CHILD2015 Global Communications Package Report

Rationale	Many conferences and other meetings address important issues regarding the education and learning needs of health professionals working with children in poorer countries. Yet these individuals are usually absent from the meeting itself. Critically, their views are not heard and they are not informed of the meeting's main outcomes. The CHILD2015 Global Communications Package addresses these issues. For more information about CHILD2015, see section at end of this report
Conference or meeting	**International Child Health Group, VSO and RCPCH International joint session at RCPCH Spring Meeting, York University, UK April 1st, 2009**
Key themes	The conference organisers working together with CHILD2015 staff identified the following key themes: Theme 1: Identification of Severe Acute Malnutrition (SAM) Theme 2: Contraception and family size Theme 3: Care seeking practices for sick children in a high child mortality / low resources region Theme 4: 'Task-shifting' Theme 5: North-South Health links Theme 6: Training doctors in basic laboratory skills Theme 7: Emergency treatment and triage (ETAT) Theme 8: Injury prevention
Strategy	• The conference programme was circulated to the global email forum CHILD2015 (www.hifa2015.org/child2015-forum) for comments and questions (see appx 1: conference programme) • Of the numerous issues in the programme, the members responded to two key areas: malnutrition and emergency triage. • A brief summary of the CHILD2015 pre-meeting discussions was presented at the meeting during the question time following the individual presentations. • A summary of the discussions at the meeting following the presentations was forwarded to the CHILD2015 list. • This generated more discussions that were also summarised.

- Some discussions have been summarised and integrated into new sections of the HIFA2015/CHILD2015 Knowledge base (see below)

CHILD2015 discussions
Theme 1: Identification of Severe Acute Malnutrition (SAM)

Disease burden and risk-benefit implications of using new WHO child growth standards to diagnose severe acute malnutrition (SAM) in infants <6 months age: secondary data analysis of 21 developing country DHS surveys. Dr Marko Kerac.

See abstract of meeting presentation in the appendix 2.

This secondary data analysis showed that use of the new WHO standards resulted in a marked increase in the number of infants identified as having SAM – especially amongst those aged less than 6 months.

Extracts from pre-meeting discussion on CHILD2015:

"It would be great to hear feedback on [the new WHO Child Growth Standards]. In particular:
1) What are your experiences if you have already adopted WHO-GS for identification of severe acute malnutrition?
2) If you are soon adopting new WHO-GS, what plans are you making for likely increase in patient caseload?
3) Your thoughts on the risk/benefit balance of WHO-GS for the infant <6month age group.
Further information:
http://www.ennonline.net/research/mami.aspx
http://www.who.int/childgrowth/en/index.html "
Marko Kerac, Centre for International Health and Development, UCL, UK

"Recently I was discussing with colleagues in Eastern Africa, the information needs of these key staff. It became clear that a general complaint was that the books, etc. that we write are TOO LONG. What the busy nurse wants is something to 'put in the pocket' as a sort of aide memoire (or as a medical assistant in Malawi once said 'can be eaten at one meal'). And they would like more flow charts to put on the ward wall for the same purpose."
Ann Burgess, Freelance Nutritionist, UK

"I have found a lot of frustration among health care workers with regard to the new [WHO] guidelines [for diagnosis of Severe Acute Malnutrition in infants <6 months] as the weight/height charts span several pages and having a quick easy reference is what they want - more quick look wall charts, or pocket guides. And the question often comes up regarding whether we are accurately diagnosing malnutrition in the young infant with presumptive HIV infection."

Annie Buchanan, Duke University Medical Center, USA

"I would like to make a plea that, when such guidelines [WHO guidelines for SAM] are agreed, an effort is made to communicate them in suitable format to the front line health workers in Africa and elsewhere - so they can recognise and know what to do (if only to refer) when they see malnourished babies…"
Ann Burgess, Freelance Nutritionist, UK

"I think that flow charts and short pocket books in point format appears to be most attractive to nurses and other paramedics as well as junior doctors. CHILD2015 should find a way of getting us all to come up with flow charts on common conditions/problems (to start with). And I believe that if the charts are many, they could even be compiled into a small pocket book, which will be easier to read and follow than books."
Emmanuel A. Ameh, Consultant Paediatric Surgeon, Ahmadu Bello University Teaching Hospital, Nigeria (March 2009)

On behalf of CHILD2015 members, Neil Pakenham-Walsh (lead moderator of CHILD2015) reported that some people had found WHO guidelines difficult to use and that there is a need to find better ways to present them to frontline health workers. Marko replied (outside the meeting) that he would look into this as part of the broader MAMI initiative (Management of Acute Malnutrition in Infants: http://www.ucl.ac.uk/cihd/research/nutrition/mami)

The pre-meeting discussion was integrated with previous related commentary during 2006-8, to create a new web page on the information and learning needs of healthcare providers caring for children with Malnutrition. See: http://www.hifa2015.org/knowledge-base/health-care/malnutrition/

Summary of discussion at the meeting

Question: Is assessment based on weight for length was reliable, especially given the difficulty in accurately measuring length in infants? There are 'mathematical reasons' why it might not be so useful. ***Answer:*** Yes, weight for length is not ideal and there is a need to consider other measures, including Mid Upper Arm Circumference.

Comment: One participant recommended supplemental suckling as an effective nutritional intervention for breast fed infants in the first 6 months. Additional milk is given during suckling via a feeding tube attached to the nipple. Others agreed that this is effective and that health workers need to be better informed of this technique.

Summary of post-meeting discussion: on-going.

To join the discussion, email your name, position, organisation and brief description of professional interests to: child2015-admin@dgroups.org

CHILD2015 discussions
Theme 2: Contraception and family size

Family size and use of contraception in Gulu, Northern Uganda; Dr Beth Cheesebrough

A survey of mothers of children admitted to Gulu Hospital, Northern Uganda, many from families internally displaced as a result of civil war, showed that average family size was 3.7 (range 1-9), previous child death was common and 62% families had adopted at least one child. The most commonly used method of contraception was depot injections. However, less than half of women who wanted no more children were using contraception, and knowledge about methods of contraception was poor.

See abstract of meeting presentation in the appendix

Summary of pre-meeting discussion: This topic did not generate discussion before the meeting.

Summary of discussion at the meeting

Question: Had the authors noted any on-the-ground impact from the 'gag rule' of PEPFAR (exclusion of US financial support to organisations that provide abortion services, or counselling and referral to such services)? ***Answer:*** There is a lot of confusion among NGOs and others on the ground, and it was difficult to know where the money was coming from.

Comment: Breastfeeding had provided a natural contraceptive to those not using contraception. Many had lost 1-2 children, so the actual median number of children born was likely 6 or 7, the number that might be expected in women who do not use contraception.

Question: Were condoms being used? This was not mentioned in the study. ***Answer:*** Some NGOs are making condoms available free of charge but that, by and large, condoms are not being used.

Summary of post-meeting discussion: on-going

CHILD2015 discussions
Theme 3: Care seeking practices for sick children in a high child mortality / low resources region

Frequency of presentation to health care workers and other professionals in Gulu district of Northern Uganda. Dr Beth Cheesbrough

A survey of mothers of children admitted to Gulu Hospital, Northern Uganda, many from families internally displaced as a result of civil war, showed that poorly trained medicine dispensers are often the first point of contact when children are unwell. Parents were unwilling to admit to the use of traditional healers but traditional practices of cutting skin and gums was common.

See abstract of meeting presentation in the appendix

Summary of pre-meeting discussion: This topic did not generate discussion before the meeting.

Summary of discussion at the meeting

During questions, the speaker said that the figure of '1% to traditional healer' was probably an understimate. She recalled how the nurse accompanying the interviewer had laughed when this question was asked – the nurse said that mothers would not talk about traditional healers because they thought the interviewer would disapprove. Unsafe and ineffective traditional healing was clearly much more common than reported, as seen by the frequency of scarring on children's chests.

Question: Would traditional healers change their practice if they were made more aware of the harm they were doing? ***Answer:*** Possibly (the current study had not investigated this).

Question: What are the perceptions among patients with regards to injections? ***Answer:*** Patients do tend to prefer injections to other treatments, because they are seen as being more powerful. This is possibly one reason why there is a high take-up of immunisations given by injection.

Comment: The cohort in this health facility may not have been representative of the general population. ***Answer:*** The speaker agreed this might indeed be the case.

Comment: Some practitioners in Nigeria had engendered trust in their patients by giving preventive treatments for conditions that are relatively rare, such as epilepsy, and which would therefore be perceived as effective prevention by patients even where they have no real preventive effect.

Summary of post-meeting discussion: on-going

CHILD2015 discussions
Theme 4: 'Task-shifting'

Two presentations address this topical issue:

1. Phlebotomy training for patient attendants at Queen Elizabeth Hospital, Blantyre, Malawi. Dr Victoria Walker

To reduce the workload of nurses, 25 patient attendants (PAs) were trained in venepuncture and capillary sampling using an existing (UK) 3-week training course. Five Malawi healthcare staff were facilitators. There were theory and practical sessions using training arms/pads and then patients. Six months after the training, all PAs were practising venepuncture regularly and felt their enhanced role had improved their motivation to learn other new skills. The local facilitators were planning a further course.

See abstract of meeting presentation in the appendix

2. 'Task-shifting' to reduce neonatal mortality in a tertiary referral hospital in a developing country. Dr Hannah Blencowe

Selected tasks were "shifted" from doctors to others: (1) nursing auxiliary-led Kangaroo Care for low birthweight (<2.5 kg) infants; (2) mother-led "rooming in" on the postnatal ward for stable term babies; (3) nurse-led protocols for inpatient care. Inpatient mortality was significantly lower after than before the initiative.

See abstract of meeting presentation in the appendix

Summary of pre-meeting discussion: This topic did not generate discussion before the meeting. However, there has been considerable discussion *since* the meeting, which will be summarised below in due course.

Summary of discussion at the meeting

1. Phlebotomy training in Blantyre

Question: How does the institution recognise the increased responsibility and staff exposure to risk? Who is responsible? Who "carries the can" in the event of harm to patients of newly-trained staff (e.g. needle stick injury)? ***Answer:*** This has not been a problem. Attendants are encouraged to refer difficult cases to senior staff.

Comment: A participant recalled witnessing unsafe methods of venepuncture in his time in Africa, including use of the femoral artery to draw blood (in one case leading to leg ischaemia) and suspension of an infant by the ankles in an attempt to draw blood from the neck. On-going supervision of newly trained staff is critical.

Question: Now that these health workers have a new skill, do they now expect a higher salary? ***Answer:*** Yes, with new skills there is a tendency to seek higher salary.

2. Task shifting and neonatal mortality

The speaker noted that the paediatric ward was far from the paediatric department. Doctors were rarely on the ward, and difficult to contact.
Task shifting allowed nurses to do advanced care such as CPAP, for which there was previously insufficient time.

Question: Is it possible to differentiate which of the three changes contributed most to reduced mortality? ***Answer:*** No, the study was unable to differentiate.

Question: This work is very important - how will it be publicised for potential use elsewhere? Is there a forum where similar good examples of successful changes to practice are accessible to those who need it most – i.e. health workers "at the coal face" in poorer countries? ***Answer (from another participant):*** One channel that can be used, in addition to publication in journals, is discussion forums such as CHILD2015.

Summary of post-meeting discussion: on-going

To join the discussion, email your name, position, organisation and brief description of professional interests to: child2015-admin@dgroups.org

CHILD2015 discussions

Theme 5: North-South Health links

Evaluation of the health link which exists between a leading children's hospital (Birmingham) in the UK and Queen Elizabeth Central Hospital, Blantyre, Malawi.
Dr Victoria Walker

Victoria gave an overview of the experience of a 'North-South' link between two major hospitals, supported by THET. The link has had a hugely positive impact on staff motivation, staff being motivated by learning new skills and by the interaction of exchange visits - nurse exchanges visits were especially valued. Quotes from staff included a consultant who said "it's good - our nurses will now start bagging a baby who isn't breathing".

See abstract of meeting presentation in the appendix

Summary of pre-meeting discussion: This topic did not generate discussion before the meeting.

Summary of discussion at the meeting

Comment: There is perhaps a risk that health links might encourage or facilitate health staff leaving the country.

Comment: Health links such as this might help to *retain* staff who might otherwise be attracted to higher-paying NGOs working in Malawi ('internal brain drain').

Question: What is the potential to do further, more rigorous quantitative research to demonstrate impact on health outcomes? ***Answer***: It would be difficult to prove a causal link with reduced mortality. Professor Elizabeth Molyneux was quoted: "Everyone wants you to look at outcomes, but sometimes it's deeper than that."

Summary of post-meeting discussion: on-going

CHILD2015 discussions

Theme 6: Training doctors in basic laboratory skills

Embedding side-ward laboratory teaching and quality assurance in medical student and junior doctor training Ibadan, Nigeria. Professor Olugbemiro Sodeinde

An innovative training course in side-ward laboratory procedures, as required by the Medical and Dental Council of Nigeria, was developed for medical students and house physicians (HP). Imaginative approaches were used to provide the training staff and quality control of results included.

Summary of pre-meeting discussion: This topic did not generate discussion before the meeting.

Summary of discussion at the meeting

Comment: UK medical students have little insight into how even basic laboratory investigations on patient samples are performed. This would be difficult to set-up in the current environment of western health care. However, exposure to these “hands-on” side-laboratory procedures would be greatly beneficial as part of their training. Could this package be 'sold' as an educational package for UK medical student electives? Income could be used to further develop the programme with the knock-on effect of improving patient diagnosis. Is this a good example of “ethical business”?

Summary of post-meeting discussion: on-going

CHILD2015 discussions

Theme 7: Emergency treatment and triage (ETAT)

RCPCH Guest lecture: Focus on East Africa. David Baum International Foundation supported ETAT+ programme, Kenya

Joint presentation by: Grace Irimu, Department of Paediatrics and Child Health, University of Nairobi, Kenya and Thomas Ngwiri, Paediatrician/Endocrinologist, Embu Hospital, Kenya

On behalf of colleagues in the Ministry of Health, University of Nairobi and KEMRI Wellcome Trust)

To reduce deaths due to incorrect diagnosis, treatment and frequent prescribing errors in children admitted to hospital, simple clinical practice guidelines (CPGs) were developed from existing WHO materials. Adopting an adult learning approach, a extensive training programme (ETAT+) was delivered to health workers and subsequently integrated into pre-service training and medical teaching institutions. Further work is needed to determine the impact of the initiative on quality of care.

See abstract of meeting presentation in the appendix

Extracts from pre-meeting discussion on CHILD2015:

"Any intervention to reduce the mortality must target the emergency triage assessment and treatment plus the initial admission care (ETAT+). To help improve hospital management of the major causes of inpatient childhood mortality we developed simple clinical practice guidelines (CPGs) for use in Kenya, a low-income setting. These guidelines were adapted from existing WHO materials by participatory process. To facilitate dissemination and implementation of the guidelines we developed a 5.5 days training programme… Our experience suggests that with sustained effort it is possible to develop locally owned, appropriate clinical practice guidelines for emergency and initial hospital care for seriously ill children with involvement of pertinent stake holders throughout. To ensure sustainability of such innovation it is fundamental to incorporate the training in the pre-service training and the medical teaching institutions…"
Grace Irimu, Consultant Paediatrician, University of Nairobi, Kenya

"It would be very useful to hear if anyone has experience of how to do moulage training effectively in poorer countries - where the models used in richer countries are not available. The 'kit' would have to be basic - so that the participants could also deliver the training themselves after the course. For example, to teach the initial assessment skills in ETAT (Emergency Triage Assessment and Treatment; a component of the WHO IMCI guidlines), how do you simulate a sick child in a classroom setting (obstructed breathing, signs of shock, etc.)."
Stephen Allen, University of Swansea, UK

"When I was setting up our assessment unit in Muheza we ran role play exercises as part of the education in emergency management. I had written out several 'scenarios', we

didn't have a dummy but just stood around the bed with a nurse and a clinical officer. We had 'convulsing child', 'comatose child' etc and ran through them… one of the most rewarding aspects of my time here has been watching that team of nurses and clinical officers learn how to manage paediatric emergencies with a simple ABC approach. So dummies are not really neccessary."
Behzad Nadjm, clinical researcher, Muheza, Tanzania

The pre-meeting discussion was integrated with previous related commentary during 2006-8, to create a new web page on the information and learning needs of healthcare providers to provide effective triage. See: http://www.hifa2015.org/knowledge-base/health-care/triage/

Summary of discussion at the meeting

Grace's presentation described the use of manikins for ETAT, and highlighted general management problems such as unsafe disposal of used needles on the ward floor, and health posters obscured by other notices. One notice 'ABC', near a neonatal resuscitation trolley, caused confusion between the initial letter of drugs (e.g. "adrenaline") rather than the usual Airways/Breathing/Circulation.

Thomas focused on the experience of Embu Hospital, a busy 588-bed hospital (134 paediatric beds) that is severely understaffed (only two paediatricians). Thomas has applied ETAT+ training approach to three other areas:
1. Neonatal resuscitation: prior to training, most staff incorrectly believed that drugs are the first step. A course of just 1 day, using mannikins, restored the correct ABC approach.
2. Treatment of acute asthma: prior to training, staff frequently and inappropriately used subcutaneous adrenaline. After training, such use was eliminated.
3. Rational use of injections: WHO reports that 70% of the 60 billion injections given every year are unjustifiable. Unjustifiable injections were very commonly given in Embu outpatients. After training, the number of injections given in outpatients fell from 150/day to less than 5/day.

One participant picked-up on the fact that EMBU hospital is considered a non-teaching hospital and the staff unable to generate new knowledge. However, they have quickly become experts in how to improve important health care practices. As previously, the issue of how to ensure that awareness of such examples of improved practice reach other institutions was raised.

Summary of post-meeting discussion: on-going

To join the discussion, email your name, position, organisation and brief description of professional interests to: child2015-admin@dgroups.org

CHILD2015 discussions

Theme 8: Injury prevention

ICHG Guest lecture: Injury Prevention - a Priority for International Child Health. Professor Liz Towner

Liz Towner described why injury prevention is important and different approaches to injury prevention, illustrated by a case study in Bangladesh. Injury is causing an increasing proportion of death worldwide, thanks partly to reductions in deaths from other causes, but also from an absolute increase in deaths. Reasons for this include urbanisation and motorisation (road traffic accidents are the leading cause of death from injury). Climate change is also becoming an important factor, as it leads to increased numbers of refugees and internally displaced people, which in turn leads to hazardous environments and increased risk of injury. Deaths from injury per 100,000 population are much greater in Africa (including North Africa) and South Asia than elsewhere. In these countries there is a particularly disproportionate risk of death from drowning and burns.

Most of the evidence for injury prevention comes from high-income countries, whose environments are often very different from those of low-income countries. Compare, for example, the homogenous car traffic that is characteristic of high-income countries, with the mixed traffic (cars, bicycles, animals, pedestrians) of many developing-country settings.

In Bangladesh, the leading cause of death in children, by far, is drowning, reflecting the water-rich environment of the country. The Centre for Injury Research and Prevention has successfully introduced an injury prevention programme that includes social autopsy, home safety advisers, a training course for teachers, community creche, and behaviour change - theatre, videos, wall painting.

Summary of pre-meeting discussion: This topic did not generate discussion before the meeting.

Summary of discussion at the meeting

Unfortunately, we ran out of time for comments and questions although several participants approach Professor Towner after her presentation.

Summary of post-meeting discussion: on-going

Concluding remarks

The themes raised at the meeting generated much useful discussion amongst CHILD2015 members that was fed into the meeting.

On the day, many of the presentations described gross deficiencies in healthcare, both within formal and informal systems, but that care can be improved with minimal resources, on-site training and adequate supervision and management. The best trainers, we were told, are often local staff. Training can lead to dramatic improvements in healthcare practice, sometimes associated with marked reductions in mortality. We have also heard how task-shifting can improve morale among staff while maintaining or even improving service to patients, and freeing time for more qualified staff to deliver special treatments such as CPAP.

A critical and unresolved issue is how these impressive examples of initiatives to improve health care, developed within resource-poor institutions, can be relayed to the people to need most to hear – other health workers in similar settings.

Further details regarding the CHILD2015 and HIFA2015 initiatives

CHILD2015 and HIFA2015 are two dynamic email forums working towards the goal of 'Healthcare Information For All by 2015'

HIFA2015 is a global email discussion group with a focus on the information and learning needs of healthcare providers in developing countries. The main focus is at the local level: households and communities, primary health workers, and health professionals working in district hospital facilities. Its goal is linked with the Millennium Development Goals:

By 2015, every person worldwide will have access to an informed healthcare provider.

CHILD2015 focuses specifically on the information and learning needs of people responsible for the healthcare of the newborn, infants and children. Its goal: By 2015, every child worldwide will have access to an informed healthcare provider. It is run by the International Child Health Group of the Royal College of Paediatrics and Child Health in collaboration with the Global Healthcare Information Network.

HIFA2015 & CHILD2015 are open to anyone with an interest in improving healthcare in developing countries and membership is free.

Members:
* Are part of a worldwide community of more than 2,400 people dedicated to meet the information and learning needs of healthcare providers
* Learn from others and share experience and expertise
* Make new contacts and collaborations
* Let others know about your interests, activities, services, publications
* Find out about funding and training opportunities, useful websites, new publications...
* Collaborate to achieve common goals

To join, send an email to **HIFA2015-admin@dgroups.org** and/or **CHILD2015-admin@dgroups.org** with:
1. your name
2. your organization and country of residence
3. a brief description of your professional interests.

To post a message, email: HIFA2015@dgroups.org or CHILD2015@dgroups.org

HIFA2015 Campaign website: www.hifa2015.org

HIFA 2009 Challenge: Meeting the information needs of nurses and midwives: www.hifa2015.org/2009-challenge

For further details, contact Neil Pakenham-Walsh, HIFA2015 Campaign coordinator: neil.pakenham-walsh@ghi-net.org

With thanks to our 2009 Sponsors: British Medical Association, Network for Information and Digital Access, Royal College of Midwives, Royal College of Nursing

Appendix 1: Meeting programme

Joint ICHG / RCPCH International / VSO meeting
Wednesday, April 1st, 2009
University of York, UK

Held during the RCPCH Annual Spring **Meeting** (for details of the Spring Meeting and registration, see: http://www.rcpch.ac.uk/Education/Events/RCPCH-Annual-Spring-Meeting**)**

12.00 -- 14.30: ICHG Scientific Session (including business meeting)

12.00 INT1 0236 Disease burden and risk-benefit implications of using new WHO Child Growth Standards to diagnose Severe Acute Malnutrition in infants <6 months age: Secondary data analysis of 21 developing country DHS surveys

12.15 INT10 0531 Family Size and Use of Contraception in Gulu, Northern Uganda

12.30 INT5 0432 Frequency of Presentation to Health Care Workers and other Professionals in Gulu District of Northern Uganda

12.45 NT2 0322 Phlebotomy training for patient attendants at Queen Elizabeth Hospital (QECH), Blantyre, Malawi

13.00 INT11 0541 Embedding side-ward laboratory teaching and quality assurance in medical student and junior doctor training Ibadan, Nigeria.

13.15 - 14.00 Business Meeting + RCPCH International update, Stephen Greene

14.00 INT4 0392 'Task-shifting' to reduce neonatal mortality in a tertiary referral hospital in a developing country

14.15 INT3 0332 Evaluation of the Health Link which exists between a leading Children's Hospital in the UK and Queen Elizabeth Central Hospital, Blantyre, Malawi

14.30- 15.15 RCPCH International Guest Speakers: Dr. Grace Irimu, Paediatrician, University of Nairobi and Dr. Thomas Ngwiri, Paediatrician, Embu Provincial Hospital, Kenya. **Training in ETAT+ in Kenya** (DBIF-supported programme). Chair: Dr. Steve Allen

15.15 Tea

15.45 - 16.15 VSO
- Richard Tomlinson (introductory remarks)
- Ruth Grearson (VSO)
- John Morrice (Volunteer)

16.15 -17.00: ICHG Guest Speaker: Prof Liz Towner. Injury Prevention - a Priority for International Child Health.

Appendix 2: Meeting abstracts

Note: All abstracts were published in Archives of Disease in Childhood 2009;94(Supplement 1):A49-A51.

Theme 1: Identification of Severe Acute Malnutrition (SAM)

Disease burden and risk-benefit implications of using new WHO child growth standards to diagnose severe acute malnutrition (SAM) in infants <6 months age: secondary data analysis of 21 developing country DHS surveys. Dr Marko Kerac

Background: Using established diagnostic criteria together with new World Health Organization child growth standards (WHO-GS) categorises more children aged 6-59 months with severe acute malnutrition (SAM). General consensus is that this may be beneficial: more children become eligible for evidence-based therapeutic feeding. To date, the effects of WHO-GS on SAM in infants aged less than 6 months have not been examined. This is an important research gap: there are already difficulties and challenges managing SAM in this age group. In this study, we describe how WHO-GS affect burden-of-disease estimates in infants. This is essential information for planning child nutrition and health services.

Methods: We analysed secondary data from recent demographic and health surveys from 21 developing countries. The prevalence of SAM (weight-for-height <-3Z) was calculated using both National Center for Health Statistics (NCHS) growth references and WHO-GS.

Results: Data for 163 230 children (15 537 aged <6 months; 147 695 aged 6-59 months) were examined. Diagnosing SAM with the new WHO-GS rather than the old NCHS reference increases the prevalence of infant (<6 months) SAM markedly: odds ratio (OR) 5.5 (95% CI 4.81 to 6.32). There are smaller but still significant increases in SAM in children aged 6-59 months: OR 1.8 (95% CI 1.73 to 1.90).

Conclusions: Increases in SAM are considerably greater in infants aged less than 6 months than in those aged 6-59 months. Policy makers rolling out the new WHO-GS need to consider possible adverse risk-benefit implications. The benefits of labelling more infants with SAM might be marginal: the evidence base for treatment of SAM in infants is weak; skilled breastfeeding support is scarce; inpatient treatment cannot be easily scaled up. Risks are potentially serious: concerned carers may inappropriately introduce "top-up" foods or breast-milk substitutes, thus undermining exclusive breastfeeding (which is known to influence mortality). To address these concerns, WHO-GS implementation could be delayed until clearer risk-benefit evidence emerges or separate SAM diagnostic criteria for infants less than 6 months could be considered.

Theme 2: Contraception and family size

Family size and use of contraception in Gulu, Northern Uganda

Dr Beth Cheesebrough

Introduction: Gulu Referral Hospital is the main government hospital in the economic capital of Northern Uganda. Gulu district has been the location of insurgent fighting by the Lord's Resistance Army from 1987 to 2006 and there has been much family disruption during this period as a result of the breakdown of the healthcare system, child kidnapping and other effects of war. There are now approximately 700 000 people living in internally displaced persons camps.

Aims: To assess family size and the use of contraception in families of children admitted to Gulu Referral Hospital.

Methods: Mothers of children admitted to the paediatric ward over a 2-week period (50 in total) were asked to complete a verbal questionnaire. The questions were posed by the attending doctor and translated to Acholi by the attending nurse. No mothers declined the questionnaire but five children were excluded as they were accompanied by an adult other than their mother.

Results: The mean number of biological children including the index child was 3.7 (range 1-9). In addition, 62% families had adopted at least one child and 34% had adopted two or more children. 46% of children adopted were children of siblings and 19% were children of "co-wives". 56% of respondents wanted no more children (mean number of children 4.9) and 40% of respondents wanted to extend their family. Of those who wanted more children, the most desired number of children was four (55%) or five (20%). Of those who wanted no more children, 43% were using contraception and 57% were not. Overall, 40% of respondents were using contraception, with 75% of those using depot injections and 15% the oral contraceptive pill. Of those who were not using contraception, 70% said they would like to have information about contraception and 52% were unable to name any contraceptive method. 63% cited lack of information as the main reason why they were not using contraception, 13% cited fear of side effects and 13% husband's preference.

Conclusions: In Gulu, women generally aim to have four or five children but more than half are also accommodating at least one adopted child, usually an orphaned child of a close relative. Less than half of the women who want no more children are using contraception, and knowledge about methods of contraception is poor. The most commonly used and most commonly named method of contraception is depot injections.

Theme 3: Care seeking practices for sick children in a high child mortality / low resources region

Frequency of presentation to health care workers and other professionals in Gulu district of Northern Uganda. Dr Beth Cheesebrough

Introduction: Gulu Referral Hospital is the main government hospital in the economic capital of Northern Uganda. Gulu district has been the location of insurgent fighting by the Lord's Resistance Army from 1987 to 2006 and there are approximately 700 000 people living in internally displaced persons camps. The paediatric ward has an average of 125 admissions per month and a mortality rate of 4.4%. The overall under-5 mortality is 23 per 100 000 in Gulu district.

Aims: To ascertain how frequently and to whom children are being presented for ill health in an area where child mortality is high and resources are low.

Results: Children had been presented for healthcare advice a total of 374 times in the year leading up to the admission (mean 7.5 episodes per child, median five episodes per child). On 50% of occasions the child was presented to a healthcare worker, most commonly a clinical officer. On 49% of occasions the child was presented to a medication dispensary and 1% to a traditional healer. 78% were on medication before admission, 51% of these prescribed by a local health worker, 20% by a medicine dispenser and 20% was the parent's decision. 32% had previously had "false tooth extraction", a practice of cutting gums to alleviate fever and 20% scarification of the chest aimed at alleviating breathing difficulties. 94% were fully immunised and only one parent could think of any possible negative effects of immunisation.

Conclusions: Medicine dispensers generally have little or no medical training, and a lower priority is given to the training of clinical officers than to doctors, yet it is these people who are the first point of contact when children are unwell. Although parents were unwilling to admit to the use of traditional healers, the use of traditional practices of cutting skin and gums was common. However, immunisation coverage was high and there is a general positive opinion of immunisation

Theme 4: 'Task-shifting'

1. Phlebotomy training for patient attendants at Queen Elizabeth Hospital, Blantyre, Malawi. Dr Victoria Walker

Background: Great emphasis is placed on building human resource capacity within African healthcare systems. Any attempt to reallocate tasks from scarce professional staff to healthcare assistants is valuable. In the Queen Elizabeth Central Hospital, the major government teaching hospital, phlebotomy is the responsibility of nurses who each care for 50 or more patients. A 3-week phlebotomy teaching package was delivered in April 2008 as part of the ongoing health link.

Aim: To adapt an existing (UK) phlebotomy training course to teach patient attendants to undertake venepuncture and capillary sampling safely. Five Malawi healthcare staff were identified as facilitators to help on the course. They could then deliver the course as trainers, enabling the phlebotomy teaching to be self-sustaining.

Methods: A DVD-based training package, donated by the National Association of Phlebotomists, was used for the dedicated theory sessions. This was followed by practical training with training arms/pads then patients. All resources including black training arms were provided by the UK partnership. 25 participants were identified from the patient attendant cadre of staff, from the departments of medicine, surgery, obstetrics and paediatrics. They are non-professional with only the Junior Certificate of Education (basic English reading and writing, basic numeracy). As part of a larger evaluation project, participants of the phlebotomy course and those staff trained as trainers were interviewed 6 months after the intervention.

Results: All participants successfully completed the course (attendance plus 10 successful venepunctures) and 6 months later all are practising venepuncture regularly. They feel they have an enhanced job role, which in turn improves their motivation and their enthusiasm to learn other new skills. The ward nurses also commented that phlebotomy performed by the patient attendants releases them to undertake more skilled nursing tasks. The next course (December 2008) will be run by the local facilitators, with the aim of eventually giving venepuncture expertise to all the patient attenders in the hospital.

Conclusions: Problem solving and adaptability has been key in making this project a success. This intervention as part of a bigger partnership has shown an immediate and long-term positive impact for the healthcare staff involved and by inference the patients they are caring for.

2. 'Task-shifting' to reduce neonatal mortality in a tertiary referral hospital in a developing country. Dr Hannah Blencowe

Background: Each year, four million neonates die worldwide, constituting 38% of all under-5 child mortality. There is a growing need for effective, inpatient-focused interventions: increasing numbers of deliveries take place in a health facility and up to 45% of neonatal mortality occurs in the first 24 h of life (before the usual time of discharge). In many developing countries, staff shortages are a major constraint to the delivery of high quality care. Addressing this problem, we explore whether good clinical outcomes can be maintained when defined tasks are "shifted" from doctors to others in the healthcare team.

Methods: Inpatient neonatal care was previously doctor led. In 2003, the following changes were introduced: (1) nursing auxiliary-led Kangaroo Care for low birthweight (<2.5 kg) infants; (2) mother-led "rooming in" on the postnatal ward for stable term babies requiring ongoing treatment and follow-up; (3) nurse-led protocols for inpatient care. Routinely collected outcome data on all admissions during a 3-month period in 2003 were compared with an equivalent period in 2008.

Results: Overall inpatient mortality was significantly lower in 2008 than in 2003: 124/806 (15.4%) versus 167/732 (22.8%), $p = 0.0002$ (see fig). Mortality was also lower in each weight group in 2008 compared with 2003. This was significant in infants 1000-1500 g ($p = 0.002$) and infants over 2500 g ($p = 0.017$).

Theme 6: Training doctors in basic laboratory skills

Embedding side-ward laboratory teaching and quality assurance in medical student and junior doctor training Ibadan, Nigeria. Professor Olugbemiro Sodeinde

Medical school curricula and the full registration requirements of the Medical and Dental Council of Nigeria stipulate competencies in side-ward laboratory usage. Due to dwindling resources, innovative approaches were introduced to maintain adequate provisions for necessary training, particularly microscopy of thick and thin blood films. This procedure is a standard requirement in febrile children. Medical students and house physicians (HP) were required to make, stain and report on duplicate copies of such blood films, send the other copy to the Paediatric Research Laboratory and compare the latter report with their own. Malaria parasites, if found, were counted against 200 or more white blood cells (WBC; thick films).

Laboratory staffing needs were met by two trained laboratory technologists supported by technology students whose 4-6 months industrial attachments (SIWES) are paid for centrally by the government. High performers were invited to spend their mandatory one-year industrial training preparatory to the higher diploma with us. For quality assurance, 10% of slides each day were randomly examined by a consultant, against the laboratory report produced. Also, 1 ml blood showing severe abnormalities (eg, disseminated intravascular coagulopathy (DIC), hyperparasitaemia) was diluted step-wise, 1-in-10, up to 10 times with compatible normal blood and blood films made from these dilutions. At various time points, the results produced by trainees on these standardised films, compared with those from the trainers, was a tool for both internal quality assurance and for measuring trainees' progress. From 2003 to 2008, 7500 blood films (average)/year were processed and 89 SIWES students hosted. Of these, seven came back for their one-year training. Among 63 HP, the training targets set were met by 58 in week 1 (making good Giemsa-stained blood films); 55 in week 2 (recognition of malaria parasites, sickle, target, burr red blood cells (RBC), "toxic" or increased WBC, ie, >2 WBC/1000 RBC, scanty platelets); 36 in week 3 (producing reliable malaria parasite counts, ie, ±10% of trainers' counts); 41 in week 4 (same target as week 3). HP have been able to make timely requests for platelet infusions in DIC even before obtaining laboratory reports. Among SIWES, these targets were reached approximately half as often as among HP. Medical student postings were too short for proper evaluation of the weeks 1 and 2 competences set for them. The 50 Naira (£0.20) fee/test covers consumables, thus assuring long-term

Theme 7: Emergency treatment and triage (ETAT)

RCPCH Guest lecture: Focus on East Africa. David Baum International Foundation supported ETAT programme, Kenya

Joint presentation by: Grace Irimu, Department of Paediatrics and Child Health, University of Nairobi, Kenya and Thomas Ngwiri, Paediatrician/Endocrinologist, Embu Hospital, Kenya

On behalf of colleagues in the Ministry of Health, University of Nairobi and KEMRI Wellcome Trust

The under-5 mortality rate in most developing countries remains high yet many deaths could be averted if available knowledge was put into practice. For seriously ill children in hospital investigations in low-income countries commonly demonstrate incorrect diagnosis and treatment and frequent prescribing errors. Most of these deaths occur in the first 48 hours of admission. Any intervention to reduce the mortality must therefore target the emergency triage assessment and treatment plus the initial admission care (ETAT+). To help improve hospital management of the major causes of inpatient childhood mortality we developed simple clinical practice guidelines (CPGs) for use in Kenya, a low-income setting. These guidelines were adapted from existing WHO materials by participatory process. To facilitate dissemination and implementation of the guidelines we developed a 5.5 days training programme. We attempted to base our training on modern theories around adult learning and deliberately attempted to train a 'critical mass' of health workers within each institution at low cost. Our experience suggests that with sustained effort it is possible to develop locally owned, appropriate clinical practice guidelines for emergency and initial hospital care for seriously ill children with involvement of pertinent stake holders throughout. To ensure sustainability of such innovation it is fundamental to incorporate the training in the pre-service training and the medical teaching institutions. We hereby describe the progress in pre-service and in-service ETAT+ training in public institutions in Kenya. To our knowledge the process described in Kenya is among a handful of attempts globally to implement inpatient or referral care components of WHO / UNICEF's Integrated Management of Childhood Illness approach. However, whether guideline dissemination and implementation result in improved quality of care in our environment remains to be seen.