.From the discovery of Zika virus in Uganda in 1947 to the declaration of a PHEIC by the World Health Organization (WHO) on 1 February 2016, a total of 74 countries and territories had reported human Zika virus infections. The timeline in this paper charts the discovery of the virus (1947), its isolation from mosquitos (1948), the first human infection (1952), the initial spread of infection from Asia to a Pacific island (2007), the first known instance of sexual transmission (2008), reports of Guillain-Barré syndrome (2014) and microcephaly (2015) linked to Zika infections and the first appearance of Zika in the Americas (from 2015).

Key Words: Zika Virus, Mosquito Born Diseases

14. **Evaluation of care access and hypertension control in a community health worker driven non-communicable disease programme in rural Uganda: the chronic disease in the community project**. Daniel S O'Neil1,2, Wanda C Lam2,3, Patience Nyirangirimana2,5, William B Burton4, Michael Baganizi2,5, Sam Musominali2,5, Deus Bareke2,5 and Gerald A Paccione2,4. *Health Policy and Planning Volume 31, Issue 7, September 2016,Pp. 878-883.*

The burden of non-communicable diseases continues to grow throughout the developing world. Health systems in low- and middle-income regions face significant human resource shortages, which limit the ability to meet the growing need for non-communicable disease care. Specially trained community health workers may be useful in filling that provider gap. This study aimed to evaluate consistency of access to care and quality of hypertension control in a community health worker led, decentralized non-communicable disease programme operating in rural Uganda. Days between clinical evaluations and average systolic blood pressure were described for programme patients; these markers were also compared with patients seen in a central, hospital-based clinic. In 2013, community health worker programme patients were seen every 35.6 days and significantly more often than clinic patients (50.8 days, $P < 0.001$). From October to December 2013, hypertensive patients in the community health worker

programme had a mean systolic blood pressure of 147.8 mmHg. This was lower than the average systolic pressure of clinic patients (156.7 mmHg, $P < 0.001$). Programme patients' blood pressures were also more frequently measured at below goal than clinic patients (71.2 vs 59.8%, $P = 0.048$). Decentralizing care and shifting significant clinical management responsibilities to community health workers improved consistency of access to care and did not come with a demonstrable cost in quality of hypertension control. Community health workers may have the potential to bridge the provider gap in low-income nations, providing expanded non-communicable disease care.

Key words: Community Health Workers, Hypertension, Non-communicable Disease, Task shifting

15. **The relationship between non-communicable disease occurrence and poverty—evidence from demographic surveillance in Matlab, Bangladesh**. Andrew J Mirelman1,*, Sherri Rose2, Jahangir AM Khan3, Sayem Ahmed3, David H Peters4, Louis W Niessen5 and Antonio J Trujillo. *Health Policy and Planning Volume 31, Issue 6, July 2016,Pp. 785-792.*

In low-income countries, a growing proportion of the disease burden is attributable to non-communicable diseases (NCDs). There is little knowledge, however, of their impact on wealth, human capital, economic growth or household poverty. This article estimates the risk of being poor after an NCD death in the rural, low-income area of Matlab, Bangladesh. In a matched cohort study, we estimated the 2-year relative risk (RR) of being poor in Matlab households with an NCD death in 2010. Three separate measures of household economic status were used as outcomes: an asset-based index, self-rated household economic condition and total household landholding. Several estimation methods were used including contingency tables, log-binomial regression and regression standardization and machine learning. Households with an NCD death had a large and significant risk of being poor. The unadjusted RR of being poor after death was 1.19, 1.14 and 1.10 for the asset quintile, self-rated condition and landholding outcomes. Adjusting for household and individual level independent variables with log-binomial regression gave RRs of 1.19 [standard error (SE) 0.09], 1.16 (SE 0.07) and 1.14 (SE 0.06), which

were found to be exactly the same using regression standardization (SE: 0.09, 0.05, 0.03). Machine learning-based standardization produced slightly smaller RRs though still in the same order of magnitude. The findings show that efforts to address the burden of NCD may also combat household poverty and provide a return beyond improved health. Future work should attempt to disentangle the mechanisms through which economic impacts from an NCD death occur.

Key words: Non-communicable Disease, Poverty, Bangladesh

16. **Targeting the AKT pathway: Repositioning HIV protease inhibitors as radiosensitizers**. Jayant S Goda1, Tejaswini Pachpor1, Trinanjan Basu1, Supriya Chopra1, Vikram Gota.Jayant S Goda. *Indian Journal of Medical Research, Volume 143 / Issue : 2 /Feb 2016 Page : 145-159*

Cellular resistance in tumour cells to different therapeutic approaches has been a limiting factor in the curative treatment of cancer. Resistance to therapeutic radiation is a common phenomenon which significantly reduces treatment options and impacts survival. One of the mechanisms of acquiring resistance to ionizing radiation is the overexpression or activation of various oncogenes like the EGFR (epidermal growth factor receptor), RAS (rat sarcoma) oncogene or loss of PTEN (phosphatase and tensin homologue) which in turn activates the phosphatidyl inositol 3-kinase/protein kinase B (PI3-K)/AKT pathway responsible for radiation resistance in various tumours. Blocking the pathway enhances the radiation response both in vitro and in vivo. Due to the differential activation of this pathway (constitutively activated in tumour cells and not in the normal host cells), it is an excellent candidate target for molecular targeted therapy to enhance radiation sensitivity. In this regard, HIV protease inhibitors (HPIs) known to interfere with PI3-K/AKT signaling in tumour cells, have been shown to sensitize various tumour cells to radiation both in vitro and in vivo. As a result, HPIs are now being investigated as possible radiosensitizers along with various chemotherapeutic drugs. This review describes the mechanisms by which PI3-K/AKT pathway causes radioresistance and the role of HIV protease inhibitors especially nelfinavir as a potential candidate drug to target the AKT pathway for overcoming radioresistance and its use in various clinical trials for different malignancies.

Keywords: HIV, AKT

17. **Measles & rubella outbreaks in Maharashtra State, India** .Sunil R Vaidya, Madhukar B Kamble, Deepika T Chowdhury, Neelakshi S Kumbhar. *Indian Journal of Medical Research ,Volume : 143 , Issue : 2, Feb 2016 , Page : 227-231*

Under the outbreak-based measles surveillance in Maharashtra State the National Institute of Virology at Pune receives 3-5 serum samples from each outbreak and samples from the local hospitals in Pune for laboratory diagnosis. This report describes one year data on the measles and rubella serology, virus isolation and genotyping. Methods: Maharashtra State Health Agencies investigated 98 suspected outbreaks between January-December 2013 in the 20 districts. Altogether, 491 serum samples were received from 20 districts and 126 suspected cases from local hospitals. Samples were tested for the measles and rubella IgM antibodies by commercial enzyme immunoassay (EIA). To understand the diagnostic utility, a subset of serum samples (n=53) was tested by measles focus reduction neutralization test (FRNT). Further, 37 throat swabs and 32 urine specimens were tested by measles reverse transcription (RT)-PCR and positive products were sequenced. Virus isolation was performed in Vero hSLAM cells. Results: Of the 98 suspected measles outbreaks, 61 were confirmed as measles, 12 as rubella and 21 confirmed as the mixed outbreaks. Four outbreaks remained unconfirmed. Of the 126 cases from the local hospitals, 91 were confirmed for measles and three for rubella. Overall, 93.6 per cent (383/409) confirmed measles cases were in the age group of 0-15 yr. Measles virus was detected in 18 of 38 specimens obtained from the suspected cases. Sequencing of PCR products revealed circulation of D4 (n=9) and D8 (n=9) strains. Four measles viruses (three D4 & one D8) were isolated. Interpretation & conclusions: Altogether, 94 measles and rubella outbreaks were confirmed in 2013 in the State of Maharasthra indicating the necessity to increase measles vaccine coverage in the State.

Keywords: Measles, Rubella, Vaccine

18. **Outcome of Diabetic Pregnancies in a Tertiary Referral Centre, Varanasi**. Uma Pandey, Neeraj Kumar Agrawal, Shilpa Agrawal, Shuchita Batra. *The Journal of Obstetrics and Gynecology of India, Volume 66, Issue 4, August 2016, pp 226–232*

The study was done to determine the maternal and fetal outcome of pregnancies complicated by maternal diabetes either Gestational Diabetes Mellitus (GDM) or preexisting (type 1 or type 2) diabetes over a period from March 2011 to Feb 2013 in a tertiary care hospital, Varanasi.This is a retrospective audit of the maternal and fetal outcome of women who presented to the Sir Sundar Lal Hospital, Department of Obstetrics and Gynaecology, Institute of Medical Sciences, Banaras Hindu University, Varanasi, India from March 2011 to Feb 2013, with GDM or pre-existing type 1 or type 2 Diabetes with pregnancy. The audit group comprised 65 pregnancies (67 babies), of whom 27 had preexisting diabetes and 38 cases developed gestational diabetes. Pregnant women who were found to be diabetic preconceptionally or in the first trimester were classified as 'pre-existing diabetes'.There were total of 65 diabetic women in this retrospective study, 39 women were GDM (60 %) while 26 women (40 %) were having pre-existing diabetes (24 type 1 diabetes and 2 women were in type 2 diabetes group). There were 35 multigravid women (53.85 %) and 30 primigravid women (46.15 %). There were 39 (60 %) women on Insulin. There were 42 Lower Segment Caesarean Section (64.62 %) and 23 Spontaneous Vaginal Delivery (35.38 %). In fetal and neonatal complications, there were three still births, one case of intrapartum death, and one case of shoulder dystocia. Fetal anomalies were less frequent, one case of Gastroschisis with Hydrocephalus associated with Menigomyelocoele, there was one case of isolated Hydrocephalus, and there was also one case of Truncus arteriosus.The study analyses maternal and fetal complication in the GDM group and also preexisting diabetes group. In our centre, the 60 % women were GDM while 40 % were having pre-existing diabetes. Total rate of fetal/neonatal complication rate was 7.69 % and of congenital anomaly rate it was 9.23 %. Proportion of still birth, Intrauterine death, and congenital malformations was higher in the pre-existing diabetes group although the data are not large enough to draw a statistically significant conclusion. LSCS rate was little higher in the GDM group (69.23 %) in comparison to the preexisting diabetes group where it was 57.69 %. SVD (Spontaneous Vaginal Delivery) rate was 30.77 % in GDM and 42.31 % in the pre-existing diabetes group. HbA1c was within normal range 84.62 % of GDM group while in 15.38 % it was raised >6 %. In the pre-existing diabetes group, only 19.23 % of women had HbA1c within acceptable range and 80.77 % had it >6. The aim

of St Vincent Declaration is to 'achieve pregnancy outcome in the diabetic woman that is similar to that of the non-diabetic woman.' But, so far we have not been able to achieve this. Our HbA1c level is remarkably high in the pre-existing diabetes group. Only 3 out of 65 patients' women took Folic Acid periconceptionally. We need to work to achieve it our best. It is well known that insulin treatment during pregnancy results in reduction in the rate of macrosomia, fetal/neonatal, and maternal complications. Therefore, we need to use insulin judiciously and advocate its usage in the situations where it is needed.

Keywords: Diabetes, Gestational diabetes, Maternal outcome, Fetal outcome, Complications

19. **The contribution of a history of heavy smoking to Scotland's mortality disadvantage**. Laura A. Kelly & Samuel H. Preston. *Population Studies, Vol 70, Issue 1, March 2016, Pages 59-71*

Scotland has a lower life expectancy than any country in Western Europe or North America, and this disadvantage is concentrated above age 50. According to the Human Mortality Database, life expectancy at age 50 has been lower in Scotland than in any other developed country since 1980. Relative to 15 developed countries that we have chosen for comparison, Scotland's life expectancy in 2009 at age 50 was lower by an average of 2.5 years for women and 1.6 years for men. We estimate that Scottish women lost 3.6 years of life expectancy at age 50 as a result of smoking, compared to 1.4 years for the comparison countries. The equivalent figures among men are 3.1 and 2.1 years. These differences are large enough for the history of heavy smoking in Scotland to account both for most of the shortfall in life expectancy for both sexes and for the country's unusually narrow sex differences in life expectancy.

Keywords: Mortality, Lung cancer, Tobacco, Smoking, Scotland, Geographic Variation

20. **Adding interventions to mass measles vaccinations in India.** Mira Johri, Stéphane Verguet, Shaun K Morris, Jitendar K Sharma, Usha Ram, Cindy Gauvreau, Edward Jones, Prabhat Jha & Mark Jit. *Bulletin of the World Health Organization. Vol.94, Issue 10, October 2016, Page 718*

We developed Lives Saved Tool models for 12 Indian states participating in the supplementary immunization, based on state- and sex-specific data on mortality from India's Million Deaths Study and on health services coverage from Indian household surveys. Potential add-on interventions were identified through a literature review and expert consultations. We quantified the number of lives saved for a campaign offering measles vaccine alone versus a campaign offering measles vaccine with six add-on interventions (nutritional screening and complementary feeding for children, vitamin A and zinc supplementation for children, multiple micronutrient and calcium supplementation in pregnancy, and free distribution of insecticide-treated bednets).The measles vaccination campaign saved an estimated 19 016 lives of children younger than 5 years. A hypothetical campaign including measles vaccine with add-on interventions was projected to save around 73 900 lives (range: 70 200–79 300), preventing 73 700 child deaths (range: 70 000–79 000) and 300 maternal deaths (range: 200–400). The most effective interventions in the whole package were insecticide-treated bednets, measles vaccine and preventive zinc supplementation. Girls accounted for 66% of expected lives saved (12 712/19 346) for the measles vaccine campaign, and 62% of lives saved (45 721/74 367) for the hypothetical campaign including add-on interventions.In India, a measles vaccination campaign including feasible, high-impact interventions could substantially increase the number of lives saved and mitigate gender-related inequities in child mortality.

Keywords: Measles Vaccine, Vaccination, India

21. **Estimation of child vaccination coverage at state and national levels in India**. Pankaj Bhatnagar, Satish Gupta, Rakesh Kumar, Pradeep Haldar, Raman Sethi & Sunil Bahl. *Bulletin of the World Health Organization, Vol 94, Issue 10, October 2016, Page 728*

To review the data, for 1999–2013, on state-level child vaccination coverage in India and provide estimates of coverage at state and national levels.We collated

data from administrative reports, population-based surveys and other sources and used them to produce annual estimates of vaccination coverage. We investigated bacille Calmette–Guérin vaccine, the first and third doses of vaccine against diphtheria, tetanus and pertussis, the third dose of oral polio vaccine and the first dose of vaccine against measles. We obtained relevant data covering the period 1999–2013 for each of 16 states and territories and the period 2001–2013 for the state of Jharkhand – which was only created in 2000. We aggregated the resultant state-level estimates, using a population-weighted approach, to give national values. For each of the vaccinations we investigated, about half of the 253 estimates of annual coverage at state level that we produced were based on survey results. The rest were based on interpolation between – or extrapolation from – so-called anchor points or, more rarely, on administrative data. Our national estimates indicated that, for each of the vaccines we investigated, coverage gradually increased between 1999 and 2010 but then levelled off.The delivery of routine vaccination services to Indian children appears to have improved between 1999 and 2013. There remains considerable scope to improve the recording and reporting of childhood vaccination coverage in India and regular systematic reviews of the coverage data are recommended.

Keywords: Child Vaccination, Vaccination Coverage

22. **Essential medicines for cancer: WHO recommendations and national priorities.** Jane Robertson, Ronald Barr, Lawrence N Shulman, Gilles B Forte & Nicola Magrini. *Bulletin of the World Health Organization, Vol 94, Issue 10, October 2016, Page 735*

To examine, for essential anti-cancer medicines, the alignment of national lists of essential medicines and national reimbursable medicines lists with the World Health Organization's (WHO's) Model Lists. National medicine lists for 135 countries with per-capita gross national incomes below 25 000 United States dollars in 2015 were compared with WHO's 2013 and 2015 Model Lists of Essential Medicines. Correlations between numbers of anti-cancer medicines included in national lists and gross national income (GNI), government health expenditure and number of physicians per 1000 population were evaluated. Of the 25 anti-cancer medicines on the 2013 Model List and the 16 added via the

2015 revision of the Model List, 0–25 (median: 17) and 0–15 (median: 3) appeared in national lists, respectively. There was considerable variability in these numbers within and between World Bank income groups. Of the 16 new medicines included in the 2015 Model List, for example, 0–10 (median: 1) and 2–15 (median: 10) were included in the national lists of low-income and high-income countries, respectively. The numbers of these new medicines included in national lists were significantly correlated ($P \leq 0.0001$) with per-capita GNI ($r = 0.45$), per-capita annual government health expenditure ($r = 0.33$) and number of physicians per 1000 population ($r = 0.48$). Twenty-one countries (16%) included the targeted anti-cancer medicines imatinib, rituximab and trastuzumab in their national lists.Substantial numbers of anti-cancer medicines are included in national lists of low- and middle-income countries but the availability, affordability, accessibility and administration feasibility of these medicines, at country-level, need assessment.

Keywords: Cancer, WHO recommendations

23. **Prevalence of type 2 diabetes mellitus among urban sikh population of Amritsar**. Amrinder Singh, Shweta Shenoy, Jaspal Singh Sandhu. *Indian Journal of Community Medicine, Volume 41, Issue 4 , Oct-Dec, 2016 ,Page : 263-267*

Type 2 Diabetes Mellitus (T2DM) refers to a group of common metabolic disorders that share the phenotype of Hyperglycemia. More than 60% of the world's population with diabetes comes from Asia. Aim: To study the prevalence of Type 2 Diabetes Mellitus among Sikh individuals living in the urban localities of Amritsar. Settings and Design: The study was designed in the Faculty of Sports Medicine & Physiotherapy, Guru Nanak Dev University ,Amritsar , Punjab, India. The data collection was carried out in various urban localities of Amritsar. Blood samples were analyzed in the Biochemistry laboratory, whereas data analysis and article preparation was carried out in the Faculty of Sports Medicine and Physiotherapy. Materials and Methods: Multi-stage random sampling was done with a sample size of 1089 patients. Statistical Analysis: The data was analyzed in Stata 11.2 software. Various tests used in the study are Mean± SD, Pearson Chi Square Test, Students' t test and multiple logistic

regression test. Results: Our study showed that the prevalence rate of Type 2 Diabetes Mellitus is 23.2% with the confidence interval of 20.7–25.7. Proportionately more patients with T2DM had hypertension (46.6%). Likewise proportionately more patients, 67.5% had hypertrigylerdemia, 67.6% had low HDL levels, 59.2 % had hypercholesterolemia and 73.1% suffered from metabolic syndrome. Conclusions: Our study clearly indicates that the young Sikh adults below 40 years of age have similar high BMI, WC and WHR to that of the older adults above 40 years of age. It is necessary to adopt appropriate preventive strategies and interventions in high-risk individuals to curb the growing epidemic of diabetes. Innovative community outreach programs need to be designed and implemented to create awareness and early screening and treatment of diabetes, especially in the urban population.

Keywords: Diabetes mellitus, Sikh population, Amritsar

24. **Study frequency of hypertension and obesity and their relationship with lifestyle factors (nutritional habits, physical activity, cigarette consumption) in Ardabil city physicians, 2012-13**.Afshin Fathi1, Saeid Sadeghieh Ahari, Firouz Amani, Mohammad Reza Nikneghad. *Indian Journal of Community Medicine, Vol 41, Issue 4, Oct-Dec 2016, Page 268-272*

Few studies have been done on lifestyle of Iranian physicians. As physicians have important role in health promotion, the main goal of the study was to assess the lifestyle of this influential group. Materials and Methods: A cross-sectional descriptive study was conducted on lifestyle of all registered physicians of Ardabil hospitals, Iran, 2012–13. In this research, 225 physicians were selected, by using simple random sampling. Demographic and lifestyle data were obtained by self-report using standard questionnaires, physical activity by official Iranian short-version of the international physical activity questionnaire, and dietary intake by food frequency questionnaire. Weight and height was performed according to standard protocols by using standardized and zero calibrated instruments. Data were analyzed by inferential statistics using Statistical Package for the Social Sciences.16 software. Results: Findings showed that 8% of participants were hypertensive, 21.3% smoker, 40%–47% inactive, 51.1% overweight, and 18.2% obese. There was a significant relationship between blood

pressure and self-reported lifestyle habits ($P < 0.05$). And 70.7% of males and 74.1% of females had regular 10-min walking each day and moderate activity of males was significantly higher than females ($P < 0.05$). Food frequency weekly consumption of overweight and obese physicians were significantly higher than normal weight physicians ($P < 0.05$). Conclusion: Few doctors follow a healthy lifestyle; this may have a negative effect on society attitude about health.

Keywords: Hypertension, Obesity, Nutritional Habits, Physical Activity, Cigarette Consumption

25. **Measuring Haitian children's exposure to chikungunya, dengue and malaria**. Mathieu JP Poirier, Delynn M Moss, Karla R Feeser, Thomas G Streit, Gwong-Jen J Chang, Matthew Whitney, Brandy J Russell, Barbara W Johnson, Alison J Basile, Christin H Goodman, Amanda K Barry & Patrick J Lammie. *Bulletin of the World Health Ogranization, Vol 94, Issue 11, Nov 2016, Page-817*

To differentiate exposure to the newly introduced chikungunya virus from exposure to endemic dengue virus and other pathogens in Haiti. We used a multiplex bead assay to detect immunoglobulin G (IgG) responses to a recombinant chikungunya virus antigen, two dengue virus-like particles and three recombinant Plasmodium falciparum antigens. Most (217) of the blood samples investigated were collected longitudinally, from each of 61 children, between 2011 and 2014 but another 127 were collected from a cross-sectional sample of children in 2014. Of the samples from the longitudinal cohort, none of the 153 collected between 2011 and 2013 but 78.7% (48/61) of those collected in 2014 were positive for IgG responses to the chikungunya virus antigen. In the cross-sectional sample, such responses were detected in 96 (75.6%) of the children and occurred at similar prevalence across all age groups. In the same sample, responses to malarial antigen were only detected in eight children (6.3%) but the prevalence of IgG responses to dengue virus antigens was 60.6% (77/127) overall and increased steadily with age. Spatial analysis indicated that the prevalence of IgG responses to the chikungunya virus and one of the dengue virus-like particles decreased as the sampling site moved away from the city of Léogâne and towards the ocean. Serological evidence indicates that there had been a rapid and intense dissemination of chikungunya virus in Haiti. The multiplex bead

assay appears to be an appropriate serological platform to monitor the seroprevalence of multiple pathogens simultaneously.

Keywords: Dengue, Chikungunya, Malaria, Haiti

26. **Hepatitis B immunization for indigenous adults, Australia**. Andre Louis Wattiaux, J Kevin Yin, Frank Beard, Steve Wesselingh, Benjamin Cowie, James Ward & Kristine Macartney. *Bulletin of the World Health Organization, Vol 94, Issue 11, Nov 2016, Page-826*

To quantify the disparity in incidence of hepatitis B between indigenous and non-indigenous people in Australia, and to estimate the potential impact of a hepatitis B immunization programme targeting non-immune indigenous adults. Using national data on persons with newly acquired hepatitis B disease notified between 2005 and 2012, we estimated incident infection rates and rate ratios comparing indigenous and non-indigenous people, with adjustments for underreporting. The potential impact of a hepatitis B immunization programme targeting non-immune indigenous adults was projected using a Markov chain Monte Carlo simulation model. Of the 54 522 persons with hepatitis B disease notified between 1 January 2005 and 31 December 2012, 1953 infections were newly acquired. Acute hepatitis B infection notification rates were significantly higher for indigenous than non-indigenous Australians. The rates per 100 000 population for all ages were 3.6 (156/4 368 511) and 1.1 (1797/168 449 302) for indigenous and non-indigenous people respectively. The rate ratio of age-standardized notifications was 4.0 (95% confidence interval: 3.7–4.3). If 50% of non-immune indigenous adults (20% of all indigenous adults) were vaccinated over a 10-year programme a projected 527–549 new cases of acute hepatitis B would be prevented. There continues to be significant health inequity between indigenous and non-indigenous Australians in relation to vaccine-preventable hepatitis B disease. An immunization programme targeting indigenous Australian adults could have considerable impact in terms of cases of acute hepatitis B prevented, with a relatively low number needed to vaccinate to prevent each case.

Keywords: Immunization Programme, Hepatitis B, Australia

27. **Impact of Alzheimer's Disease in Nine Asian Countries**. Yang Y.-H.a-c · Meguro K.d · Kim S.-Y.e, f · Shim Y.-S.g · Yu X.h · Chen C.L.-H.i, j · Wang H.h · Lam L.k · Senanarong V.l · Dominguez J.m · Lu P.n, w · Lin Y.-T.o · Hu C.-J.p · Chiu P.-Y.q · Fuh J.-L.r, s · Wang W.-F.t, u · Yu B.-C.v · Li T.h · Wang M.-W.w · Situmeang R.F.V.x · Jang J.-W.y · Zhang J.z · Chan W.-C.aa · Zhou Y.-Y.ab · Lou H.ac · Zhang L.ad · Ye M.ae · Chen X.af. *Gerontology, Vol 62, Issue 4, 2016, Page-425*

Asia will soon have the majority of demented patients in the world. To assess dementia using a uniform data system to update the current status of dementia in Asia. A uniformed data set was administered in Taiwan, China, Hong Kong, Korea, Japan, Philippines, Thailand, Singapore, and Indonesia to gather data with regard to Alzheimer's disease (AD) and its related issues for these countries. In total, 2,370 AD patients and their caregivers were recruited from 2011 to 2014. The demographic characteristics of these patients and the relationships between patients and caregivers were different among individuals in these countries ($p < 0.001$). Of note, the family history for having dementia was 8.2% for females in contrast to 3.2% for males. Our study highlighted the differences in dementia assessment and care in developing versus developed countries. Greater effort with regard to studying dementia, especially in developing countries, is necessary.

Keywords: Alzheimer's disease, Asia, Dementia

28. **Breast Cancer beyond the Age of Mutation**. LaBarge M.A.a · Mora-Blanco E.L.a · Samson S.b · Miyano M.a. *Gerontology, Vol 62, Issue 4, 2016, Page-434*

Age is the greatest risk factor for breast cancer, but the reasons underlying this association are unclear. While there is undeniably a genetic component to all cancers, the accumulation of mutations with age is insufficient to explain the age-dependent increase in breast cancer incidence. In this viewpoint, we propose a multilevel framework to better understand the respective roles played by somatic mutation, microenvironment, and epigenetics making women more susceptible to breast cancer with age. The process of aging is associated with gradual breast

tissue changes that not only corrupt the tumor-suppressive activity of normal tissue but also impose age-specific epigenetic changes that alter gene expression, thus reinforcing cellular phenotypes that are associated with a continuum of age-related tissue microenvironments. The evidence discussed here suggests that while the riddle of whether epigenetics drives microenvironmental changes, or whether changes in the microenvironment alter heritable cellular memory has not been solved, a path has been cleared enabling functional analysis leading to the prediction of key nodes in the network that link the microenvironment with the epigenome. The hypothesis that the accumulation of somatic mutations with age drives the age-related increase in breast cancer incidence, if correct, has a somewhat nihilistic conclusion, namely that cancers will be impossible to avoid. Alternatively, if microenvironment-driven epigenetic changes are the key to explaining susceptibility to age-related breast cancers, then there is hope that primary prevention is possible because epigenomes are relatively malleable.

Keywords: Breast Cancer, Mutations, Women Health

DRUG AND DRUG ABUSE

29. **Modelling the impact of raising tobacco taxes on public health and finance.** Mark Goodchild, Anne-Marie Perucic & Nigar Nargis. *Bulletin of the World Health Organization, Vol 94, Issue 4, Apr 2016, Page-250*

To investigate the potential for tobacco tax to contribute to the 2030 agenda for sustainable development by reducing tobacco use, saving lives and generating tax revenues. A model of the global cigarette market in 2014 – developed using data for 181 countries – was used to quantify the impact of raising cigarette excise in each country by one international dollar (I$) per 20-cigarette pack. All currencies were converted into I$ using purchasing power parity exchange rates. The results were summarized by income group and region.According to our model, the tax increase would lead the mean retail price of cigarettes to increase by 42% – from 3.20 to 4.55 I$ per 20-cigarette pack. The prevalence of daily smoking would fall by 9% – from 14.1% to 12.9% of adults – resulting in 66

million fewer smokers and 15 million fewer smoking-attributable deaths among the adults who were alive in 2014. Cigarette excise revenue would increase by 47% – from 402 billion to 593 billion I$ – giving an extra 190 billion I$s in revenue. This, in turn, could help create the fiscal space required to finance development priorities. For example, if the extra revenue was allocated to health budgets, public expenditure on health could increase by 4% globally.Tobacco taxation can prevent millions of smoking-attributable deaths throughout the world and contribute to achieving the sustainable development goals. There is also potential for tobacco taxation to create the fiscal space needed to finance development, particularly in low- and middle-income countries.

Keywords: Smoking, Tobacco, Tobacco Taxes, Public Health

30. **Patterns of use and perceptions of harm of smokeless tobacco in Navi Mumbai, India and Dhaka, Bangladesh**. Seema Mutti, Jessica L Reid, Prakash C Gupta, Mangesh S Pednekar, Gauri Dhumal, Nigar Nargis, AKM Ghulam Hussain, David Hammond. *Indian Journal of Community Medicine, Vol 41, Issue 4, Oct-Dec 2016, Page 280-287*

Globally, smokeless tobacco use is disproportionately concentrated in low-income and middle-income countries like India and Bangladesh. The current study examined comparative patterns of use and perceptions of harm for different smokeless tobacco products among adults and youth in Navi Mumbai, India, and Dhaka, Bangladesh. Methods: Face-to-face interviews were conducted on tablets with adult (19 years and older) smokeless tobacco users and youth (16–18 years) users and non-users in Navi Mumbai (n = 1002), and Dhaka (n = 1081). Results: A majority (88.9%) of smokeless tobacco users reported daily use. Approximately one-fifth (20.4%) of the sample were mixed-users (used both smoked and smokeless tobacco), of which about half (54.4%) reported that they primarily used smokeless over smoked forms like cigarettes or bidis. The proportion of users planning to quit was higher in India than in Bangladesh (75.7% vs. 49.8%p “ 0.001). Gutkha was the most commonly used smokeless product in India, and pan masala in Bangladesh. Among users in Bangladesh, the most commonly reported reason for using their usual product was the belief that it was “less harmful” than other types. Perceptions of harm also differed with

respect to a respondent's usual product. Bangladeshi respondents reported more negative attitudes toward smokeless tobacco compared to Indian respondents. The findings highlight the high daily use of smokeless tobacco, and the high prevalence of false beliefs about its harms. This set of findings reinforces the need to implement effective tobacco control strategies in low and middle-income countries like India and Bangladesh.

Keywords: Smoking, Tobacco, India, Bangladesh

ELDERLY CARE

31. **Health and socioeconomic status of the elderly people living in Hilly areas of Pakhribas, Kosi Zone, Nepal**. Ankit Amar Gupta, Amrit Kumar Lall, Aditi Das, Anshu Saurav, Abnish Nandan, Deepa Shah, Anand Agrahari, Deepak Kumar Yadav. *Indian Journal of Community Medicine, Vol 41, Issue 4, Oct-Dec, 2016, Page 273-279*

The rising geriatric population is facing significant health and social problems in the developing world that are impacting the quality of their lives. The study describes the general health status and the socioeconomic characteristics of the elderly people of Pakhribas village development committee (VDC) of Eastern Nepal. Materials and Methods: Descriptive cross-sectional study was carried out targeting the people aged 60 years and above in the sample area using a semi-structured questionnaire and convenient sampling to get the required sample size. A total of 189 elderly people who consented were interviewed in May 2010. Result: The major part of the elderly population was in the age group of 60-69 years. Seventy-two percent were illiterate and 75% were still earning with the majority involved in farming. Nine out of ten were living with their families and still made decisions for the household, Eighty-two percent did not feel lonely and 88.4% did not report any misbehavior by the house members. Regarding health, 69% had some diagnosed health issue with 36% suffering from gastritis and 20.4% from chronic lung disease. Using the ICD 10 criteria, depression was found among 18%. The most prevalent geriatric problem was a dental problem as found in 61% even though 87% claimed to brush their teeth regularly. More than half

were suffering from visual difficulty and the proportions suffering from memory and hearing issues were also substantive. Smoking habit was found in 60%, and the relation between smoking and chronic respiratory diseases had a statistical association (P = <0.05). The geriatric cases who were misbehaved with felt depressed or neglected in the family (P = <0.0001). Conclusions: The results of the study show that employment, family support, and pension schemes have a positive impact on the social status of the elderly. Health screening clinics should be established in the community to detect health-related disorders. Elderly populations need health education to emphasize the importance of personal and dental hygiene and to abstain from smoking and alcohol.

Keywords: Elderly Population, Socioeconomic Status, Community Medicine

32. **Assessment of universal health coverage for adults aged 50 years or older with chronic illness in six middle-income countries**. Christine Goeppel, Patricia Frenz, Linus Grabenhenrich, Thomas Keil & Peter Tinnemann. *Bulletin of the World Health Organization, Vol 94, Issue 4, Apr 2016, Page-276*

To assess universal health coverage for adults aged 50 years or older with chronic illness in China, Ghana, India, Mexico, the Russian Federation and South Africa. We obtained data on 16 631 participants aged 50 years or older who had at least one diagnosed chronic condition from the World Health Organization Study on Global Ageing and Adult Health. Access to basic chronic care and financial hardship were assessed and the influence of health insurance and rural or urban residence was determined by logistic regression analysis. The weighted proportion of participants with access to basic chronic care ranged from 20.6% in Mexico to 47.6% in South Africa. Access rates were unequally distributed and disadvantaged poor people, except in South Africa where primary health care is free to all. Rural residence did not affect access. The proportion with catastrophic out-of-pocket expenditure for the last outpatient visit ranged from 14.5% in China to 54.8% in Ghana. Financial hardship was more common among the poor in most countries but affected all income groups. Health insurance generally increased access to care but gave insufficient protection against financial hardship. No country provided access to basic chronic care for more than half of the participants with chronic illness. The poor were less likely to receive care and

more likely to face financial hardship in most countries. However, inequity of access was not fully determined by the level of economic development or insurance coverage. Future health reforms should aim to improve service quality and increase democratic oversight of health care.

Keywords: Universal Health Coverage, Healthcare, Chronic Illness, Global Ageing and Adult Health

FAMILY PLANNING

33. **Capturing Complexities of Relationship-Level Family Planning Trajectories in Malawi.** Hannah E. Furnas. *Studies in Family Planning. Volume 47/Issue 3,September 2016,*

In a transitioning fertility climate, preferences and decisions surrounding family planning are constantly in flux. Malawi provides an ideal case study of family planning complexities as fertility preferences are flexible, the relationship context is unstable, and childbearing begins early. I use intensive longitudinal data from Tsogolo la Thanzi—a research project in Malawi that follows young adults in romantic partnerships through the course of their relationship. I examine two questions: (1) What are the typical patterns of family planning as young adults transition through a relationship? (2) How are family planning trajectories related to individual and relationship-level characteristics? I use sequence analysis to order family planning across time and to contextualize it within each relationship. I generate and cluster the family planning trajectories and find six distinct groups of young adults who engage in family planning in similar ways. I find that family planning is complex, dynamic, and unique to each relationship. I argue that (a) family planning research should use the relationship as the unit of analysis and (b) family planning behaviors and preferences should be sequenced over time for a better understanding of key concepts, such as unmet need.

Keywords: Fertility, Family Planning, Malawi

34. **Counseling Women and Couples on Family Planning: A Randomized Study in Jordan.** Marianne El-Khoury,Rebecca Thornton,Minki Chatterji,Sarah Kamhawi,Phoebe Sloane,Mays Halassa. *Studies in Family Planning .Volume 47/Issue 3/September 2016,Pages 222–238*

This article evaluates the effects of involving men in family planning counseling in Jordan using a randomized experiment. We randomly assigned a sample of 1,247 married women to receive women-only counseling, couples counseling, or no counseling. We measured the effects of each type of counseling on family planning use, knowledge, attitudes, and spousal communication about family planning. Compared to no counseling, couples counseling led to a 54 percent increase in uptake of modern methods. This effect is not significantly different from the 46 percent increase in modern method uptake as a result of women-only counseling. This outcome may be due, in part, to lower rates of compliance with the intervention among those assigned to couples counseling compared to women-only counseling. To realize the possible added benefits of involving men, more tailored approaches may be needed to increase men's participation.

Key Words: Fertility, Family Planning

35. **Child Wanted and When? Fertility Intentions, Wantedness, and Child Survival in Rural Northern Ghana**. Ayaga A. Bawah,Patrick O. Asuming,Cornelius Debpuur, James F. Phillips. *Studies in Family Planning. Volume 47/ Issue 3/September 2016 ,Pages 252–263*

Panel survey data collected in rural northern Ghana asked women about the "wantedness" status of their children. Parous women were asked whether they wanted more children, while those who had never had a child were asked whether they wanted to have children in the future; those who said that they did not want to have any more children in the future were asked whether they wanted to become pregnant when they last became pregnant and, if so, whether they wanted to become pregnant at the time, or would have preferred to be pregnant earlier or later. This article analyzes longitudinal responses to these questions over a 10-year period. Birth and survival histories of subsequently born

children linked to preference data permit investigation of the question: are "wanted" children more likely to survive than "unwanted" children? Hazard models are estimated to determine whether children born to women who indicated that they did not want to have a child at the time they did, or did not want any more children in the future, have a higher risk of mortality relative to children who were reported wanted at the time of pregnancy. Results show no significant differences in adjusted mortality risks between children who were reported to be wanted and those reported to be unwanted.

Key Words: Fertility, Family Planning, Child Survival

36. **The Role of Family Orientations in Shaping the Effect of Fertility on Subjective Well-being: A Propensity Score Matching Approach**. Balbo, N. & Arpino, B. *Demography (2016) Vol 53/Issue 4/August 2016, pp 955–978*

This article investigates whether and how having a child impacts an individual's well-being, while taking into account heterogeneity in family attitudes. People with different family orientations have different values, gender attitudes, preferences toward career and family, and expectations about how childbearing can affect their subjective well-being. These differences impact fertility decisions and the effect of parenthood on an individual's life satisfaction. We define three groups of people based on their family orientations: Traditional, Mixed, and Modern. Applying propensity score matching on longitudinal data (British Household Panel Survey), we create groups of individuals with very similar socioeconomic characteristics and family orientations before childbearing. We then compare those who have one child with those who are childless, and those who have two children with those who have only one child. We show that parents are significantly more satisfied than nonparents, and this effect is stronger among men than among women. For men, we do not find significant differences across family orientations groups in the effect of the birth of the first child on life satisfaction. Among women, only Traditional mothers seem to be more satisfied than their childless counterparts. Women who have a second child are never more satisfied than those who have only one child, regardless of their family orientations. Traditional and Mixed men experience a gain in life

satisfaction when they have a second child, but this effect is not found for Modern men.

Keywords: Life satisfaction, Fertility, Family Orientations, Propensity Score Matching

37. **Measuring Access to Family Planning: Conceptual Frameworks and DHS Data.** Yoonjoung Choi, Madeleine Short Fabic, Jacob Adetunji. *Studies in Family Planning, Vol 47/ Issue 2/ June 2016.*

Expanding access to family planning (FP) is a driving aim of global and national FP efforts. The definition and measurement of access, however, remain nebulous, largely due to complexity. This article aims to bring clarity to the measurement of FP access. First, we synthesize key access elements for measurement by reviewing three well-known frameworks. We then assess the extent to which the Demographic and Health Surveys (DHS)—a widely used data source for FP programs and research—has information to measure these elements. We finally examine barriers to access by element, using the latest DHS data from four countries in sub-Saharan Africa. We discuss opportunities and limitations in the measurement of access, the importance of careful interpretation of data from population-based surveys, and recommendations for collecting and using data to better measure access.

Key Words: Family Planning, Demographic and Health Surveys (DHS)

38. **A lost family-planning regime in eighteenth-century Ceylon**. Fabian F. Drixler & Jan Kok. *Population Studies, Vol 70/ Issue 1/March 2016, Pages 93-114*

Based on Dutch colonial registers (thombos), this paper reconstructs fertility for two districts in Ceylon, 1756–68. It overcomes challenges in data quality by

establishing the outer bounds of plausible estimates in a series of scenarios. Among these, total fertility rates (TFRs) averaged 5.5 in one district, but only 2.7 in the other. These figures exclude the victims of infanticide, a custom noted in European travelogues between about 1660 and 1820. Sex ratios among children differed depending on the number of older siblings, and overall, 27 per cent of girls are missing in one district and 57 per cent in the other. There was little significant variation either in the TFR or the sex ratio by socio-economic status, suggesting that poverty was not a key factor in motivating infanticides. Instead, we argue that at least parts of Ceylon had a forward-looking culture of family planning in the eighteenth century, which was lost in subsequent decades.

Keywords: Ceylon, Sri Lanka, Own-Children Method, Wartime mortality, Pre-Transition Family Planning, Reverse Fertility Transition, Sex Ratio, Infanticide, Total Rearing Rate, Fertility

HEALTHCARE

39. **Inequality and inequity in healthcare utilization in urban Nepal: a cross-sectional observational study**. Eiko Saito1,*, Stuart Gilmour1, Daisuke Yoneoka2, Ghan Shyam Gautam3, Md Mizanur Rahman1, Pradeep Krishna Shrestha4 and Kenji Shibuya1.*Health Policy and Planning.Vol 31, Issue 7. September 2016.Pp. 817-824*

Inequality in access to quality healthcare is a major health policy challenge in many low- and middle-income countries. This study aimed to identify the major sources of inequity in healthcare utilization using a population-based household survey from urban Nepal. A cross-sectional survey was conducted covering 9177 individuals residing in 1997 households in five municipalities of Kathmandu valley between 2011 and 2012. The concentration index was calculated and a decomposition method was used to measure inequality in healthcare utilization, along with a horizontal inequity index (HI) to estimate socioeconomic inequalities in healthcare utilization. Results showed a significant pro-rich distribution of general healthcare utilization in all service providers

(Concentration Index: 0.062, $P < 0.001$; HI: 0.029, $P < 0.05$) and private service providers (Concentration Index: 0.070, $P < 0.001$; HI: 0.030, $P < 0.05$). The pro-rich distribution of probability in general healthcare utilization was attributable to inequalities in the level of household economic status (percentage contribution: 67.8%) and in the self-reported prevalence of non-communicable diseases such as hypertension (36.7%) and diabetes (14.4%). Despite the provision of free services by public healthcare providers, our analysis found no evidence of the poor making more use of public health services (Concentration Index: 0.041, $P = 0.094$). Interventions to reduce the household economic burden of major illnesses, coupled with improvement in the management of public health facilities, warrant further attention by policy-makers.

Key words: Health economics, Health inequalities, Health care utilization

40. **Comprehensive index for community health assessment of typical district administrative units in Maharashtra State, India**. Prakash Prabhakarrao Doke. *Indian Journal of Community Medicine, Vol 41, Issue 4, Oct-Dec 2016, Page 288-291*

Health administrators require status of health of different administrative units under them. Use of large number of indicators may create confusion and uncertainty about health status. Availability of a comprehensive index is certainly useful. To evolve one comprehensive health index for a district as unit and measure district wise disparity. Ten indicators from categories of health outcomes, health system, determinants of health, and utilization of services were considered. Data for districts in Maharashtra State were obtained from different sources.For each indicator the best performing district was given score of 100 and other districts were given marks proportionately.Results: The comprehensive index for the state was 0.52. The district scoring lowest value of 0.36 was a tribal district and scoring highest value of 0.66 was a nontribal district. Computing such index of districts for monitoring and allocation of resources may be useful managerial tool.

Keywords: Community Health, Comprehensive Health Index, Health System

41. **Healthcare providers on the frontlines: a qualitative investigation of the social and emotional impact of delivering health services during Sierra Leone's Ebola epidemic.** Shannon A. McMahon1,2, Lara S. Ho3,*, Hannah Brown4, Laura Miller5, Rashid Ansumana6,7,8 and Caitlin E. Kennedy . *Health Policy and Planning Volume 31, Issue 9, November 2016, Pp. 1232-1239.*

Although research on the epidemiology and ecology of Ebola has expanded since the 2014–15 outbreak in West Africa, less attention has been paid to the mental health implications and the psychosocial context of the disease for providers working in primary health facilities (rather than Ebola-specific treatment units). This study draws on 54 qualitative interviews with 35 providers working in eight peripheral health units of Sierra Leone's Bo and Kenema Districts. Data collection started near the height of the outbreak in December 2014 and lasted 1 month. Providers recounted changes in their professional, personal and social lives as they became de facto first responders in the outbreak. A theme articulated across interviews was Ebola's destruction of social connectedness and sense of trust within and across health facilities, communities and families. Providers described feeling lonely, ostracized, unloved, afraid, saddened and no longer respected. They also discussed restrictions on behaviors that enhance coping including attending burials and engaging in physical touch (hugging, handshaking, sitting near, or eating with colleagues, patients and family members). Providers described infection prevention measures as necessary but divisive because screening booths and protective equipment inhibited bonding or 'suffering with' patients. To mitigate psychiatric morbidities and maladaptive coping mechanisms—and to prevent the spread of Ebola—researchers and program planners must consider the psychosocial context of this disease and mechanisms to enhance psychological first aid to all health providers, including those in peripheral health settings.

Key words: Ebola, Frontline Health Workers, Mental Health and Psychosocial Support, Qualitative Research, Sierra Leone

MATERNAL HEALTH

42. **Assessment and comparison of pregnancy outcome among anaemic and non anaemic primigravida mothers**. Rohini Sehgal, Alka Kriplani, Perumal Vanamail, Leema Maiti, Shobha Kandpal, Neeta Kumar. *Indian Journal of Public Health.Vol 60/Issue 3/Jul-Sept. 2016/p. 188*

Primigravidas (PGs) are high-risk women and anemia in pregnancy is one of the commonest causes of maternal morbidity and mortality. The study was conducted to assess impact of anemia on course and outcome of pregnancy in anemic (Hemoglobin 8-10.9 gm%) and nonanemic PGs. Methods: This prospective longitudinal study was conducted in All India Institute of Medical Sciences, New Delhi. PGs 20-30 years age, gestation age 16-18 weeks, hemoglobin >8 gm%, live singleton pregnancy, and no other medical illness were recruited after informed consent. The women were Grouped 1 and 2 if hemoglobin was ≥11 gm% and 8-10.9 gm%, respectively. Complete hemogram done at enrollment, 28-30 weeks of pregnancy and 6 weeks postdelivery. Obstetric outcome and presence of anemia postdelivery were compared between groups using Chi-square test and Fisher's exact test. Results: A total of 377 PGs were enrolled and obstetric outcomes studied in 179 (Group 1) and 149 (Group 2) excluding women who did not complete study. There was no statistically significant difference in baseline characteristics, antenatal complications, gestational age, mode of delivery, and neonatal outcome. At 28-30 weeks of gestation, in spite of iron supplementation higher percentage (64.4%) ($P < 0.05$) of anemic patients remained anemic. At 6 weeks postdelivery, 15.6% and 24.2% were anemic in Group 1 and 2, respectively ($P > 0.05$). The adverse postpartum events (7.6%) were seen more in anemic compared to nonanemic pregnant women ($P < 0.05$). Conclusions: Cautious approach required in postpartum period of anemic women though antenatal period is similar as nonanemic pregnant women.

Key Words: Pregnancy, Maternal Mortality, Primigravidas

43. **Comparison of satisfaction with maternal health-care services using different health insurance schemes in aceh province, Indonesia**. Zurnila Marli Kesuma, Virasakdi Chongsuvivatwong. *Indian Journal of Public Health. Vol 60/Issue 3/Jul-Sept. 2016,p. 195*

An insurance scheme called Jaminan Kesehatan Aceh (JKA) was established by the local government to achieve universal coverage for Aceh's population who were not registered under the national insurance scheme for the poor (Jamkesmas). This study was conducted to compare women's satisfaction before and after the implementation of JKA and across different insurance schemes. Methods: The study was conducted from July 2011 to July 2012 on satisfaction of maternal health services among 1197, 15-49 years aged old women living in eight districts of Aceh Province, Indonesia, and a cluster sampling technique was applied. Analysis of variance was used to assess the effects of different insurance schemes, period, and type of services on satisfaction with maternal health services. Results: Women were mostly satisfied with birth delivery services (mean score: 2.69) followed by postnatal care (mean score: 2.62) and antenatal care services (mean score: 2.37). Conclusion: Over the changing period, the average level of satisfaction in the JKA group increased significantly.

Key Words: Maternal Health, Health Insurance Scheme, Public Health

44. **Quality of life and sociodemographic factors associated with poor quality of life in elderly women in Thiruvananthapuram, Kerala**. RS Rajasi, Thomas Mathew, Zinia T Nujum, TS Anish, Reshmi Ramachandran, Tony Lawrence. . *Indian Journal of Public Health. Vol 60/Issue 3/Jul-Sept. 2016,p. 210*

India is going through a phase of demographic transition leading to population aging and feminization of aging resulting in increased proportion of elderly women than men. Problems faced by the elderly women are more critical than men due to family and social conditions prevailing in India. The study made an attempt to assess the quality of life (QOL) using the World Health Organization QOL (WHOQOL-BREF) scale and sociodemographic factors affecting QOL of elderly women residing in a community setting in South Kerala. A community-based, cross-sectional study to assess the QOL of elderly women using

WHOQOL-BREF questionnaire. Data were collected from 160 elderly women. Results: 2.5% (95% confidence interval [CI]: 0.07-4.84) of the study participants were having "very good" QOL. 38.8% (95% CI: 31.2-46.4) had "good," 43.1% (95% CI: 35.4-50.8) had "poor," and 15.6% (95% CI: 9.98-21.22) had "very poor" QOL, respectively. QOL was least in the psychological domain followed by physical and health-related, social, and environmental domains. Logistic regression revealed age above 70 years (adjusted odds ratio [OR] - 11.3), nonpossession of property (adjusted OR - 8.99), neglecting attitude by family (adjusted OR - 6.9), and absence of visit by friends and relatives (adjusted OR - 9.9) as risk factors, whereas residing in the urban area as a protective factor (adjusted OR - 0.1) for poor QOL. It is possible to improve the QOL of elderly women by providing financial security, ensuring care, and by enhancing social relationships of elderly women.

Key Words: Quality Of Life, Women Health

45. **Is the use of maternal healthcare among prospective mothers higher in households that have experienced maternal death? Evidence from India**.Rajesh Kumar Rai1,*, Prashant Kumar Singh2 and Chandan Kumar. *Health Policy and Planning Volume 31/ Issue 7/September 2016.Pp. 844-852.*

Essential maternity care services include providing antenatal, delivery and postnatal care in a continuum to avert excess maternal deaths. This study assesses whether there is any significant difference in the utilization of maternal healthcare services between women from households that experienced any maternal death and women from households that did not experience any maternal death. Data from India’s District Level Households and Facility Survey, 2007–08 were used. A sample of 321 women (unweighted) aged 15–49 years residing in households that had experienced maternal death, and 217 737 women (unweighted) of the same age group living in households that did not experience any maternal death were found eligible for the analysis. Results indicate that women belonging to households that experienced maternal deaths were less likely to opt for full antenatal care [odds ratio (OR): 0.56; 95% confidence interval (CI): 0.35–0.88] and postnatal care (OR: 0.82; 95% CI: 0.61–0.91) compared with women from households that did not experience any maternal death.

Conversely, women belonging to households experiencing maternal deaths were more likely to utilize skilled birth attendants (OR: 1.31; 95% CI: 1.03–1.73) for their last delivery. This study hopes to draw the attention of program and policy makers to improve the reach of antenatal and postnatal care services, which are considered to be a supply side barrier compared with institutional delivery even by households that have reported maternal death.

Key words: Maternal health, Maternal Mortality, Health Policy

46. **The impact of delays on maternal and neonatal outcomes in Ugandan public health facilities: the role of absenteeism.** Louise Ackers1,*, Elena Ioannou2 and James Ackers-Johnson. *Health Policy and Planning Volume 31, Issue 9, November 2016, Pp. 1152-1161.*

Maternal mortality in low- and middle-income countries continues to remain high. The Ugandan Ministry of Health's Strategic Plan suggests that little, if any, progress has been made in Uganda in terms of improvements in Maternal Health [Millennium Development Goal (MDG) 5] and, more specifically, in reducing maternal mortality. Furthermore, the UNDP report on the MDGs describes Uganda's progress as 'stagnant'. The importance of understanding the impact of delays on maternal and neonatal outcomes in low resource settings has been established for some time. Indeed, the '3-delays' model has exposed the need for holistic multi-disciplinary approaches focused on systems change as much as clinical input. The model exposes the contribution of social factors shaping individual agency and care-seeking behaviour. It also identifies complex access issues which, when combined with the lack of timely and adequate care at referral facilities, contributes to extensive and damaging delays. It would be hard to find a piece of research on this topic that does not reference human resource factors or 'staff shortages' as a key component of this 'puzzle'. Having said that, it is rare indeed to see these human resource factors explored in any detail. In the absence of detailed critique (implicit) 'common sense' presumptions prevail: namely that the economic conditions at national level lead to inadequacies in the supply of suitably qualified health professionals exacerbated by losses to international emigration. Eight years' experience of action-research interventions in Uganda combining a range of methods has lead us to a rather stark conclusion:

the single most important factor contributing to delays and associated adverse outcomes for mothers and babies in Uganda is the failure of doctors to be present at work during contracted hours. Failure to acknowledge and respond to this sensitive problem will ultimately undermine all other interventions including professional voluntarism which relies on local 'co-presence' to be effective. Important steps forward could be achieved within the current resource framework, if the political will existed. International NGOs have exacerbated this problem encouraging forms of internal 'brain drain' particularly among doctors. Arguably the system as it is rewards doctors for non-compliance resulting in massive resource inefficiencies.

Key words: Absenteeism, Human Resource Management, Low Resource Setting Maternal delays, Maternal Health, Uganda

47. **Cross-Sectional Study of Postpartum Changes in Bone Status in Indian Mothers**. Neha Kajale, Anuradha Khadilkar, Shashi Chiplonkar, Zulf Mughal, Vaman Khadilkar, Nina Mansukhani. *The Journal of Obstetrics and Gynecology of India, Volume 66, Issue 4, August 2016, pp 218–225*

Bone turnover is high during lactation. However, studies on bone status of Indian urban mothers are scarce. Hence, the objective was to conduct a cross-sectional study on the lactation-related changes in bone health status of Indian mothers postpartum using Dual X-ray Absorptiometry (DXA) at 3 time points: within a week of delivery, at 1- and 3-years postpartum. We also explored the association of dietary calcium intake, physical activity, serum vitamin D status, and dietary traditional food supplements (Dietary Food supplements) with bone health.A cross-sectional study was conducted; 300 full-term, healthy primiparous women (28.6 ± 3.4 year) were randomly selected and categorized into 3 groups: 128 mothers within 7 days of delivery (Group A), 88 with 1-year-old children (B), and 84 with 3-year-old children (C). Anthropometry, lactation history, physical activity, diet, biochemical tests (vitamin D, parathyroid hormone), body composition, areal bone mineral density (a-BMD) at total body (TB), AP spine (APS), and dual neck femur (DF) were assessed by DXA (GE-Lunar DPX).Significantly higher APS-BMD (mean ± SD) was observed in Group C (1.107 ± 0.098 g/cm2) than that in A (1.045 ± 0.131 g/cm2) ($p < 0.05$). When

adjusted for breastfeeding practices, mean (±standard error) APS-BMD was lowest in women in Group A (1.024 ± 0.013 g/cm2), but was higher at 1-year (1.079 ± 0.02 g/cm2) and at 3-years postpartum (1.111 ± 0.019 g/cm2), though differences were significant only between groups A and C ($p < 0.05$). Most mothers from all 3 groups consumed inadequate amount of nutrients except dietary fat and showed low physical activity. Multiple regression analysis indicated that dietary calcium, moderate physical activity, serum vitamin D, and consumption of dietary food supplements were not significant predictors of APS-BMD ($p > 0.1$).Prevalence of nutrient and vitamin D deficiencies, low physical activity, and poor sunlight exposure were major concerns in Indian lactating mothers; improvement in bone mass at APS was observed at 3-years which was most likely due to physiologic changes.

Keywords: Lactation, Postpartum, Bone health, Body Composition, Indian Mothers

48. **A Study on level of satisfaction among beneficiaries under Janani Shishu Suraksha Karyakaram (JSSK) at regional hospital Nahan (H.P.)**. M.B. Gupta, A.K. Gupta and S.R. Mazta. *International Journal of Social Science, Vol.5, Issue 1, March 2016, Page 55*

JSSK is a Central Government Sponsored Karyakaram implemented in Himachal Pradesh. It has been started to provide better health services to pregnant mothers and children up to one year of age, to reduce maternal and infant mortality rate. However, it has been observed that about one-third of beneficiaries were not aware about this Karyakaram. In public health institutions (Hospitals) buildings were quite old; require repair of ante natal, postpartum and children wards including toilets. It has been found that the satisfaction level is better in relation to supporting services of the hospital specifically with the availability of transport i.e. National Ambulance Services (108), especially among the attendants of infants. However, there is enough scope to improve services, like housekeeping, drinking water, waiting and resting area for the attendants.

PUBLIC HEALTH

49. **Taking stocks of antimalarial activities: A study on knowledge and skill of health personnel at primary care setting in the state of West Bengal, India**. AB Biswas, Sarmila Mallik, Dipta Kanti Mukhopadhyay, Aditya Prasad Sarkar, Susmita Nayak, Asit Kumar Biswas. *Indian Journal of Public Health.Vol 60/Issue 3/Jul-Sept. 2016,p. 181*

Early diagnosis and effective treatment are the key areas in malaria control in India. The present study was carried out to assess the knowledge and skill of health personnel at primary care level and the logistic support related to the program at subcenter (SC) level. A cross-sectional, descriptive study was conducted among medical and paramedical personnel working at primary health-care institutions in two districts of West Bengal. Knowledge was assessed using a structured questionnaire while diagnostic skill and logistic support were assessed with structured checklists. Clinical skill was assessed with case vignettes. Results: Requisite knowledge on diagnostic procedure was found in two-third to three-fourth of health personnel while only 26.7% and 12.4%, respectively, knew the correct treatment of Plasmodium vivax and Plasmodium falciparum malaria. Median standardized score for knowledge was 50.0 while the scores for skill of preparing blood slide and for rapid diagnostic test were 70.0 and 57.1, respectively. Education and work experience were related to diagnostic skill but had little effect on knowledge. In clinical skill, medical personnel scored 50% or more in investigation and treatment aspects only. In another case vignette, health workers excelled over medical officers and other staff in all axes other than history taking and clinical examination although their performance was also suboptimal. Formal training on malaria did not show any bearing on median knowledge and skill score. Supply of diagnostics and drugs was insufficient in majority of SCs. Conclusion: Renewed efforts are needed to create competent workforce and ensure adequate logistic supply.

Key Words: Malaria, Public Health

50. Challenges in new vaccine introduction in a national program in India. Dipika Sur. *Indian Journal of Public Health.Vol 60/Issue 3/Jul-Sept. 2016,p. 171*

Vaccines have a long history dating back to the days of Edward Jenner (1749-1823) and Louis Pasteur (1822-1895). Vaccines can be viewed from a public health perspective as well as scientific perspective. Public health experts would focus epidemiological relevance, immunological competency, and technological feasibility. Scientists however will look for a good immune response as well as long-lived immunity, stability considerations, and safety issues such as danger of reversion to virulence. In India, the vaccine coverage is far from satisfactory, national average for full immunization being only 65%. Presently, nine vaccines are being used in the Universal Immunization Program. However, some more have started in pilot, and some are still in the pipeline. Although administrative, logistic and operational challenges have to be faced when introducing a new vaccine into the public health system; these are solvable and should not be a hindrance to the introduction. A real-life example of nonintroduction of a lifesaving vaccine is - the oral cholera vaccine. This vaccine which is manufactured and licensed in India has been the World Health Organization (WHO) prequalified, and it is being used worldwide. Although the disease is a major threat, the disease has its stigma and has led to its low reporting even from cholera endemic areas of the country. Thus, in spite of the WHO recommendations, the vaccine is not being introduced into the national program which would take it to people who need it the most only because of apparent lack of sufficient disease burden data and political commitment.

Key Words: Universal Immunization Program, Public Health