symptoms. Statistical analyses performed with paired t-test & chi-square test; p<0.05 considered significant.

Results Sixty-two children (34 female, ages: 2–16yrs, mean: 7yrs) completed home-based TES successfully. Symptoms improved significantly in 56/62 (90%) STC children with gastrointestinal transit index improved after TES (Table 1). The 2 children who stopped laxative prior to TES had symptom improvement without further laxative use. Only 6 children (10%) required appendicostomy for antegrade enemas.

Abstract 141 Table 1

Parameters	Pre-TES	Post-TES	p-value
Soiling (days/week)	4.6±2.4	0.7±1.1	<0.0001 (paired t-test)
Defecation (bowel action/week)	1.6±1.6	3.5±1.9	<0.0001 (paired t-test)
Abdominal pain (days/week)	1.7±1.9	0.2±0.5	<0.0001 (paired t-test)
Laxative use	No laxative - 2 On laxative - 60	Stopped laxative - 15 Reduced laxative - 30 Same laxative - 15 Remained with no laxative - 2	<0.01 (Pearson Chi-square)
Gastrointestinal transit index	10.8±1.6	11.6±1.6	<0.002 (paired t-test)

Conclusion Home-based TES is non-invasive. It is a promising treatment for STC children with avoidance of surgery and reduced laxative use with improved symptoms in most children. Success required clinician training and close patient contact.

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142 COMMUNITY-BASED FOLLOW-UP WITH/WITHOUT FOOD SUPPLEMENTATION AND/OR PSYCHOSOCIAL STIMULATION IN THE MANAGEMENT OF CHILDREN WITH MODERATE ACUTE MALNUTRITION IN BANGLADESH

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Background and aims Moderate acute malnutrition (MAM) [WLZ: < –2 to –3] is a major health problem in Bangladesh and other low-income countries. This study was conducted to assess the effect of community-based follow-up care, with/without food supplementation and/or psychosocial stimulation, as an alternative to current hospital-based follow-up care of children with MAM.

Methods 227 children with MAM aged 6–24 months were randomly assigned to one of five regimens:

1. fortnightly follow-up care (FFC) at the icddr, b's outpatient-department, including growth monitoring, health education, and micro-nutrient supplementation (H-C, n=49);
2. FFC at community follow-up unit [established in the existing primary health care centers close to the residence of the child] but received the same regimen as H-C (C-C, n=53);
3. as per C-C plus cereal-based supplementary food (SF) (C-SF, n=49);
4. as per C-C plus psychosocial stimulation (PS) (C-PS, n=43); or
5. as per C-C plus both SF+PS (C-SF+PS, n=33).

Results Baseline characteristics were similar among the groups. Follow-up attendance and gain in weight and length were greater in groups C-SF, C-SF+PS, and C-PS than C-C, and these indicators were observed least in the H-C group. Children in the H-C group more often

suffered from diarrhea and fever than others. Children who attended at least five of the total six scheduled follow-up visits gained more in weight, length than those who attended fewer.

Conclusions Community-based service delivery, especially including supplementary food with or without psychosocial stimulation, permits better rehabilitation of greater numbers of children with MAM compared to current hospital outpatients-based care.

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143 PRIMARY CARE EXPERIENCES AND HEALTH-RELATED QUALITY OF LIFE AMONG CHILDREN IN LOWER INCOME FAMILIES IN THE U.S

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Purpose This study examines whether patient-reported indicators of primary care quality are are associated with measures of health related quality of life and reported school engagement among children in lower-income families.

Methods Data on 3,258 children ages 2–18 years are from a cross-sectional survey of parents of children affiliated with a county-level insurance program in California. Primary care quality was assessed using the Parents' Perception of Primary Care and was associated with health-related quality of life (measured using the Pediatric Quality of Life Inventory–PedsQL) overall and in four domains (physical, emotional, social, and school/daycare) and four measures of school engagement. We conducted multivariable linear and logistic regressions, adjusting for demographics, insurance, and setting of medical care.

Results A higher total primary care score was associated with a higher total PedsQL score and scores in four subdomains (total beta [B]=1.77, physical B=1.71, social B=1.36, emotional B=2.22, and school/daycare B=1.69, all p<0.001). It was also associated with missing fewer than three school days due to illness (odds ratio [OR]=1.12, 95 percent confidence intervals [CI]: 1.05, 1.19), excellent/above average school performance overall (OR=1.10, 95 percent CI: 1.03, 1.17) and performance in reading (OR=1.13, 95 percent CI: 1.06, 1.20) and math (OR=1.10, 95 percent CI: 1.03, 1.16).

Conclusion Patient-reported primary care quality indicators are favorably associated with HRQOL and measures of school engagement among children in low-income families.

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144 PRIMARY HEALTH CARE PHYSICIANS' WILLINGNESS AND PERCEIVED BARRIERS TOWARDS CONDUCTING RESEARCH

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Background and aims Health research supports health systems in the delivery of better, fairer and more equitable health care to people. Saudi Arabia government has acknowledged the importance of research to improve the patient outcome. Accordingly, conducting research has been promoted by Saudi commission for Health Specialization and a great increase in research fund was recognized. However, still has little of a research in Saudi Arabia compared to other countries. This research is conducted to assess the primary health care physicians willingness and the perceived barriers toward conducting research.

Methods This cross sectional study was conducted among all primary health care physician in Jeddah city. A self administered questionnaire was used to investigate their willingness and perceived barriers toward conducting research.

Results Of the respondents 87.1% reported that they are willing to conduct research and 91.7% with 95% felt that it is Important to

conduct research in the primary health care sitting. Many barriers to conduct research were identified the three most highly rated barrier was no access to research fund. Limited training in research methodology and limited support were the next most highly rated barriers. Barriers found to be significantly associated with research willingness were limited time, no access to the fund and lack of experience in conducting Research.

Conclusions The study shows that PHC physicians are willing and have a positive attitude towards primary health care research but face many obstacles. The key obstacles are limited time, no access to fund, and lack of experience.

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145 STRUCTURED LIGHT PLETHYSMOGRAPHY, A NON INVASIVE, NON CONTACT METHOD OF RECORDING RESPIRATORY FUNCTION

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Structured light plethysmography (SLP) technology utilises pc gaming/movie techniques to scan a patient with visible light, capture an image, measure movement in the image and produce accurate, real time data on changes in respiration. A checker board pattern of light is projected from a light projector onto the chest of an individual. Movements of the grid are viewed by two digital cameras, digitalised, and processed to form a 3D model and can be interrogated to assess lung function. The system has been tested in normal adults and children, adults with COPD, and children with cystic fibrosis.

Most recently it has been used to measure respiratory patterns in healthy infants, within 24 hours of birth, those born prematurely with and without chronic lung disease (CLD). The infants are not sedated, but simply placed, bare chested, within the field of vision of the Thora3DI (Pneumacare ™, Cambridge UK). There is no physical contact with the infant. This has not just one, but repeated data collection over short periods of time, on oxygen dependent infants with severe CLD, without changes in oxygen requirement or periods of clinical instability. Information on respiratory rate, tidal volume and the relationship between chest and abdominal volume change have been assessed, and will be included in this presentation.

Dr. Richard Iles is a Consultant in Respiratory Paediatrics, and founder and shareholder of PneumaCare Ltd, the Company that produces the Thora3DI.

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146 LUNG VOLUME IN VERY PRETERM INFANTS WITH EARLY RESPIRATORY DISTRESS SYNDROME (RDS) RECEIVING NASAL CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)
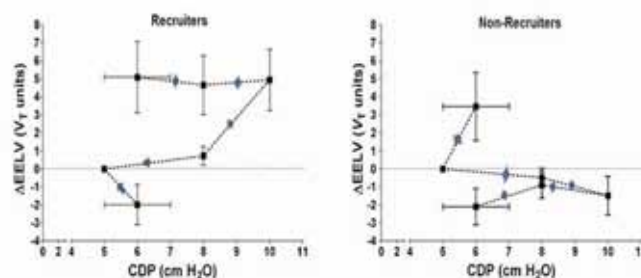
doi:10.1136/archdischild-2012-302724.0146

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Background and aims Although CPAP is extensively used for early RDS in very preterm infants from birth, the influence of CPAP on lung behaviour in early illness remains unclear. This study aimed to describe global volumetric behaviour and work of breathing (WOB) at differing continuous distending pressures (CDP) in very preterm infants in the first 12–18 hrs of life.

Methods Infants < 32 weeks' gestational age receiving nasal CPAP from birth were studied whilst supine. Data were initially recorded at the CPAP in clinical use [baseline; mean (SD) 6(1) cmH_2O, FiO_2 0.25(0.03)]. Then, CPAP was applied at 5, 8, 10 and 8 cmH_2O for 15-mins each. Changes in end-expiratory lung volume [ΔEELV

(V_T units)] and tidal volume [ΔV_T (V_T units)] were measured using respiratory inductive plethysmography and expressed relative to values obtained at CPAP 5 cmH_2O. Breath-to-breath phase angles (Θ) and labour breathing index (LBI) were calculated post-hoc to determine respiratory asynchrony.

Results Twenty infants, mean(SD) GA 29(1) weeks and BW 1181(417)g were studied at median (IQR) 15(13.16)hours. No significant differences were seen in global EELV, V_T, WOB or LBI at all CDP. Only 11/20 infants demonstrated hysteresis with a significant increase in EELV from baseline following a CPAP recruitment manoeuvre.

Abstract 146 Figure 1   Change in EELV in Recruiters vs. Non-Recruiters

Conclusions Not all preterm infants have recruitable lung disease. Infants with recruitable lung disease may benefit from a CPAP recruitment manoeuvre. Further work is needed to define the optimal CPAP level to use in early RDS.

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147 LOSS OF END-EXPIRATORY LUNG VOLUME DURING PERIODS OF HYPOPNOEA IN PRETERM INFANTS WITH EARLY RESPIRATORY DISTRESS SYNDROME (RDS) RECEIVING CPAP

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Background and aims Whether variations in end-expiratory lung volume (EELV) occur in stable infants receiving nasal CPAP is unknown. This study aimed to describe global and regional volumetric behavior over periods of hypopnoea (< 20 breaths/min over 15-secs) in preterm infants < 18 hours of age receiving nasal CPAP.

Methods Twenty infants < 32 weeks' receiving CPAP were studied whilst supine. Clinicians set CPAP level at mean(SD) 6(1)cmH_2O in FiO_2 0.25(0.03). Relative ΔEELV and tidal volume (V_T) [respiratory inductive plethysmography]] and regional ΔEELV [electrical impedance tomography] were measured. 20-secs of data were analysed preceding and following episodes of hypopnoea and ΔEELV and ΔV_T determined (expressed as average V_T units at baseline). Breath-to-breath phase angles (Θ) and labored breathing index (LBI) were calculated post-hoc.

Results Ten episodes of hypopnoea lasting mean(SD) 26(11)s were analyzed in 10 infants mean(SD) GA 29(1) weeks and BW 1119 (264)g. EELV and V_T fell significantly from baseline by median(range) 0.3(–1.1, 0.5) and 0.2 (0.3)V_T units(p<0.05) during episodes of hypopnoea. Both non-dependant and dependant halves of the chest contributed equally to global loss in EELV during hypopnoea. During recovery, the non-dependant hemi-thorax recovered median (range)70 (9,100)% and dependant 63 (4,100)% of the loss of EELV in those regions respectively. No changes were seen in HR, oxygen saturations, FiO_2, LBI and thoraco-abdominal asynchrony during these episodes.