

EDITORS' NOTE

We thank all of you for your overwhelming response to our first issue of the Abstract Digest and are pleased to share with you this second issue. In the last two months, we have identified several exciting publications investigating global and national trends in child growth and mortality and impacts of micronutrient supplementation on overcoming micronutrient deficiencies and mortality. The findings from these global studies suggest the importance of maternal height on children's linear growth at multiple stages of development and heightened risk for mortality among children with multiple anthropometric deficits. While one India-based efficacy study lends support to directly supervised iron and folic supplementation to improve hemoglobin status among mild to moderately anaemic pre-school children, another study features its decade long programme experience for the control of anemia among adolescent girls. Finally, new evidence from the DEVTA trial suggests only a modest effect of Vitamin A supplementation on mortality and little effect of population-level deworming among pre-school children on mortality.

We hope you find this compilation of different types of studies informative and interesting, and look forward to any comments you might have!

Warm regards,

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Dr. Suneetha Kadiyala, Research Fellow, IFPRI

POSHAN Co-Directors

About the POSHAN Abstract Digest:

In each issue, the POSHAN Abstract Digest brings to your fingertips some of the new and noteworthy studies on maternal and child nutrition. It focuses on India-specific studies and also brings to you other relevant global or regional literature with broader implications for maternal and child nutrition. The Abstract Digest is based on literature searches to identify selected studies that we think are most relevant to nutrition issues in India and to Indian programs and policies. We share with you a collection of abstracts from articles published in peer-reviewed journals; as well as selected non peer-reviewed articles by researchers in reputed academic and/or research institutions and which demonstrated rigor in their research objectives, methodology, and analysis. The abstracts in this document are reproduced in their original form from their source, and without editorial commentary.

About POSHAN

POSHAN (*Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India*) is a 4-year initiative which aims to build evidence on effective actions for nutrition and support the use of evidence in decision-making. It is supported by the Bill & Melinda Gates Foundation and led by IFPRI in India.



The Institute for Development Studies, Sussex is a POSHAN partner who bring global expertise in mobilizing knowledge for development.



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HEALTH
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The Health Communication Division at the Public Health Foundation of India is a POSHAN partner who brings national level communications and advocacy experience in India.

PEER-REVIEWED LITERATURE: INDIVIDUAL ARTICLES/BRIEFS

Maternal height and child growth patterns

Addo, OY, Stein, AD, Fall, CH, Gignate, DP, Guntupalli, AM, Horta, BL, Kuzawa, CW, Lee, N, Norris, SA, Prabhakaran, P, Sachdev, HS, Martorell, R. *The Journal of Pediatrics*, March, 2013. doi: <http://dx.doi.org/10.1016/j.jpeds.2013.02.002>

Objective: To examine associations between maternal height and child growth during 4 developmental periods: intrauterine, birth to age 2 years, age 2 years to mid-childhood (MC), and MC to adulthood. **Study design:** Pooled analysis of maternal height and offspring growth using 7630 mother–child pairs from 5 birth cohorts (Brazil, Guatemala, India, the Philippines, and South Africa). We used conditional height measures that control for collinearity in height across periods. We estimated associations between maternal height and offspring growth using multivariate regression models adjusted for household income, child sex, birth order, and study site. **Results:** Maternal height was associated with birth weight and with both height and conditional height at each age examined. The strongest associations with conditional heights were for adulthood and 2 years of age. A 1-cm increase in maternal height predicted a 0.024 (95% CI: 0.021-0.028) SD increase in offspring birth weight, a 0.037 (95% CI: 0.033-0.040) SD increase in conditional height at 2 years, a 0.025 (95% CI: 0.021-0.029) SD increase in conditional height in MC, and a 0.044 (95% CI: 0.040-0.048) SD increase in conditional height in adulthood. Short mothers (<150.1 cm) were more likely to have a child who was stunted at 2 years (prevalence ratio = 3.20 (95% CI: 2.80-3.60) and as an adult (prevalence ratio = 4.74, (95% CI: 4.13-5.44). There was no evidence of heterogeneity by site or sex. **Conclusion:** Maternal height influences offspring linear growth over the growing period. These influences likely include genetic and non-genetic factors, including nutrition-related intergenerational influences on growth that prevent the attainment of genetic height potential in low- and middle-income countries.

Global patterns in overweight among children and mothers in less developed countries

Hook, JV, Altman, CE, Balistreri, KS. *Public Health Nutrition*, 16(4), pages 573-581, 2012. doi: <http://dx.doi.org/10.1017/S136898001200116410.1177/0972063412468976>

Objective: Past research has identified increases in national income and urbanization as key drivers of the global obesity epidemic. That work further identified educational attainment and urban residence as important moderators of the effects of national income. However, such work has tended to assume that children and adults respond in the same way to these factors. In the present paper, we evaluate how the socio-economic and country-level factors associated with obesity differ between children and their mothers. **Design:** We modelled the associations between maternal education, country-level income and urban residence with mother's and children's weight status. **Setting:** We analysed ninety-five nationally representative health and nutrition surveys conducted between 1990 and 2008 from thirty-three less developed countries. **Subjects:** Our sample included children aged 2–4 years (n 253 442) and their mothers (n 228 655). **Results:** Consistent with prior research, we found that mothers' risk of overweight was positively associated with economic development, urban residence and maternal education. Additionally, economic development was associated with steeper increases in mothers' risk of overweight among those with low (v. high) levels of education and among those living in rural (v. urban) areas. However, these associations were different for children. Child overweight was not associated with maternal education and urban residence, and negatively associated with national income. **Conclusions:** We speculate that the distinctive patterns for children may arise from conditions in low- and middle-income developing countries that increase the risk of child underweight and poor nutrition. [Data source: Majority of data from Demographic and Health Surveys supplemented by Mexican family Life Survey and China Health and Nutrition Survey]

The effect of multiple anthropometric deficits on child mortality: meta-analysis of individual data in 10 prospective studies from developing countries

McDonald, CM, Olofin, I, Flaxman, S, Fawzi, WW, Spiegelman, D, Caulfield, LE, Black, RE, Ezzati, M, Danaei, G for the Nutrition Impact Model Study. *American Journal of Clinical Nutrition*, 2013. doi: 10.3945/ajcn.112.047639 <http://ajcn.nutrition.org/content/early/2013/02/18/ajcn.112.047639.short>

The objective of this study was to quantify the association between combinations of stunting, wasting, and underweight and mortality among children <5 y of age. Data from 10 cohort studies or randomized trials in low- and middle-income countries in Africa, Asia, and Latin America with 53,767 participants and 1306 deaths was analysed. Height-for-age, weight-for-height, and weight-for-age were calculated using the 2006 WHO growth standards, and children were classi-

fied into 7 mutually exclusive combinations: no deficits; stunted only; wasted only; underweight only; stunted and underweight but not wasted; wasted and underweight but not stunted; and stunted, wasted, and underweight (deficit defined as < -2 z scores). We calculated study-specific mortality HRs using Cox proportional hazards models and used a random-effects model to pool HRs across studies. The risk of all-cause mortality was elevated among children with 1, 2, and 3 anthropometric deficits. In comparison with children with no deficits, the mortality HRs were 3.4 (95% CI: 2.6, 4.3) among children who were stunted and underweight, but not wasted; 4.7 (95% CI: 3.1, 7.1) in those who were wasted and underweight, but not stunted, and 12.3 (95% CI: 7.7, 19.6) in those who were stunted, wasted, and underweight. Conclusion: Children with multiple deficits are at a heightened risk of mortality and may benefit most from nutrition and other child survival interventions.

Does child undernutrition persist despite poverty reduction in developing countries? Quantile regression results

Block, SA, Masters, WA, Bhagowalia, P. *The Journal of Development Studies*, 48(12): 1699-1715, 2012.

doi:10.1080/00220388.2012.700399

<http://www.tandfonline.com/doi/pdf/10.1080/00220388.2012.700399>

The eradication of child under nutrition and extreme poverty are important objectives for most societies. Countries with higher national incomes usually improve in both dimensions, but not always at the same rate. Using quantile regression, we show that poverty rates tend to decline with increased income at a roughly constant elasticity. In contrast, while the prevalence of child wasting declines at that same elasticity where it is most widespread, the elasticity becomes smaller as wasting becomes less prevalent. This finding suggests a greater need for increasingly targeted interventions to achieve a given reduction in undernutrition as its prevalence declines.

Trends in child mortality in India

Behl, AS. *Indian Pediatrics*, 50, pages 143-147, January 2013

<http://www.indianpediatrics.net/jan2013/143.pdf>

To assess India's recent trends in child mortality rates and disparities and identify ways to reduce child mortality and wealth-related health disparities, the present paper analyzed three years of data from India's National Family Health Survey related to child mortality. Nationally, declines in average child mortality were statistically significant, but declines in inequality were not. Urban areas had lower child mortality rates than rural areas but higher inequalities. Interstate differences in child mortality rates were significant, with rates in the highest-mortality states four to six times higher than in the lowest-mortality states. However, child mortality in most states declined.

Social sector expenditure and child mortality in India: A state-level analysis from 1997 to 2009

Makela, SM, Dandona, R, Dilip, TR, Dandona, L. *PLoS ONE*, 8(2), February 2013. e56285.

doi:10.1371/journal.pone.0056285

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0056285>

Background: India is unlikely to meet the Millennium Development Goal for child mortality. As public policy impacts child mortality, we assessed the association of social sector expenditure with child mortality in India. Methods and Findings: Mixed-effects regression models were used to assess the relationship of state-level overall social sector expenditure and its major components (health, health-related, education, and other) with mortality by sex among infants and children aged 1–4 years from 1997 to 2009, adjusting for potential confounders. Counterfactual models were constructed to estimate deaths averted due to overall social sector increases since 1997. Increases in per capita overall social sector expenditure were slightly higher in less developed than in more developed states from 1997 to 2009 (2.4-fold versus 2-fold), but the level of expenditure remained 36% lower in the former in 2009. Increase in public expenditure on health was not significantly associated with mortality reduction in infants or at ages 1–4 years, but a 10% increase in health-related public expenditure was associated with a 3.6% mortality reduction (95% confidence interval 0.2–6.9%) in 1–4 years old boys. A 10% increase in overall social sector expenditure was associated with a mortality reduction in both boys (6.8%, 3.5–10.0%) and girls (4.1%, 0.8–7.5%) aged 1–4 years. We estimated 119,807 (95% uncertainty interval 53,409 – 214,662) averted deaths in boys aged 1–4 years and 94,037 (14,725 – 206,684) in girls in India in 2009 that could be attributed to increases in overall social sector expenditure since 1997. Conclusions: Further reduction in child mortality in India would be facilitated if policymakers give high priority to the social sector as a whole for resource allocation in the country's 5-year plan for 2012–2017, as public expenditure on health alone has not had major impact on reducing child mortality.

Coverage gap in maternal and child health services in India: assessing trends and regional deprivation during 1992-2006

Kumar, C, Singh, PK, Rai RK. *Journal of Public Health*, 2013. doi:10.1093/pubmed/fds108
<http://jpubhealth.oxfordjournals.org/content/early/2013/01/27/pubmed.fds108.abstract>

The three waves of National Family Health Survey (NFHS) conducted during 1992–1993 (NFHS-1), 1998–1999 (NFHS-2) and 2005–2006 (NFHS-3) were used to construct a composite index of coverage gap in four areas of health-care interventions: family planning, maternal and newborn care, immunization and treatment of sick children. **Results:** The central, eastern and northeastern regions of India reported a higher coverage gap in maternal and child health care services during 1992–2006, while the rural–urban difference in the coverage gap has increased in Gujarat, Haryana, Rajasthan and Kerala over the period. The analysis also shows a significant positive relationship between the coverage gap index and under-five mortality rate across states. **Conclusion:** Region or area-specific focus in order to increase the coverage of maternal and child health care services in India should be the priority of the policy-makers and programme executors.

Do public services reach the worst affected children in rural India? An investigation applying the quantile regression method

Mukhopadhyay, S. *Child Indicators Research*, January, 2013.
<http://link.springer.com/article/10.1007/s12187-013-9181-y>

In the absence of large scale survey data to form a comprehensive index of child wellbeing in India, we select nutritional status as the sole indicator reflecting overall child well-being, since ability to be well-nourished is the one of the most relevant capabilities, particularly for very young children. A puzzling aspect of child nutrition in India is that it is far worse than in countries with comparable and lower levels of income. This paper attempts to shed light on whether the public sector can be blamed for the poor nutritional outcomes of Indian children. The purpose of this paper is twofold. First, we have attempted to delineate the roles of private income and public infrastructure in explaining children's well-being in rural areas, as indicated by their nutritional status at various points of the distribution. Who are the children receiving the benefits of public facilities? Do public facilities cater to the worst affected segments of child population? How does private wealth interact with public facilities in determining child nutrition? Do children from wealthier households utilize public facilities better? Alternatively, do public facilities compensate for the absence of private wealth? Do these interaction effects vary at different parts of the distribution of children? Second, we attempt to find out the roles of private income and public facilities in equalizing child well-being. We try to explain what causes pure or univariate inequality in nutritional outcomes of children. [*Data source: Indian Human Development Survey 2005*]

Preventing childhood anemia in India: iron supplementation and beyond

Sachdev, HPS, Gera, T. *European Journal of Clinical Nutrition*, February 2013. doi:10.1038/ejcn.2012.212.
<http://www.nature.com/ejcn/journal/vaop/ncurrent/full/ejcn2012212a.html>

Childhood anemia has major adverse consequences for health and development. It's prevalence in India continues to range from 70 to 90%. Although anemia is multifactorial in etiology, preventative efforts have predominantly focused on increasing iron intake, primarily through supplementation in pregnant and lactating women. Policy thrust for childhood anemia is only recent. However, program implementation is dismal; only 3.8–4.7% of preschoolers receive iron–folate supplements. There is an urgent need for effective governance and implementation. Policy makers must distinguish anemia from iron deficiency, and introduce additional area-specific interventions as an integrated package. Increased iron intake may yield maximum benefit but will only address up to half the burden. In 6–59 months old children, instead of 100 days' continuous dosing with iron–folate syrup in a year, a directly supervised intermittent supplementation (biweekly; ~100 days per year) merits consideration. Multiple micronutrient powders for home fortification of foods in 6–23 months old infants do not appear viable. Additional interventions include delayed cord clamping, earlier supplementation in low birth weight infants, appropriate infant and young child feeding guidelines, and intermittent supervised supplementation in children and adolescents through school health programs. Use of double (iron–folate)-fortified salt in mid-day meal programs deserves piloting. Important area-specific, non-iron interventions include targeted deworming, and prevention and treatment of hemoglobinopathies, malaria and other common infections. Routine addition of multi-micronutrients to iron–folate supplementation appears unjustified currently. There is a pressing need to conduct relevant research, especially to inform etiology, additional interventions and implementation issues.

Relative efficacy of weekly and two differing doses of daily iron–folate supplementation in improving hemoglobin in mild and moderately anemic children between 3 and 5 years of age: a cluster randomized trial

Kapil, U, Sachdev, HPS, Dwivedi, SN, Pandey, RM, Upadhyay, AD, Sareen, N. *European Journal of Clinical Nutrition*, February, 2013 <http://www.nature.com/ejcn/journal/vaop/ncurrent/full/ejcn201313a.html>

BACKGROUND/OBJECTIVES: In India, 75% of children 05 years of age have anemia. The National Nutritional Anemia Control Program (NNACP) recommends 20mg iron and 100 mg folic acid (IFA) supplementation for 100 days/year, but still anemia prevalence has remained high. To accelerate the progress, suggestions include increase in IFA to therapeutic dose or supervised weekly supplementation to improve compliance. The objectives of this study was to compare the hemoglobin response with two dosages of daily (20mg iron and 100 mg folic acid, or 40mg iron and 200 mg folic acid) and weekly (40mg iron and 200 mg folic acid) IFA supplementation in children of 3–5 years of age with mild or moderate anemia (hemoglobin 7–10 g/dl). **SUBJECTS/METHODS:** Community-based cluster randomized control trial in nine adjoining Anganwadi Centers. Four hundred twenty six enrolled participants received directly supervised IFA tablet supplementation as per the above three groups. After 100 days, the number of available subjects in the NNACP daily dose (A), daily dose doubled (B) and weekly dose (C) groups were 112, 114 and 110, respectively. Hemoglobin was estimated at baseline, 50 and 100 days by the Cynmeth hemoglobin method. **RESULTS:** At 50 days, there were no differences between the three groups, but at 100 days, adjusted hemoglobin was lowered with weekly supplementation. The mean (95% confidence interval) hemoglobin (g/dl) differences were: (i) A–B: - 0.05 (-0.17, 0.05), (ii) A–C: -0.38 (-0.50, -0.27) and (iii) B–C: -0.33, (-0.45, -0.21). Anemia reduction was 18.8%, 18.4% and 10.9%, respectively, in the three groups. **CONCLUSION:** Directly supervised IFA supplementation at the NNACP or double dose is equally efficacious but superior to weekly regimen.

The adolescent girls' anaemia control programme: a decade of programming experience to break the inter-generational cycle of malnutrition in India

Aguayo, VM, Paintal, K, Singh, G. *Public Health Nutrition*, pages 1-10, 2013. doi:10.1017/S1368980012005587 <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8824632>

Objective: To document the scale-up of India's Adolescent Girls' Anaemia Control Programme following a knowledge-centred framework for scaling up nutrition interventions and to identify the critical elements of and lessons learned from a decade of programme experience for the control of anaemia in adolescent girls. *Design:* We reviewed all articles, programme and project reports, and baseline and endline assessments published between 1995 and 2012 regarding the control of anaemia through intermittent iron and folic acid supplementation; key programme specialists and managers were interviewed to complete or verify information wherever needed. *Setting:* India. *Subjects:* Adolescent girls. *Results:* The scale-up of India's Adolescent Girls' Anaemia Control Programme followed a knowledge-centred programme cycle comprising five phases: Evidence, Innovation, Evaluation, Replication and Universalization. By the end of 2011, the programme was being rolled out in thirteen states and was reaching 27.6 million adolescent girls of whom 16.3 million were school-going girls and 11.3 million were out-of-school girls. Building on the critical elements of and lessons learned from the programme, the Government of India launched in 2012 the national Weekly Iron and Folic Acid Supplementation (WIFS) programme to universalize the benefits of anaemia control to the overall population of Indian adolescents. *Conclusions:* The Adolescent Girls' Anaemia Control Programme in India provides a good example of how a knowledge-centred approach can successfully guide the scaling up of public health nutrition interventions and facilitate intersectoral convergence among different government departments and development partners to break the inter-generational cycle of undernutrition and deprivation.

Vitamin A supplementation every 6 months with retinol in 1 million pre-school children in north India: DEVTA, a cluster-randomised trial

Awasthi, S, Peto, R, Read, S, Clark, S, Pande, V, Bundy, D, the DEVTA (Deworming and Enhanced Vitamin A) team. The Lancet, March 2013, doi:10.1016/S0140-6736(12)62125-4

<http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2812%2962125-4/abstract?version=printerFriendly>

Background: In north India, vitamin A deficiency (retinol <0.70 $\mu\text{mol/L}$) is common in pre-school children and 2-3% die at ages 1.0–6.0 years. We aimed to assess whether periodic vitamin A supplementation could reduce this mortality. **Methods:** Participants in this cluster-randomised trial were pre-school children in the defined catchment areas of 8338 state-staffed village child-care centres (under-5 population 1 million) in 72 administrative blocks. Groups of four neighbouring blocks (clusters) were cluster-randomly allocated in Oxford, UK, between 6-monthly vitamin A (retinol capsule of 200 000 IU retinyl acetate in oil, to be cut and dripped into the child's mouth every 6 months), albendazole (400 mg tablet every 6 months), both, or neither (open control). Analyses of retinol effects are by block (36 vs 36 clusters). The study spanned 5 calendar years, with 11 6-monthly mass-treatment days for all children then aged 6–72 months. Annually, one centre per block was randomly selected and visited by a study team 1–5 months after any trial vitamin A to sample blood (for retinol assay, technically reliable only after mid-study), examine eyes, and interview caregivers. Separately, all 8338 centres were visited every 6 months to monitor pre-school deaths (100 000 visits, 25 000 deaths at ages 1.0–6.0 years [the primary outcome]). This trial is registered at ClinicalTrials.gov, NCT00222547. **Findings:** Estimated compliance with 6-monthly retinol supplements was 86%. Among 2581 versus 2584 children surveyed during the second half of the study, mean plasma retinol was one-sixth higher (0.72 [SE 0.01] vs 0.62 [0.01] $\mu\text{mol/L}$, increase 0.10 [SE 0.01] $\mu\text{mol/L}$) and the prevalence of severe deficiency was halved (retinol <0.35 $\mu\text{mol/L}$ 6% vs 13%, decrease 7% [SE 1%]), as was that of Bitot's spots (1.4% vs 3.5%, decrease 2.1% [SE 0.7%]). Comparing the 36 retinol-allocated versus 36 control blocks in analyses of the primary outcome, deaths per child-care centre at ages 1.0–6.0 years during the 5-year study were 3.01 retinol versus 3.15 control (absolute reduction 0.14 [SE 0.11], mortality ratio 0.96, 95% CI 0.89–1.03, $p=0.22$), suggesting absolute risks of death between ages 1.0 and 6.0 years of approximately 2.5% retinol versus 2.6% control. No specific cause of death was significantly affected. **Interpretation:** DEVTA contradicts the expectation from other trials that vitamin A supplementation would reduce child mortality by 20-30%, but cannot rule out some more modest effect. Meta-analysis of DEVTA plus eight previous randomised trials of supplementation (in various different populations) yielded a weighted average mortality reduction of 11% (95% CI 5-16, $p=0.00015$), reliably contradicting the hypothesis of no effect.

Population deworming every 6 months with albendazole in 1 million pre-school children in north India: DEVTA, a cluster-randomized trial

Awasthi, S, Peto, R, Read, S, Richards, SM, Pande, V, Bundy, D, the DEVTA (Deworming and Enhanced Vitamin A) team. The Lancet, March 2013, doi:10.1016/S0140-6736(12)62126-6

<http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2812%2962126-6/abstract>

Background: In north India many pre-school children are underweight, many have intestinal worms, and 2–3% die at ages 1.0–6.0 years. We used the state-wide Integrated Child Development Service (ICDS) infrastructure to help to assess any effects of regular deworming on mortality. **Methods:** Participants in this cluster-randomised study were children in catchment areas of 8338 ICDS-staffed village child-care centres (under-5 population 1 million) in 72 administrative blocks. Groups of four neighbouring blocks were cluster-randomly allocated in Oxford between 6-monthly vitamin A (retinol capsule of 200 000 IU retinyl acetate in oil, to be cut and dripped into the child's mouth every 6 months), albendazole (400 mg tablet every 6 months), both, or neither (open control). Analyses of albendazole effects are by block (36 vs 36 clusters). The study spanned 5 calendar years, with 11 6-monthly mass-treatment days for all children then aged 6–72 months. Annually, one centre per block was randomly selected and visited by a study team 1–5 months after any trial deworming to sample faeces (for presence of worm eggs, reliably assessed only after mid-study), weigh children, and interview caregivers. Separately, all 8338 centres were visited every 6 months to monitor pre-school deaths (100 000 visits, 25 000 deaths at age 1.0–6.0 years [the primary outcome]). This trial is registered at ClinicalTrials.gov, NCT00222547. **Findings:** Estimated compliance with 6-monthly albendazole was 86%. Among 2589 versus 2576 children surveyed during the second half of the study, nematode egg prevalence was 16% versus 36%, and most infection was light. After at least 2 years of treatment, weight at ages 3.0–6.0 years (standardised to age 4.0 years, 50% male) was 12.72 kg albendazole versus 12.68 kg control (difference 0.04 kg, 95% CI -0.14 to 0.21, $p=0.66$). Comparing the 36 albendazole-allocated versus 36 control blocks in analyses of the primary outcome, deaths per child-care centre

at ages 1·0–6·0 years during the 5-year study were 3·00 (SE 0·07) albendazole versus 3·16 (SE 0·09) control, difference 0·16 (SE 0·11, mortality ratio 0·95, 95% CI 0·89 to 1·02, $p=0\cdot16$), suggesting absolute risks of dying between ages 1·0 and 6·0 years of roughly 2·5% albendazole versus 2·6% control. No specific cause of death was significantly affected. **Interpretation:** Existing ICDS village staff can be organised to deliver simple pre-school interventions sustainably for many years at low cost, but regular deworming had little effect on mortality in this lightly-infected pre-school population.

Providing care for children with severe acute malnutrition in India: new evidence from Jharkhand

Aguayo, V, Jacob, S, Badgaiyan, N, Chandra, P, Kumar, A, Singh, K. *Public Health Nutrition*, pages 1-6, 2012. doi: 10.1017/S1368980012004788. http://journals.cambridge.org/abstract_S1368980012004788

Objective: To assess the effectiveness of facility-based care for children with severe acute malnutrition (SAM) in malnutrition treatment centres (MTC). **Design:** Early detection and treatment of SAM using locally adapted protocols; assessment of programme outcomes, including survival, default, discharge and recovery rates. **Setting:** All forty-eight MTC in Jharkhand, India. **Subjects:** Children (n 3595) with SAM admitted to MTC (1 July 2009–30 June 2011). **Results:** Of children admitted, 55·0% were girls, 77·7% were 6–23 months old and 68·6% belonged to scheduled tribes or castes; 34·4% had oedema or medical complications. Of the 3418 programme exits, the proportion of children who died was 0·6% (n 20), the proportion of children who defaulted was 18·4% (n 628) and the proportion of children discharged was 81·0% (n 2770). Children's average weight gain was 9·6 (SD 8·4) g/kg body weight per d and their average length of stay was 16·0 (SD 5·7) d. Among the 2770 children who were discharged from the programme, 39·4% (n 1090) gained 15% or more of their initial weight while 60·6% (n 1680) gained less than 15% of their initial weight. **Conclusions:** MTC provide life-saving care for children with SAM as demonstrated by high survival rates. However, the protocols and therapeutic foods currently used need to improve to ensure the recovery of all discharged children. MTC should be reserved for children with complicated SAM; children with uncomplicated SAM should be admitted to a community-based programme for the management of SAM, at a lesser risk to children and a lesser cost to families and the health system.

Abandoning the right to food

Aggarwal, A, Mander, H. *Economic and Political Weekly*, Vol XLVIII (8), pages 21-23, February 2013.

http://www.epw.in/system/files/pdf/2013_48/08/Abandoning_the_Right_to_Food.pdf

The proposed legislation on the National Food Security Act has been steadily watered down since it was first mooted in 2009. The Parliamentary Standing Committee that examined the 2011 Bill has disappointingly continued with “targeting”. If the government passes the bill incorporating the committee's suggestions, a historic opportunity to combat hunger and malnutrition would be lost.

NON PEER-REVIEWED LITERATURE

Screening for SAM in the community: Is MUAC a simple tool?

Dasgupta, R, Sinha, D, Jain, SK, Prasad, V. Indian Paediatrics

<http://www.ncbi.nlm.nih.gov/pubmed/23396790>

Anthropometric data from our survey of 1,879 children in Madhya Pradesh revealed low sensitivity (17.5%) and positive predictive value (30.4%) of Mid-Upper Arm Circumference (MUAC) at the recommended cut-off of 115 mm for identifying Severe Acute Malnutrition (SAM). This led us to question the reliability of MUAC as a screening tool to identify SAM at the community level, especially in the context of very high levels of stunting.

Women's status and children's height in India: Evidence from joint rural households

Coffey, D, Khera, R, Spears, D. http://riceinstitute.org/wordpress/wp-content/uploads/downloads/2013/02/CoffeyKheraSpears_PAA_EconDemography.pdf

Children in India are puzzlingly short relative to their level of economic development. Stunting among Indian children is important because childhood height predicts adult human capital and health. One candidate explanation for why Indian children are so short is the very low social status of Indian women who, as mothers, feed and care for children in the early life period that largely determines their height. However, the literature lacks a well-identified test of this conjecture. Our paper applies a novel strategy to identify an effect of women's status on children's height. Anthropological and demographic literature suggests that within joint Indian households, women married to older brothers have higher intrahousehold status than women married to younger brothers. We study children of these women: children of higher ranking daughters-in-law are taller, on average, than children of lower ranking daughters-in-law in rural Indian joint households. We provide empirical evidence that lower ranking daughters-in-law indeed have lower status in joint households and rule out several competing explanations for our findings.

India launches programme for child-health screening

Biswas, T. Lancet, 381(9869), pages e8, March 2013. doi: 10.1016/S0140-6736(13)60613-3

<http://download.thelancet.com/pdfs/journals/lancet/PIIS0140673613606133.pdf>

The Ministry of Health and Family Welfare launched the Child Health Screening and Early Intervention Services initiative under the umbrella of the National Rural Health Mission to provide targeted, comprehensive care to children aged 0–18 years. The programme has identified 30 health conditions for screening and management including birth defects like club foot, cleft lip, congenital heart diseases, deficiency conditions like anaemia, goitre, rickets, developmental delays and certain childhood diseases like rheumatic heart disease, otitis media, and dental caries.

UPCOMING EVENTS

J-PAL Executive Education

The five-day training programme will focus on rigorous monitoring and evaluation methods and techniques and is intended for professionals from government, international development, and civil society.

Where: New Delhi, India

When: July 8-12, 2013

For more information: contact Priya Arora at priyajeet.arora@ifmr.ac.in

Programming for Nutrition Outcomes

It is an open-access Master's level educational resource hosted by the London School of Hygiene & Tropical Medicine and supported by the Department of International Development. The module explores the complicated problem of undernutrition, highlights its multi-sectoral causes and identifies potential programmatic solutions.

For more information: <http://ble.lshtm.ac.uk/course/view.php?id=26>

Global Child Nutrition Forum 2013

Hosted by Global Child Nutrition Foundation (GCNF)

Where: Praia do Forte in Bahia, Brazil

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