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A MODEL FOR RSV PROPHYLAXIS IN AN URBAN INNER CITY HOSPITAL.

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BACKGROUND: Palivizumab, a monoclonal antibody against Respiratory Syncytial Virus (RSV), is effective in decreasing RSV related hospitalizations in preterm infants. However, ensuring that infants receive their desired monthly injections remains a challenge. In an urban inner city population, home health visits to administer the monthly injections are complicated by the fact that many families either do not have a phone or frequently change their residence. In some cases there is significant delay involved in getting authorization from Medicaid health maintenance organizations to have home visits. **OBJECTIVE:** To determine the compliance with RSV prophylaxis in a high risk urban inner city population by incorporating it as a part of health maintenance visits in the high risk follow-up clinic. **DESIGN/METHODS:** Medical records were reviewed for the number of doses of palivizumab administered, incidence and number of hospitalizations for RSV related illness in a cohort of infants during the RSV season from November 2004 to April 2005 at Sinai Children's Hospital. All infants discharged from the neonatal intensive care unit (NICU) are followed up in a high risk clinic. This clinic offers comprehensive medical care for the high risk children including health maintenance visits. Palivizumab (15mg/kg) was given as monthly injections to qualifying infants (guidelines from American Academy of Pediatrics) at this high risk follow-up clinic. Neonates discharged during the RSV season received their first injection prior to discharge from the NICU. **RESULTS:** During the study period, 72 infants qualified for palivizumab administration. The mean birth weight was 1620 grams (range 560-3490) and the mean gestational age was 31.1 weeks (range 24-39). 46 infants (63.7%) got all the recommended doses and 20 infants (26.3%) got 80% of the recommended doses. Only 6 infants (9%) received fewer than 80% of the recommended doses. During the study period there were two documented RSV infections and one of the infants was hospitalized. This infant required oxygen by nasal cannula and albuterol nebulization only. **CONCLUSIONS**: This model of administration of palivizumab resulted in 91% of infants receiving >80% of the recommended doses. Hence this model is a viable alternate to the home health model to administer palivizumab in an inner city population.

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EVALUATION OF CORRELATION BETWEEN THE QUANTITATIVE BONE ULTRASOUND AND SERUM ALKALINE PHOSPHATASE, AND BONE SPECIFIC ALKALINE PHOSPHATASE IN VERY LOW BIRTH WEIGHT INFANTS AT RISK FOR OSTEOPENIA OF PREMATURITY.

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Background: Osteopenia of prematurity (OOP) is a common problem in extremely low birth weight (ELBW) infants. Early detection of poor bone mineralization is essential to minimize continued bone loss, optimize mineral intake and adjust therapies to prevent fractures. Serum indices of total alkaline phosphatase (AP), bone specific alkaline phosphatase (BsAP), calcium (Ca) and phosphorus (P) are often used as clinical markers in the diagnosis of osteopenia in this population. These indices, however, do not provide a specific measure of bone status. Radiographic methods of bone mineral assessment involve high cumulative radiation doses and logistical complexities making their routine use impractical in this fragile population. Quantitative bone ultrasound (QUS) is done using portable equipment which measures the speed of sound (SOS) conducted through bone tissue and does not involve radiation exposure. In addition, QUS measurements reflect not only bone mineral content, but also bone strength and elasticity, giving a more complete evaluation of bone status. **Primary Objective:** To examine the correlation between QUS measurements and serum AP, BsAP, Ca and P in very low birth weight infants. **Methods:** Eligible infants included all infants in our NICU with birth weight $\leq$ 1250 Gms considered at-risk for OOP. Baseline and weekly serum Ca, P, AP and BsAP were monitored for the first 4 weeks of life. QUS measurements were performed at 1 month of age and reported as a standardized score (z-score) and SOS. A Pearson correlation matrix was used to examine the relationship between serum and QUS measurements. **Results/Conclusions:** Preliminary analysis on 11 infants reveals no relationship between the traditional serum indices of OOP and QUS (AP; $r=0.08$, BsAP; $r=0.02$, $p \leq 0.0001$). Data collection is ongoing until a total of 50 infants are enrolled. Further data will help to evaluate the relationship between QUS and serum indices of OOP, and the potential utility of QUS in evaluating OOP in the NICU setting.

Anticipated number of subjects available for analyses by time of presentation; 20.

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PU.1 EXPRESSION DELINEATES HETEROGENEITY IN PRIMARY TH2 CELLS

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Primary T helper 2 cells are heterogeneous in nature, expressing subsets of cytokines at varying levels. Mechanisms controlling this spectrum of phenotype are still unclear. The ETS-family transcription factor PU.1 is a critical regulator in hematopoiesis. PU.1-null mice are either embryonic or neonatal lethal, and all result in defective lymphoid and myeloid lineage development. We identified selective expression of PU.1 in Th2 but not Th1 subsets. Th2 cytokine production is decreased in cultures transduced with a PU.1 expressing retrovirus and increased in Th2 cells expressing a short hairpin RNA that decreases PU.1 expression. In primary cultures, PU.1 expression is restricted to a subpopulation of Th2 cells that express CCL22 but decreased level of other Th2 cytokines. We also defined that the PU.1 transactivation and PEST domains are not required for regulating Th2 cytokine production. PU.1 appears to regulate the Th2 phenotype by antagonizing GATA-3 function by interfering with GATA-3 DNA binding both in vitro and in vivo without altering protein levels. Expression of PU.1 in Th2 cells alters cytokine production and may contribute towards establishing the spectrum of cytokine production observed in Th2 populations. These findings will be important in understanding the development of Th2-mediated diseases such as asthma and atopic dermatitis.

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RESIDENT RUN RADIO SHOW DELIVERS HEALTH INFORMATION TO DISPERSED LATINO COMMUNITY.

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Background: A 1 hour Spanish radio show was developed by residents and faculty. Community assessment of a disperse Latino community revealed a need for health education and information on community resources. The radio show provides health information, identifies community resources and takes calls. **Methods:** A convenience sample of Latino families were interviewed annually at a community event. Baseline information was gathered in 2003 ($n=35$) with 2 follow up surveys regarding access to information about children and community resources and recognition of the radio show ($n=45$, $n=48$). Zip codes of callers to the show were tallied, mapped and overlaid upon Hispanic 2000 census population using a Geographic Information System. **Results/Impact:** 8.6% answered that it is very difficult to access this information, 45.3% difficult, 46.1%answered that it is easy. 51.1% had listened to the show. Of these, 75% liked information given about their children's health, 25% access to pediatricians and 23% information on community resources (multiple responses). Of those who heard the show, 36% have used resources given during the radio show. Calls come from disperse high density Latino census tracts. **Conclusion:** A Midwest Latino community voiced a need for health education and information on community resources. This disperse community uses mass media to obtain information about their children's health and community resources. A resident service learning project using radio overcomes known barriers such as transportation, child care and language to obtaining health information.

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STUDENT LEARNING THROUGH THE DEVELOPMENT OF COMPREHENSIVE DISEASE-SPECIFIC WEB RESOURCES FOR PEDIATRIC ONCOLOGY.

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OBJECTIVES: To combine the need of patients and their families for comprehensive disease-specific web resources with a unique learning experience for medical students. **DESCRIPTION:** The internet has become an important primary and secondary source of medical information for parents of children with cancer. Although many web resources exist for pediatric cancer, very few provide relevant details concerning the diagnosis, treatment options, available clinical trials, social support, long-term follow up care, other available web resources, or research conducted on a particular pediatric cancer. By having medical students develop these web sites, the creation of these web resources can be combined with a unique education experience for medical students. This process enables students to learn how to search for, evaluate quality and synthesize medical information, to think about the information from a patient's perspective, and to work with a team of medical professionals, communication specialists and web designers. Thus, medical students can learn not only about the disease itself but also how to improve communication with patients and their families. Although the creation of web resources is integrated into some medical school curricula, the products are only produced for a grade and not released for public use. For this project, comprehensive web resources were created by the students for osteosarcoma and for renal tumors. Students were provided with articles on how to write patient materials and they evaluated other web resources. After the students researched the disease, they discussed their findings with attending physicians and then translated the information into lay language. Working with a communication specialist and a web designer, the students organized the information into an easy to use format for parents, created the template, and uploaded the text and images to the Indiana University Cancer Center website (http://cancer.iu.edu/osteosarcoma//, http://cancer.iu.edu/renaltumors //). **CONCLUSION:** Creating much needed comprehensive web resources provides an invaluable resource for parents of children with cancer and a unique learning experience for medical students. The next goal is to involve medical students in the development of tools to evaluate these web resources. This evaluation will measure and analyze the usage of the web resources by analyzing website use statistics, asking for online user feedback, administering more in-depth web-based surveys, and working with parents and patients at the Cancer Center at Riley Hospital.

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AN INTEGRATED INFORMATION SYSTEM: A RESOURCE FOR PEDIATRIC TISSUE BANKING, CLINICAL AND EXPERIMENTAL DATA ANNOTATION AND ANALYSIS.

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BACKGROUND: Our knowledge of childhood diseases has been greatly expanded by research on biologic specimens. Clinical researchers commonly collect multiple specimens per patient and use genomics and proteomics to study disease processes and to predict the response to treatment. The ability of such studies to generate meaningful results is dependent on a well–annotated biospecimen repository, which combines pathology data and experimental data from high throughput technologies and structured clinical data. We present the architecture and approach of an evolving information service at Indiana University for specimen collections with clinical and research data annotations. The services to be provided include: specimen inventory, clinical data annotations, experimental data annotations, analysis toolbox and data visualization **APPROACH:** A virtual specimen inventory was created for tracking specimens based on the National Cancer Institute's Cancer Bioinformatics Grid's (CaBIG) Tissue Banking and Pathology Taskforce's tool for specimen storage and distribution, CaTISSUE. Clinical data annotations are to be done through customized data entry forms. Customized data entry forms for pediatric oncology based on the College of American Pathology (CAP) cancer protocols are to be created and linked to SNOMED and LOINC concept codes suitable for standard data interchange. Additional clinical data from the Regenstrief Medical Records System can also be used through the applications generated for the Shared Pathology Information Network. The experimental data annotation currently consists of gene expression data and proteomics mass spectroscopy data. The analysis toolbox consists of commonly used algorithms hosted on a scalable computing server platform. All analysis workflows are catalogued and are available for reuse for future research projects. Temporal and multidimensional visualization tools allow clinicians to better explore and understand large datasets. This standardized information system can be expanded to a campus wide or inter-campus resource. **CONCLUSION:** An integrated specimen information system can greatly enhance our ability to identify key factors leading to childhood diseases by using powerful computational and visualization tools for co-analyses of high throughput data with clinical data. This standardized system will facilitate intra- and inter-campus collaboration, data sharing, and the gain of greater knowledge.