

Interpretation: Many chemicals found in analyzed water samples are known neurotoxins, teratogens, endocrine disruptors, and carcinogens. Of the 35 chemicals found: 4-nonyphenol and P-octylphenol are endocrine disruptors that have been shown to upregulate oncogenes that are linked to breast and ovarian cancer; several phthalates like di-n-octylphthalate may cause testicular atrophy and infertility; and N,N-diethylthiourea has been linked to follicular thyroid, hepatocellular, and lung adenocarcinomas. Future work will include using known standards to quantify exposure and determine the extent of potential health effects.

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Abstract #: 1.007_PCF

Investigating interventions for increasing uptake of prevention of mother-to-child HIV transmission services: A systematic review

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Background: Mother-to-child HIV transmission, which can occur during pregnancy, labor, or breastfeeding, is responsible for 90% of HIV infections in children under the age of 15 worldwide. Despite significant advancements in low-cost, effective clinical interventions for prevention of mother-to-child transmission (PMTCT), uptake of these services is limited in low income and lower-middle income countries with high HIV burden. New Incentives, a non-profit organization in Nigeria, has introduced a conditional cash transfer program to reduce demand-side barriers of PMTCT utilization. We conducted a literature review to explore how the New Incentives conditional cash transfer program compares to other interventions addressing use of PMTCT services by HIV-positive pregnant women.

Methods: We performed a systematic analysis of over 800 quantitative and qualitative studies of interventions and social and behavioral determinants relevant to demand and supply of PMTCT. We subsequently compared these interventions to the conditional cash transfers included in the New Incentives program for increasing utilization of PMTCT services.

Findings: Quality improvement and provider training, in addition to use of peer mentors and the traditional health sector, including traditional birth attendants, has been shown to eliminate supply-side barriers of PMTCT. Integration of antenatal care with HIV services and male involvement in antenatal care significantly reduce demand-side barriers to PMTCT uptake. New Incentives is the first program to use conditional cash transfers to increase demand for PMTCT services in low-income countries.

Interpretation: Although little evidence exists for the efficacy of conditional cash transfers, they present a novel, promising tool for reducing demand-side barriers of PMTCT use. Furthermore, more interventions addressing transportation, food insecurity, and other demand-side barriers should be investigated. As PMTCT services become more available globally, this data should be a call to policymakers to address barriers that inhibit uptake of these services.

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A novel framework for evaluating the private profitability of investments in employee health in low-and middle-income countries

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Background: Health care sectors in most low- and middle-income countries (LMICs) are grossly underfunded. Novel drivers for investment in health are needed. We aimed to create a new driver for investments in health in LMICs by developing a novel framework for evaluating the productivity gain of health investments in a company setting and the resulting private profitability hereof.

Methods: A case factory setting in Northern Vietnam with 1700 adult textile workers was used for the development of our framework. 87% (N = 1305) were female and 13% were male (N = 195). All workers at the factory were included. A literature review of the most common diseases for this demographic group in this specific region was conducted to identify potential areas of impactful and sustainable health investment.

Findings: Iron-deficiency anemia was identified as a potentially relevant and sustainable area of intervention. The discounted effect of supplementing worker lunch meals with iron-fortified soy- and fish-sauce, corrected for delay of effect and worker exchange rate, was conservatively estimated to be at least 0.4% per year with a benefit-cost-ratio of the intervention of at least 2.0. These numbers were presented to the factory administration that decided to implement the suggested intervention. This further led to an unforeseen increased focus on worker nutrition at the factory, with the introduction of new nutritious food items in the factory kitchen and the establishment of teaching sessions on healthy nutrition for all employees.

Interpretation: The investment in worker nutrition at the factory illustrates the potential of this framework to act as a driver for private investment in worker health. It provides a unique contribution to the available literature in that it controls for the time-delay of effect and limited length of employment, and thus ignores productivity gains that do not directly benefit the company. While the applicability of our framework is limited to diseases where productivity effects have been studied the implementation of such economic frameworks for increasing private investments in employee health may prove an important component of health care financing in LMICs, in the absence of sufficient funding from other sources.

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A One-Health approach to prioritizing zoonotic diseases in Sub-Saharan Africa, 2015

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Program/Project Purpose: Zoonotic diseases threaten human and animal health with wide-reaching economic impact. These diseases are frequently neglected, concurrent with a lack of

communication between human and animal health agencies. To facilitate interagency collaboration in identifying zoonotic diseases of concern, the One Health Office within the Centers for Disease Control and Prevention (CDC) designed the One Health Zoonotic Disease Prioritization Tool (OHZDPT). Two countries in Sub-Saharan Africa were the first to implement the OHZDPT. Step 1 of the process included an extensive literature review to evaluate existing country-specific data on zoonotic diseases.

Structure/Method/Design: CDC identified 42 zoonotic diseases for inclusion in the OHZDPT, including bacterial ($n = 17$), parasitic ($n = 7$), and viral ($n = 18$) pathogens. Data regarding human disease severity (e.g., morbidity, mortality, and disability-adjusted-life-years), economic burden in animals, and prevention/control strategy (e.g., vaccine availability) were compiled. NCBI PubMed was used to search for data using the country name AND disease name AND one of the following terms: “morbidity,” “mortality,” “DALYs,” “cases,” “animals,” “vaccine,” and “wildlife.” References from retrieved articles were reviewed to identify additional relevant publications. If no relevant articles were available, the search was repeated for data from neighboring countries in Sub-Saharan Africa to provide a regional estimate. Data publicly available on the World Health Organization and UN Food and Agriculture Organization websites were also included, as were data from the Institute for Health Metrics and Evaluation’s 2010 Global Burden of Disease (GBD) Survey.

Outcome & Evaluation: Using this strategy, approximately 100 articles were retrieved for each country; the data on disease burden were highly variable. The 2010 GBD Survey and WHO website were the most valuable sources for country-level human disease estimates, but provided no data for animals. Animal health data and economic burden estimates were not available for the majority of diseases.

Going Forward: The literature search highlights the lack of scientific data available and the need for resource investment in zoonotic disease research. Implementing the OHZDPT in both countries will provide a framework for enhanced surveillance, diagnosis, and control for zoonoses.

Funding: OHZDPT workshops were supported by the Defense Threat Reduction Agency and Global Health Security Agenda funds.

Abstract #: 1.010_PCF

Effect of a home-based intervention by trained community health nurses on immunization rates, exclusive breastfeeding, growth parameters, and hospitalizations for respiratory and diarrheal illness – a pilot randomized controlled trial

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Background: Healthy Children Brighter Futures (HCBF) is a pilot program in Krishnagiri District, India that provides home health visits to infants <12 months of age. Community Health Nurses

(CHNs) make monthly visits to the homes of these infants to assess breastfeeding, immunization status, growth developmental milestones, and to provide anticipatory guidance. CHNs also identify acute health care needs and refer to tertiary care as appropriate.

Objective: We assessed the efficacy of this program based on four outcomes through the first two months of life – rates of exclusive breast feeding (EBF), immunization uptake of government-provided vaccines, incidence of hospital admissions and physician visits, and growth parameters.

Methods: This pilot study was conducted as a randomized controlled trial. Three panchayats were randomized to a ‘control’ group and three were randomized to an ‘intervention’ group. Each group had 25 mother-infant dyads. The ‘intervention’ group received visits at one week, one month, and two months of life and nurses provided counseling services during these visits. The ‘control’ group received a baseline visit at one week and a final visit at two months and received no counseling services.

Results: Rates of EBF were 100% in both groups throughout the course of the study. No differences were found in rates of CIC (complete immunization coverage) at baseline or at the follow up visits. Higher rates of physician visits were found in the control group compared to intervention group at both baseline (13% vs. 0 $p = .48$) and study endpoint (33% vs 0, $p = .04$). Lastly, although rates did not differ across groups in any anthropometric measure at baseline or study endpoint using the 5th percentile as a threshold, more infants in both groups measured in the normal range at follow up compared to baseline.

Conclusions: Despite the small sample size and short duration of the study, counseling services showed benefits. Important findings were that lower rates of physician visits were observed in the intervention group compared to the control group. While the intervention group, at baseline, had more underweight infants compared to the control group, at the two-month follow-up visit, both groups had similar rates of underweight infants.

Abstract #: 1.011_PCF

Managing major psychiatric illnesses through tele-consultation in a secondary care setting in rural India

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Program / Project Purpose: Specialist care for mental illnesses in rural India is a neglected issue. We have developed a programme based on Tele-consultation with a psychiatrist to address this issue in a rural hospital. Operational since April 2012, this program has aimed to provide diagnosis and appropriate treatment for psychiatric patients via remote consultation and to provide continued specialist care at affordable rates with adequate patient compliance.

Structure/Method/Design: Patients screened on an outpatient department (OPD) basis were called for weekly tele-psychiatry clinic. With high speed internet, audio-visual consultations were provided by a remote consultant psychiatrist with simultaneous Electronic Medical Record usage. A Resident doctor or paramedic