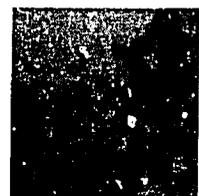
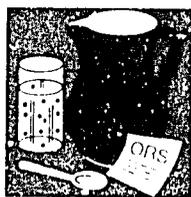
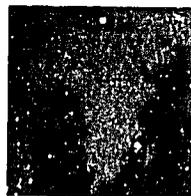


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PRITECH

Technologies for Primary Health Care

**CONTROL OF DIARRHEAL
DISEASES: AN ANNOTATED
BIBLIOGRAPHY OF PRITECH
HOLDINGS, 1991**



MANAGEMENT SCIENCES FOR HEALTH
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PN-ABK-490

**CONTROL OF DIARRHEAL DISEASES: AN
ANNOTATED BIBLIOGRAPHY OF PRITECH
HOLDINGS, 1991**

Edited by: Anita Sherman and Karen White

December 1991

**The PRITECH Project
Management Sciences for Health
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INTRODUCTION

PRITECH, the Technologies for Primary Health Care Project sponsored by the U.S. Agency for International Development, is a consortium of experienced, internationally known organizations led by Management Sciences for Health which assists developing countries in implementing national diarrheal disease control programs.

The PRITECH Information Center has developed a bibliographic data base which covers the topics of diarrheal disease, ORT and related Primary Health Care issues. The annotated bibliography which is presented here was drawn from the data base and reflects the most recent additions to the Center's current collection of 5000 documents.

The bibliographic listings are organized by general subject category. The citations are arranged alphabetically by author within each category. In cases where no author information is available, the citations are listed alphabetically by title.

The PRITECH Information Center will, whenever possible, provide copies of requested materials or refer requests to the document issuing organizations. All of the listings presented in this bibliography are accompanied by an accession number, which should be referred to in all requests for documents from the Information Center.

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DIARRHEAL DISEASE RESEARCH AND EPIDEMIOLOGY

- 4106 Acha Arrieta, V.; Otero Revuelta, J.A.; Casas Fernandez de Tejerina, J.M. DIARRREA AGUDA. ASISTENCIA EN UN HOSPITAL GENERAL. Revista Clinica Espanola, vol.187 no.1, June 1990, pp.67-68, letter.

In this letter to the editor, the authors comment on the rising incidence of diarrhea in Spain due to public ignorance about diarrheal diseases. They state that there is a need for more public health education in order to alleviate the problem.

- 4449 Aiyar, J.; Bhan, M.K.; Bhandari, N. et al. ROTAVIRUS-SPECIFIC ANTIBODY RESPONSE IN SALIVA OF INFANTS WITH ROTAVIRUS DIARRHEA. Journal of Infectious Diseases, vol.162, 1990, pp.1383-1384.

The reliability of saliva as an indicator of rotavirus infection was assessed [in India] among 15 infants (3-12 months) with rotaviral and 15 with nonrotaviral diarrhea...It seems that infants with rotaviral diarrhea mount mucosal antibody responses as reflected in their saliva; possibly salivary antibodies could be used to evaluate vaccine "take" in rotavirus vaccine trials. [published abstract]

- 4544 Al-Abbad, A.A.; Bella, H. DIARRHOEA IN THE UNDER-FIVES IN A SAUDI SEMIURBAN COMMUNITY. Tropical and Geographical Medicine, vol.42, 1990, pp.233-237.

A cross-sectional study of diarrhoea in the under-fives was carried out in a semiurban community in the Eastern Province of Saudi Arabia...The point and period prevalence of diarrhoea were found to be 5.4% and 12.5% respectively. The presence of diarrhoea was significantly associated with the age of the child and the type of feeding in children below one year. Factors such as parental age and education and the number of children under five in the household were also found to be significantly associated with diarrhoea. [published abstract]

- 3771 Alabi, S.A.; Odugbemi, T. OCCURRENCE OF AEROMONAS SPECIES AND PLESIOMONAS SHIGELLOIDES IN PATIENTS WITH AND WITHOUT DIARRHOEA IN LAGOS, NIGERIA. Journal of Medical Microbiology, vol.32, 1990, pp.45-48.

In this paper the authors report on the prevalence of

Aeromonas spp. and *Plesiomonas shigelloides* in patients attending the Lagos University Teaching Hospital in Nigeria from October 1986 to September 1987. Of the 2350 fecal specimens taken from diarrheal patients, *Aeromonas* spp. was isolated from 53 and *P. shigelloides* from 16. The authors conclude that both agents may be significant in the etiology of acute diarrheal disease in the Lagos area.

- 4857 Albert, M.J.; Alam, K.; Islam, M. et al. HAFNIA-ALVEI, A PROBABLE CAUSE OF DIARRHEA IN HUMANS. *Infection and Immunity*, vol.59 no.4, April 1991, pp.1507-1513.

Hafnia alvei, a member of the family Enterobacteriaceae, was the only species of bacteria cultured from the stool of a 9-month-old child admitted to the Clinical Research Centre of the ICDDR,B with a 3-day history of watery diarrhea. It is concluded that at least some strains of *H. alvei* have the potential to cause diarrhea and that attachment-effacement is a virulence characteristic shared by bacteria other than *E. coli*.

- 4726 Ascher, D.P.; Edusada-Corpus, R. CLINICAL AND LABORATORY PREDICTORS OF BACTERIAL DIARRHEA IN A TROPICAL ENVIRONMENT. *Military Medicine*, vol.156, February 1991, pp.74-76.

In the Philippines 180 American children with diarrhea were evaluated to determine if an assessment technique for bacterial diarrhea could be applied to American children living in the tropics. The technique is based on three factors: abrupt onset of diarrhea, more than four stools per day, and no vomiting prior to onset. Results indicated that patients with the three factors and who were positive for fecal leukocytes had an 83% probability of having a positive bacterial stool culture compared to only a 5% probability if any one of the factors was absent.

- 4624 Ashkenazi, S.; Pickering, L.K. NEW CAUSES OF INFECTIOUS DIARRHEA. *European Journal of Clinical Microbiology and Infectious Diseases*, vol.10 no.1, January 1991, pp.1-3.

The past decade has witnessed a proliferation of reports on newly recognized causes of infectious diarrhea. Clinicians are faced with this increasing list of enteropathogens and the associated problems of what agents should be sought in patients with diarrhea and against what agents empiric therapy should be aimed. This report examines these issues and attempts to put into context the importance of the agents and their clinical relevance.

- 3830 Baudry, B.; Savarino, S.J.; Vial, P. et al. A SENSITIVE AND SPECIFIC DNA PROBE TO IDENTIFY ENTEROAGGREGATIVE ESCHERICHIA COLI, A RECENTLY DISCOVERED DIARRHEAL PATHOGEN. *Journal of Infectious Diseases*, vol.161, 1990, pp.1249-1251.

[The authors] describe the isolation and cloning of a 1-kilobase fragment from the plasmid of EA_gEC [enteroaggregative E. coli] strain 17-2...This probe is 89% sensitive and 99% specific for EA_gEC identification. Thus, this probe should greatly facilitate epidemiologic studies assessing the importance of EA_gEC as a diarrheal pathogen. [published abstract]

- 4560 Bell, G.D. ANTI-HELICOBACTER PYLORI THERAPY: CLEARANCE, ELIMINATION, OR ERADICATION? *The Lancet*, vol.337 no.8736, February 2, 1991, pp.310-311, letter.

The author of this letter to the editor comments on classification of test results for eradication of *Helicobacter pylori*. He states that test results obtained more than 24 hours and less than 4 weeks after treatment is stopped should not be defined as clearance nor as eradication because the pathogen can be suppressed to undetectable levels and then resurface again.

- 3971 Binder, H.J. PATHOPHYSIOLOGY OF ACUTE DIARRHEA. *American Journal of Medicine*, vol.88 suppl.6A, June 20, 1990, pp.6A-2S-6A-4S.

This article discusses the pathophysiology of diarrhea, including mechanisms of diarrhea and mechanisms of action of anti-diarrheal agents.

- 4130 Borczyk, A.A.; Harnett, N.; Lombos, M. et al. FALSE-POSITIVE IDENTIFICATION OF ESCHERICHIA COLI 0157 BY COMMERCIAL LATEX AGGLUTINATION TESTS. *The Lancet*, vol.336 no.8720, October 13, 1990, pp.946-947, letter.

In this letter to the editor, the authors describe false-positive identifications of E. coli 0157 when using commercial latex agglutination tests for diagnosis.

- 4617 Briscoe, J.; Adair, L.S.; Akin, J.S. et al. UNDERLYING AND PROXIMATE DETERMINANTS OF CHILD HEALTH: THE CEBU LONGITUDINAL HEALTH AND NUTRITION STUDY. *American Journal of Epidemiology*, vol.133 no.2, 1991, pp.185-201.

This paper describes the methodology used in modeling child

health in a study of over 3000 children in Cebu, Philippines. The method used was an integrated socioeconomic-biomedical model, which took into account the effects of the underlying social factors and proximate behavioral and biomedical factors on infant morbidity, growth, and mortality. The application of the methodology is illustrated by modeling childhood diarrhea, and by showing how maternal education induces behavioral changes. It also suggests how these changes, in turn, induce changes in the prevalence of childhood diarrhea.

- 3931 Brownlee, H.J. INTRODUCTION: MANAGEMENT OF ACUTE NONSPECIFIC DIARRHEA. American Journal of Medicine, vol.88 suppl.6A, June 20, 1990, pp.6A-1S.

The author reviews the extent to which adults and children suffer from diarrhea in the U.S., especially in terms of lost productivity. He then introduces the articles appearing in the June 20, 1990 issue of the American Journal of Medicine, which were originally presented at a symposium called Management of Acute Nonspecific Diarrhea.

- 4545 Bukenya, G.B.; Nwokolo, N. TRANSIENT RISK FACTORS FOR ACUTE CHILDHOOD DIARRHOEA IN AN URBAN COMMUNITY IN PAPUA NEW GUINEA. Transactions of the Royal Society of Tropical Medicine and Hygiene, vol.84, 1990, pp.857-860.

In Port Moresby, Papua New Guinea, 479 children under 5 years of age were monitored to assess the role of transient risk factors in the etiology of acute diarrhea. The identified risk factors included 1) eating food that had been kept for more than 12 hours; 2) eating away from home; 3) temporary absence of mother from home for more than one day; and 4) the presence of respiratory infection in the child. The authors conclude that such factors need to be addressed if effective diarrhea control is to be achieved.

- 4583 Butler, T.; Islam, A.; Kabir, I. et al. PATTERNS OF MORBIDITY AND MORTALITY IN TYPHOID FEVER DEPENDENT ON AGE AND GENDER: REVIEW OF 552 HOSPITALIZED PATIENTS WITH DIARRHEA. Reviews of Infectious Diseases, vol.13, 1991, pp.85-90.

A study of 552 typhoid culture positive patients with diarrhea at a Bangladeshi hospital was conducted to correlate features of typhoid fever with age and gender. Results indicated that the patients at the highest risk of complications and death were children from birth through one year of age and adults who were 31 years old or older. In

addition, females had a higher case fatality rate than males.

- 44522 **CAMPYLOBACTER ENTERITIS -- NEW ZEALAND, 1990.** Morbidity and Mortality Weekly Report, vol.40 no.7, February 22, 1991, pp.116+.

This article reports on an investigation of a Campylobacter enteritis outbreak which occurred at a camp near Christchurch, New Zealand. Drinking untreated water was identified as the cause of the outbreak. Control efforts included installing a water treatment system and implementing a surveillance system to monitor illness.

- 4458 **Carlier, C.; Moulia-Pelat, J.-P.; Ceccon, J.-F. et al. PREVALENCE OF MALNUTRITION AND VITAMIN A DEFICIENCY IN THE DIOURBEL, FATICK, AND KAOLACK REGIONS OF SENEGAL: FEASIBILITY OF THE METHOD OF IMPRESSION CYTOLOGY WITH TRANSFER.** American Journal of Clinical Nutrition, vol.53, 1991, pp.66-69.

The feasibility of the method of impression cytology with transfer (ICT) was assessed during a study of the prevalence of ophthalmological diseases and vitamin A deficiency in Senegalese children. The authors conclude that ICT could be very useful for detecting vitamin A deficiency in children in underdeveloped areas.

- 4459 **Carlier, C.; Moulia-Pelat, J.-P.; Ceccon, J.-F. et al. PREVALENCE OF MALNUTRITION AND VITAMIN A DEFICIENCY IN THE DIOURBEL, FATICK, AND KAOLACK REGIONS OF SENEGAL: A CONTROLLED STUDY.** American Journal of Clinical Nutrition, vol.53, 1991, pp.74-77.

A study of 206 Senegalese preschool children was conducted to assess their nutritional status as well as to determine the diagnostic values of the impression cytology with transfer (ICT) method. Results showed that a problem of protein-calorie malnutrition associated with vitamin A deficiency exists in Senegal. The sensitivity and specificity of the ICT varied with the classification criteria of ICT and seemed to be fairly insensitive but specific.

- 44557 **Chart, H.; Rowe, B.; Kar, N.V.D. et al. SEROLOGICAL IDENTIFICATION OF ESCHERICHIA COLI 0157 AS CAUSE OF HAEMOLYTIC URAEMIC SYNDROME IN NETHERLANDS.** The Lancet, vol.337 no.8738, February 16, 1991, p.437, letter.

In this letter to the editor the authors discuss a serological test, based on O-antigen antibody detection, which permits screening for E. coli 0157 infection.

- 4187 Chatterjee, S.N. SOME ASPECTS OF CHOLERA RESEARCH. Current Science, vol.59 nos.13 and 14, July 25, 1990, pp.677-687.

In this article the author provides an overview of cholera research with emphasis on characterization of cholera vibrios and treatment of the disease with antimicrobials.

- 4548 Cheng-Rong, Y.; Zong-Da, M.; Xin, W. et al. DIARRHOEA SURVEILLANCE IN CHILDREN AGED UNDER 5 YEARS IN A RURAL AREA OF HEBEI PROVINCE, CHINA. Journal of Diarrhoeal Diseases Research, vol.8 no.4, December 1990, pp.155-159.

A study was carried out from March 1986 to February 1987 in Hebei Province, China, to examine diarrheal morbidity in children under five years. Results indicated that approximately 80.74% of children had one or more attacks during the study period and that children under three were more susceptible to getting diarrhea than older ones. In addition, diarrheal incidence was greatest during the summer months of June, July, and August.

- 4551 CHOLERA -- PERU, 1991. Morbidity and Mortality Weekly Report, vol.40 no.6, February 15, 1991, pp.108-110.

This article briefly reports on the current cholera epidemic in Peru which has hospitalized 1859 persons and caused 66 deaths to date. Preventive measures recommended by the Peru MOH include exclusive use of boiled drinking water, careful cleaning of fruits and vegetables, and avoiding raw or inadequately cooked fish or seafood.

- 3812 CHOLERA--WORLDWIDE, 1989. Morbidity and Mortality Weekly Report, vol.39 no.21, June 1, 1990, pp.365-367.

This article presents statistics on the incidence of cholera worldwide in 1989. Statistics indicate that the total number of cases as well as the number of countries reporting the disease increased in 1989.

- 4457 Chongsa-nguan, M.; Chaicumpa, W.; Ruankunaporn, Y. et al. IMMUNOGENICITY OF TWO FORMULATIONS OF ORAL CHOLERA VACCINES IN THAI VOLUNTEERS. Vaccine, vol.9, January 1991, pp.53-59.

A formulation of oral vaccine consisting of *Vibrio cholerae* lipopolysaccharides (LPS), cell-bound haemagglutinin (CHA) and procholeraenoid (P), namely vaccine A, was compared with another formulation, vaccine B, prepared from killed whole vibrios plus procholeraenoid on their immunogenicity and reactogenicity in Thai male volunteers...The vaccine A conferred higher rates of intestinal anti-*V. cholerae* classical LPS, anti-CHA and anti-CT than those of the vaccine B. Both vaccine formulations had equal immunogenicity concerning anti-*V. cholerae* El Tor LPS response. [published abstract]

- 4613 Chowdhury, H.R.; Fauveau, V.; Yunus, M. IS ACUTE WATERY DIARRHOEA AN IMPORTANT CAUSE OF MORBIDITY AND MORTALITY AMONG RURAL BANGLADESHI CHILDREN? Transactions of the Royal Society of Tropical Medicine and Hygiene, vol.85, 1991, pp.128-130.

The authors of this study assessed the relative importance of acute watery diarrhea (AWD) and other types of acute diarrhea in two different age groups of children under five years old in rural Bangladesh. Results indicated that in infants AWD was more important in terms of prevalence, hospital admission and mortality than other types of diarrheas. However, AWD seemed to be relatively less important in children 1-4 years old, thus suggesting that the potential of ORT to reduce mortality in this age group may be limited. The authors suggest that in order to reduce morbidity and mortality in the 1-4 age group, CDD programs should place more emphasis on the field management of non-watery, non-dehydrating diarrheas.

- 4828 Clark, H.F.; Borian, F.E.; Plotkin, S.A. IMMUNE PROTECTION OF INFANTS AGAINST ROTAVIRUS GASTROENTERITIS BY A SEROTYPE 1 REASSORTANT OF BOVINE ROTAVIRUS WC3. Journal of Infectious Diseases, vol.161, 1990, pp.1099-1104.

The safety and protective efficacy of a serotype 1 reassortant of bovine rotavirus WC3, designated strain WI79-9, was evaluated in a double-blind placebo-controlled trial [in Philadelphia]...Infants 2-11 months of age were given two doses of vaccine...or of placebo 28 days apart. Adverse reactions to the vaccine were not detected...Although vaccination with WI79-9 affected only the incidence of rotavirus gastroenteritis, the vaccinated infants exhibited a significantly reduced incidence of total days of diarrhea, fever, and illness associated with gastroenteritis in general. [published abstract]

- 4778 Clemens, J.D.; Van Loon, F.; Sack, D.A. et al. BIOTYPE AS DETERMINANT OF NATURAL IMMUNISING EFFECT OF CHOLERA. The Lancet, vol.337 no.8746, April 13, 1991, pp.883-884.

During a recent field trial of killed oral cholera vaccines in rural Bangladesh, the protective association between naturally occurring clinical cholera and risk of recurrence was also evaluated. The findings showed that cholera incidence was 61% lower in persons who had had an earlier episode than in those without such an episode. Whereas initial episodes of classical cholera were associated with complete protection against subsequent episodes, initial episodes of El Tor cholera were associated with insignificant protection.

- 4195 Clemens, J.D.; Sack, D.A.; Chakraborty, J. et al. FIELD TRIAL OF ORAL CHOLERA VACCINES IN BANGLADESH: EVALUATION OF ANTI-BACTERIAL AND ANTI-TOXIC BREAST-MILK IMMUNITY IN RESPONSE TO INGESTION OF THE VACCINES. Vaccine, vol.8, October 1990, pp.469-472.

A field trial with 53 lactating Bangladeshi mothers attempted to determine if oral vaccination of mothers with an effective cholera vaccine would protect their non-vaccinated, breastfed children by increasing the levels of relevant anti-cholera antibodies in ingested breast milk. Results indicated that the vaccine did not significantly increase the levels of breast milk anti-cholera antibodies and thus does not contribute to protecting non-vaccinated children.

- 4549 Colebunders, R.; Nembunzu, M.; Portaels, F. et al. ISOLATION OF MYCOBACTERIA FROM STOOLS AND INTESTINAL BIOPSIES FROM HIV SEROPOSITIVE AND HIV SERONEGATIVE PATIENTS WITH AND WITHOUT DIARRHEA IN KINSHASA, ZAIRE. Annales de la Societe Belge de Medecine Tropicale, vol.70, 1990, pp.303-309.

A study to determine the role of mycobacteria as an etiologic agent in HIV related enteritis was conducted in 1986 at the Mama Yemo Hospital in Kinshasa, Zaire. Mycobacteria isolation rates were slightly lower in HIV seropositive patients than in seronegative patients and significantly lower in patients with diarrhea than in patients without diarrhea. These results suggest that mycobacteria are not a major etiologic agent in HIV related diarrhea.

- 3965 COMMUNITY OUTBREAKS OF SHIGELLOSIS--UNITED STATES. Morbidity and Mortality Weekly Report, vol.39 no.30, August 3, 1990, pp.509-519.

This report describes four community outbreaks of shigellosis in the United States during 1986-1989 in which innovative public health control measures were used. The focus of these measures was extensive health education which emphasized preventive strategies such as thorough hand washing.

- 4290 Cousens, S.N.; Feachem, R.G.; Kirkwood, B.R. et al. CASE-CONTROL STUDIES OF CHILDHOOD DIARRHOEA: IV. CHOICE OF CONTROL GROUP. Geneva, World Health Organization, 1990, 23p.

This paper discusses the advantages and disadvantages of different choices of control group in case-control studies conducted to quantify the effects of risk factors for, and interventions against, childhood diarrhea. A number of studies are reviewed to determine where bias may have occurred through use of an inappropriate control group.

- 4483 Cousens, S.N.; Kirkwood, B.R. OUTCOME MEASURES IN PROSPECTIVE STUDIES OF CHILDHOOD DIARRHOEA AND RESPIRATORY INFECTIONS: CHOOSING AND USING THEM. Geneva, World Health Organization, 1990, 27p.

In this document the authors discuss the choice of appropriate outcome measures when conducting prospective studies of diarrheal and respiratory morbidity. They explain how particular research questions can affect the choice of an outcome measure. They also examine some basic statistical techniques available for analyzing various outcomes. An example using data on diarrheal morbidity is presented.

- 4474 Cryz, S.J.; Levine, M.M.; Kaper, J.B. et al. RANDOMIZED DOUBLE-BLIND PLACEBO CONTROLLED TRIAL TO EVALUATE THE SAFETY AND IMMUNOGENICITY OF THE LIVE ORAL CHOLERA VACCINE STRAIN CVD 103-HGR IN SWISS ADULTS. Vaccine, vol.8, December 1990, pp.577-580.

The authors conducted a randomized, double-blind, placebo-controlled trial of the CVD 103-HgR oral cholera vaccine in 50 healthy adult Swiss volunteers. The results corroborated the safety and immunogenicity of this vaccine in healthy adults as well as indicating that it was well tolerated.

- 4168 Cuenod, B.; Brousse, N.; Goulet, O. et al. CLASSIFICATION OF INTRACTABLE DIARRHEA IN INFANCY USING CLINICAL AND IMMUNOHISTOLOGICAL CRITERIA. *Gastroenterology*, vol.99, 1990, pp.1037-1043.

The authors review a study of 13 children in France with persistent diarrhea and villous atrophy which was conducted to determine the role of activated mucosal T cells in the pathogenesis of intestinal lesions. The results are presented in this article.

- 3902 Dagan, R.; Bar-David, Y.; Sarov, B. et al. ROTAVIRUS DIARRHEA IN JEWISH AND BEDOUIN CHILDREN IN THE NEGEV REGION OF ISRAEL: EPIDEMIOLOGY, CLINICAL ASPECTS AND POSSIBLE ROLE OF MALNUTRITION IN SEVERITY OF ILLNESS. *Pediatric Infectious Disease Journal*, vol.9 no.5, May 1990, pp.314-321.

A one year prospective study of 605 Jewish and Bedouin children in the Negev region of Israel was carried out to determine the epidemiologic and clinical patterns of rotavirus diarrhea. Rotavirus was the most commonly detected pathogen among diarrheal children and the rate of rotavirus detection decreased as age increased. Malnutrition appeared to be an important indicator of disease severity, as malnourished children were more likely to be hospitalized in comparison to controls.

- 4142 Deb, B.C.; Bhattacharya, S.K.; Pal, S.C. EPIDEMIOLOGY OF CHOLERA IN INDIA AND ITS TREATMENT AND CONTROL. *Current Science*, vol.59 nos.13 and 14, July 1990, pp.702-707.

This review article covers the epidemiology of cholera in India and its treatment, including ORT, IV therapy, antibiotics, and home available fluids. It also covers cholera control measures such as isolation of patients, immunization, and sanitation.

- 4794 Denizot, Y.; Chaussade, S.; Benveniste, J. et al. PRESENCE OF PAF-ACETHER IN STOOL OF PATIENTS WITH INFECTIOUS DIARRHEA. *Journal of Infectious Diseases*, vol.163, 1991, p.1168, letter.

In this letter to the editor the authors discuss the presence of an endogenous phospholipid (PAF-acether) in the gastrointestinal tract during infectious diseases, including diarrhea.

- 4798 Deodahr, L.P.; Saraswathi, K.; Varudkar, A. AEROMONAS SPP. AND THEIR ASSOCIATION WITH HUMAN DIARRHEAL DISEASE. *Journal of Clinical Microbiology*, vol.29 no.5, May 1991, pp.853-856.

Between January 1988 and December 1989 various species of *Aeromonas* were isolated from 45 of 2,480 patients with gastroenteritis in India. No other enteric pathogens were found in any of these 45 patients. All the isolated strains, irrespective of species, were enterotoxin and hemolysin positive. The results suggest that *Aeromonas* species are potential enteric pathogens in this region.

- 3997 DEVELOPMENT OF VACCINES AGAINST CHOLERA AND DIARRHOEA DUE TO ENTEROTOXIGENIC *ESCHERICHIA COLI*: MEMORANDUM FROM A WHO MEETING. *Bulletin of the World Health Organization*, vol.68 no.3, 1990, pp.303-312.

This memorandum summarizes current knowledge on the epidemiology of cholera and diarrhoea due to enterotoxigenic *Escherichia coli* (ETEC) and outlines the results of recent research to develop an effective oral vaccine against cholera. The meeting reviewed current research on the protective antigens of ETEC and made a number of recommendations with the aim of stimulating further efforts towards the development of vaccines against disease caused by ETEC. [published abstract]

- 4218 DIARRHOEA MEETING. *Africa Health*, vol.13 no.1, November 1990, p.5.

This news note briefly reports on a recent four-day conference held in Lusaka, Zambia, on diarrheal disease control. Topics discussed include cholera epidemic management, monitoring the quality of diarrhea management, and CDD training in nursing schools.

- 4848 DIARRHOEA MORBIDITY AND CASE MANAGEMENT SURVEY, MOROCCO. *Weekly Epidemiological Record*, vol.66 no.13, March 29, 1991, pp.89-91.

In November 1990, the Morocco CDD Program carried out a national survey of diarrhea incidence and case management in children less than 5. The annual incidence rate was 7.8 diarrheal episodes per child; 11% were cases of persistent diarrhea. ORT was practiced in 13.5% of cases. Of those children who had had diarrhea within the last 24 hours, 22% had received drugs.

- 4177 DISASTER EPIDEMIOLOGY. The Lancet, vol.336 no.8718, October 6, 1990, pp.845-946.

In this editorial, the author discusses the importance of disease surveillance following disasters in order to better organize relief efforts.

- 4703 Donowitz, M. MAGNESIUM-INDUCED DIARRHEA AND NEW INSIGHTS INTO THE PATHOBIOLOGY OF DIARRHEA. New England Journal of Medicine, vol.324 no.15, April 11, 1991, pp.1059-1060.

In this editorial the author comments on the pathophysiology of magnesium-induced diarrhea and on the study by Fine et al which developed a diagnostic test for the condition. He also discusses cases of chronic diarrhea associated with high magnesium levels, particularly in patients who ingested laxatives containing the mineral. He encourages further research about the relationship between laxative use and diarrheal disease.

- 4076 Drashek, C. INDICADORES E INFORMACION SOBRE LAS ENFERMEDADES DIARREICAS -- RESUMEN PARA LA REGION DE LA OMS DE LAS AMERICAS. Washington, D.C., Pan American Health Organization, 1990, 95p.

This document provides baseline data about diarrheal disease in Latin America. The data, presented in the form of charts, tables, and graphs, provide information on: (1) the planning and management of Latin American CDD programs; (2) training of health workers; (3) ORS production and distribution; and (4) CDD indicators such as diarrheal episodes per child per year, ORS use rates, and diarrheal mortality rates. This document contains the full text in both English and Spanish.

- 4217 Evans, J.R. ESSENTIAL NATIONAL HEALTH RESEARCH--A KEY TO EQUITY IN DEVELOPMENT. New England Journal of Medicine, vol.323 no.13, September 27, 1990, pp.914-915.

In their report "Health Research: Essential Link to Equity in Development" (New York; Oxford University Press, 1990), the Commission on Health Research for Development, an independent initiative, makes several recommendations about the relationship of research to health problems in developing countries. These recommendations are summarized in this article. The Commission's main conclusion is that the capacity of developing countries' to conduct research most pertinent to the health of their own citizens must be

increased in order to achieve equity in development.

- 3986 Farthing, M.J.G. STUDIES OF ORAL REHYDRATION SOLUTIONS IN ANIMAL MODELS. *Clinical Therapeutics*, vol.12 suppl.A, 1990, pp.51-62.

This article discusses the development of animal models to examine the value of different ORS formulas. The development of a rotavirus model in rats is described. Finally, the comparability of animal and human models is discussed.

- 4637 Fauveau, V.; Yunus, M.; Zaman, K. et al. DIARRHOEA MORTALITY IN RURAL BANGLADESHI CHILDREN. *Journal of Tropical Pediatrics*, vol.37 no.1, February 1991, pp.31-36.

Diarrheal mortality and hospital admissions for diarrhea are described among children under the age of 5 in a rural Bangladeshi community. Acute watery diarrhea was associated with 5% of deaths among children, while acute non-watery diarrhea was associated with 16%. Persistent diarrhea was associated with 34% of all deaths. These data suggest that exclusive emphasis on ORT will have little impact on diarrhea mortality among children in Bangladesh. A broader strategy, including measles immunization, nutrition education, dietary management of diarrhea, and treatment of dysentery has greater potential.

- 4738 Fenwick, S.G.; Murray, A. DETECTION OF PATHOGENIC YERSINIA ENTEROCOLITICA BY POLYMERASE CHAIN REACTION. *The Lancet*, vol.337 no.8739, February 23, 1991, pp.496-497, letter.

This letter to the editor describes a new polymerase chain reaction test used to detect *Yersinia enterocolitica*.

- 4472 FINAL REPORT: DIARRHOEAL DISEASES HOUSEHOLD CASE MANAGEMENT SURVEY. Kenya, Ministry of Health, February 1990, 12p.+app.

This document presents data from a 1990 household case management survey carried out in six districts in Kenya (Kwale, Kakamega, Kisii, Nakuru, Kisumu, and Kilifi). Among the significant findings was that breastfeeding was generally continued during diarrhea although few caretakers offered more to drink during diarrheal episodes. ORT use rates, including use of packets and home fluids, ranged from 69.4% to 93.0%. Overall results from districts where the

CDD program was more active were more encouraging than results from the other districts. Recommendations based on the findings are also presented.

- 4704 Fine, K.D.; Santa Ana, C.A.; Fordtran, J. DIAGNOSIS OF MAGNESIUM-INDUCED DIARRHEA. *New England Journal of Medicine*, vol.324 no.15, April 11, 1991, pp.1012-1017.

Excessive magnesium levels, often caused by ingesting too many antacids or food supplements, can induce persistent diarrhea. However, there is no specific method to diagnose the condition. Therefore, the purposes of this study were to establish a method to diagnose magnesium-induced diarrhea and to apply it to patients with persistent diarrhea. The findings revealed that quantitative fecal analysis for soluble magnesium is an accurate method for diagnosing this condition and could save chronic diarrhea patients from undergoing expensive, invasive diagnostic tests.

- 4069 Flores, J.; Perez-Schael, I.; Blanco, M. et al. COMPARISON OF REACTOGENICITY AND ANTIGENICITY OF M37 ROTAVIRUS VACCINE AND RHESUS-ROTAVIRUS-BASED QUADRIVALENT VACCINE. *The Lancet*, vol.336 no.8711, August 11, 1990, pp.330-334.

In this study, the authors tested a new rotavirus vaccine candidate, the M37 human strain, which was originally recovered from a symptom-free newborn baby and adapted to grow in tissue of monkey kidney cells.

- 4756 Freund, P.J. RESEARCH ON TRADITIONAL MEDICINE AND DIARRHOEA: DATA COLLECTION -- METHODOLOGICAL TECHNIQUES. Paper presented to workshop on Traditional Medicine, December 20-21, 1990, 4p.+app.

This paper discusses data collection techniques for surveying traditional healers about diarrhea treatment. Types of information needed and special considerations to keep in mind when interviewing healers are outlined. A sample survey questionnaire is included.

- 4682 Fujita, K.; Kaku, M.; Yanagase, Y. et al. PHYSICOCHEMICAL CHARACTERISTICS AND FLORA OF DIARRHOEAL AND RECOVERY FAECES IN CHILDREN WITH ACUTE GASTROENTERITIS IN KENYA. *Annals of Tropical Paediatrics*, vol.10, 1990, pp.339-345.

In order to determine the physicochemical properties and bacterial flora of diarrheal and recovery feces, the authors

examined stool samples from 14 Kenyan children with acute gastroenteritis. Shigella, Campylobacter, enterotoxigenic E. coli, and rotavirus were isolated from samples. Results also indicated that normal anaerobic intestinal flora is remarkably disturbed in patients with gastroenteritis which could result in changes in fatty acid contents and in the pH of diarrheal feces.

- 4612 Gellert, G.; Wagner, G.; Ebling, L.R. RISKS OF CHOLERA IMMUNIZATION AT PORT OF ENTRY. *The Lancet*, vol.337 no.8740, March 2, 1991, p.552.

The authors of this letter to the editor point out that some 25 developing countries persist in requiring cholera immunization as a condition of entry. Port-of-entry immunization may present risk for hepatitis B and, possibly, HIV infection from multiple-use, inadequately sterilized syringes.

- 3829 Gerna, G.; Sarasini, A.; Torsellini, M. et al. GROUP- AND TYPE-SPECIFIC SEROLOGIC RESPONSE IN INFANTS AND CHILDREN WITH PRIMARY ROTAVIRUS INFECTIONS AND GASTROENTERITIS CAUSED BY A STRAIN OF KNOWN SEROTYPE. *Journal of Infectious Diseases*, vol.161, 1990, pp.1105-1111.

In this study conducted in Italy, the authors investigated the specificity of the neutralizing antibody response in patients with acute gastroenteritis caused by a rotavirus strain of known serotype. They conclude that human RV serotypes appear to elicit homo- and heterotypic neutralizing antibody in primary infections.

- 4681 Giron, J.A.; Jones, T.; Millan-Velasco, F. et al. DIFFUSE-ADHERING ESCHERICHIA COLI (DAEC) AS A PUTATIVE CAUSE OF DIARRHEA IN MAYAN CHILDREN IN MEXICO. *Journal of Infectious Diseases*, vol.163, 1991, pp.507-513.

A community-based, case control study was conducted in a Mexican Mayan village during the peak diarrhea season to prospectively identify the agents associated with childhood diarrheal disease. For the 24 cases of diarrhea from which no enteropathogens were isolated, diffuse-adhering Escherichia coli (DAEC) strains were significantly associated with diarrheal disease. This study provides evidence for the potential pathogenic capacity of DAEC and underscores the variety of diarrheal agents operating in a community.

- 4861 Glass, R.I.; Lew, J.F.; Gangarosa, R.E. et al. ESTIMATES OF MORBIDITY AND MORTALITY RATES FOR DIARRHEAL DISEASES IN AMERICAN CHILDREN. *Journal of Pediatrics*, vol.118 no.4 part 2, April 1991, pp.S27-S33.

In this article the authors prepared annual estimates of the morbidity and mortality rates of diarrheal diseases in American children under 5 years of age. They also examined the outcome of cases, measured in terms of visits to doctors, hospitalizations, and deaths. The estimates showed that 16.5 million children have 21 to 37 million episodes annually; of those, 2.1 to 3.7 million episodes lead to a physician visit, a total of 220,000 patients are hospitalized, and 325-425 children die. Deaths are more common in the South and among black persons. The authors conclude that diarrheal mortality could represent as much as 10% of preventable postneonatal death and that mortality could be significantly reduced through disease prevention interventions.

- 3815 Goh, K.T.; Teo, S.J.; Lam, S. et al. PERSON-TO-PERSON TRANSMISSION OF CHOLERA IN A PSYCHIATRIC HOSPITAL. *Journal of Infection*, vol.20, 1990, pp.193-200.

An outbreak of cholera caused by *Vibrio cholerae* O1 was reported in a psychiatric hospital in Singapore. A total of 74 inmates were infected. Extensive epidemiological investigations showed that the organism was not transmitted by contaminated food but through close person-to-person contact. Early recognition of the outbreak and prompt implementation of epidemic control measures rapidly brought the outbreak under control.

- 3905 Gouyon, J.B.; Kohli, E.; Petion, A.M. et al. INTERET DES METHODES DE DIAGNOSTIC RAPIDE DES INFECTIONS A ROTAVIRUS EN PERIODE NEONATALE. *Archives Francaises de Pediatrie*, vol.46, 1989, pp.187-190.

This article presents the results of a study that compared the effectiveness of immunoelectron microscopy to two ELISA methods and three latex methods. The ability of these tests to rapidly detect rotavirus infections in newborns is analyzed.

- 4413 Green, K.Y.; James, H.D.; Kapikian, A.Z. EVALUATION OF THREE PANELS OF MONOCLONAL ANTIBODIES FOR THE IDENTIFICATION OF HUMAN ROTAVIRUS VP7 SEROTYPE BY ELISA. *Bulletin of the World Health Organization*, vol.68 no.5, 1990, pp.601-610.

This study reports the ability of three panels of monoclonal antibodies to identify the serotype of human rotavirus reference strains whose serotype and genotype were known. The advantages and disadvantages of each panel and the performance of individual monoclonal antibodies are described.

- 796 Guthrie, R.K.; Cofie, D.Q. CULTURE OF VIBRIO CHOLERAЕ IN PRESENCE OF SHRIMP AND CRAB CHITIN. International Biodeterioration, vol.27, 1991, pp.39-48.

This study investigated the utilization of shrimp and crab chitin in saline water by *Vibrio cholerae* strains as compared to utilization of commercially prepared chitins. All chitin preparations stimulated growth as well as the production of cholera toxin by toxigenic strains. The results suggest that chitins can be a nutrient source for *V. cholerae* strains.

- 946 Gutierrez, B.J.; Soriano, B.H.; O'Ryan, G.M. et al. AGENTES PATOGENOS EN EL SINDROME DIARREICO AGUDO NO ENTEROCOLICO. Revista Chilena de Pediatria, vol.60 no.1, January-February 1989, pp.28-33.

During a one-year period, 112 infants admitted with nonenterococic acute diarrhea at 2 hospitals were studied for isolation of etiologic agents. The most frequently identified pathogen was rotavirus (57.8%), followed by *Escherichia coli* (19.7%). In 32.8% of the cases more than one agent was identified.

- 550 Haberberger, R.L.; Abdel-Rahman, A.I. PRELIMINARY INVESTIGATION OF DIARRHOEAL DISEASES AMONG CHILDREN IN SANAA, YEMEN ARAB REPUBLIC. Transactions of the Royal Society of Tropical Medicine and Hygiene, vol.84, 1990, pp.861-862.

A case-control, point-prevalence survey was conducted in Sanaa, Yemen Arab Republic in February 1988 at the start of the diarrhea season. This brief article reports on the pathogens isolated from the study subjects and states that more extensive epidemiological research is needed in this geographical area.

- 091 Haffejee, I.E.; Moosa, A. ROTAVIRUS SEROLOGY AND EXCRETION IN HOSPITALIZED NON-DIARRHOEAL PATIENTS. Annals of Tropical Paediatrics, vol.10, 1990, pp.173-178.

A prospective study of rotavirus serology and stool

excretion was carried out in a group of non-diarrhoeal paediatric patients [admitted to the R.K. Khan Hospital in Durban, South Africa]. A positive ELISA for RV [rotavirus] antigen was found in 13.3% children, which compared favourably with an asymptomatic RV-excretion rate of 16.2% found in normal subjects in the community...This confirms that RV is an important enteropathogen [in South Africa]. [published abstract]

- 4066 Haffejee, I.E.; Moosa, A. ROTAVIRUS STUDIES IN INDIAN (ASIAN) SOUTH AFRICAN INFANTS WITH ACUTE GASTROENTERITIS: I. MICROBIOLOGICAL AND EPIDEMIOLOGICAL ASPECTS. *Annals of Tropical Paediatrics*, vol.10, 1990, pp.165-172.

This study describes the virological and epidemiological aspects of rotavirus diarrhea in Asian infants in South Africa. It concludes that rotavirus is the most important cause of gastroenteritis in this population, whereas bacterial infections play a relatively minor role.

- 4035 Hamilton, J.R. THE PATHOPHYSIOLOGICAL BASIS FOR VIRAL DIARRHEA: A PROGRESS REPORT. *Journal of Pediatric Gastroenterology and Nutrition*, vol.11, 1990, pp.150-154.

Since human rotavirus was first identified in 1973, additional enteric viral pathogens have been described and several experimental approaches have been taken to explore mechanisms for viral diarrhea. This editorial focuses on the body of data accumulated from studies of piglet models.

- 3900 Harrison, H.E. CONTRIBUTION OF AMERICAN PEDIATRICIANS TO TREATMENT OF DIARRHEAL DEHYDRATION. *Pediatric Research*, vol.27 no.6, 1990, pp.S62-S64.

The history of American pediatricians' contribution to diarrheal disease research is documented in this article.

- 4071 Hassan, N.A.; Al-Ani, M.; Lafta, A.M. et al. VALUE OF BREATH HYDROGEN TEST IN DETECTION OF HYPOLACTASIA IN PATIENTS WITH CHRONIC DIARRHEA. *Journal of Chromatography, Biomedical Applications*, vol.530, 1990, pp.102-107.

In the present study hydrogen gas was measured in the breath of patients with chronic diarrhea by thermal conductivity gas chromatography of normalized to alucolar air concentrations. This method can be used to detect intestinal sugar malabsorption and is simple, rapid and

relatively inexpensive.

- 3959 Holmgren, J.; Clemens, J.; Sack, D.A. et al. ORAL IMMUNIZATION AGAINST CHOLERA. *Current Topics in Microbiology and Immunology*, vol.146, 1989, pp.198-204.

In collaboration with WHO and the government of Bangladesh, the ICDDR,B conducted a randomized, double-blind field trial of two oral cholera vaccines--the B/WCV and the WCV--in rural Bangladesh. The authors conclude that the killed oral cholera vaccines had a marked overall effect on admissions for life-threatening diarrhea and may have reduced the overall risk of death in adult women.

- 4535 HOUSEHOLD SURVEYS. *Weekly Epidemiological Record*, no.45, November 9, 1990, pp.349-351.

In Shandong Province, China, 8,298 children under 5 were studied to assess home management of diarrhea. The estimated annual incidence of diarrhea was 2.8 - 3.6 episodes per child. The majority of mothers continued to breastfeed or give solid foods during diarrhea, but very few offered extra fluids. Since only one caretaker used ORS, it was suggested that it be reserved for cases with dehydration and that caretakers and health workers should be taught to recognize the condition. Health education was recommended as a means to reduce diarrheal morbidity.

- 4626 Hunt, J.B.; Elliott, E.J.; Farthing, M.J.G. COMPARISON OF RAT AND HUMAN INTESTINAL PERFUSION MODELS FOR ASSESSING EFFICACY OF ORAL REHYDRATION SOLUTIONS. *Alimentary Pharmacology and Therapeutics*, vol.5, 1991, pp.49-59.

The optimal composition for ORS remains controversial. Animal models have been used to assess the efficacy of new formulations but the relevance of these studies to the handling of ORS in human intestine during diarrheal disease state remains uncertain. Here, the authors compare the efficacy of a variety of ORS in both human and rat perfusion models and conclude that rat models offer a valid approach for preliminary screening of new ORS.

- 3891 Huovinen, P.; Raiha, I.; Vuento, R. et al. FALSE-POSITIVE CLOSTRIDIUM DIFFICILE LATEX AGGLUTINATION TESTS. *The Lancet*, vol.335 no.8703, June 16, 1990, pp.1467-1468, letter.

This letter to the editor describes an outbreak of diarrhea

in a hospital in Turku City, Finland. The authors state that the latex agglutination tests used for diagnosis yielded many false-positives for *Clostridium difficile*.

- 4807 IS A ROTAVIRUS VACCINE FORTHCOMING? *Glimpse*, vol.13 no.1, January - February 1991, p.3.

A number of clinical trials of the rotavirus vaccine have been completed in Finland, the U.S., Peru, Rwanda and the Gambia. This brief article reports on the results.

- 4171 Jenkins, H.R.; Ansari, B.M. MANAGEMENT OF GASTROENTERITIS. *Archives of Disease in Childhood*, vol.65, 1990, pp.939-941.

The authors studied 215 infants and children in South Wales with gastroenteritis in order to determine disease severity, the organisms isolated, the frequency of complications, and the adequacy of management before admission. Stool pathogens were isolated in 125 patients. Incidence of morbidity and complications was low. Persistent diarrhea was present in 24 cases and 77 patients had received inadequate treatment prior to admission.

- 4061 Jung, K.; Aronsson, B. RAPID DIAGNOSIS OF CLOSTRIDIUM DIFFICILE-ASSOCIATED DIARRHOEA USING A LATEX AGGLUTINATION TEST. *APMIS*, vol.98, 1990, pp.652-654.

A rapid latex agglutination test, Culturette Brand CDT from Marion Laboratories, was evaluated and compared to a tissue culture assay (TCA) and isolation of *Clostridium difficile* in 380 faecal specimens from 226 [Swedish] patients with clinically suspected *Clostridium difficile*-associated diarrhoea. The sensitivity and specificity of the latex test compared with the TCA were 83% and 80% respectively and the positive and negative predictive values were 55% and 94% respectively. [published abstract]

- 4463 Kain, K.C.; Barteluk, R.L.; Kelly, M.T. et al. ETIOLOGY OF CHILDHOOD DIARRHEA IN BEIJING, CHINA. *Journal of Clinical Microbiology*, vol.29 no.1, January 1991, pp.90-95.

During April and May 1989, 221 Chinese children with diarrhea and 108 controls were studied to determine the role of recently recognized enteropathogens in childhood diarrhea. Pathogens were isolated from 56.5% of diarrheal cases and from 43.5% of controls, with enterotoxigenic *E. coli* being the most frequently detected. The authors also discuss antimicrobial resistance of the various isolates and

the implications for treatment.

- 3996 Kakkar, M.; Dogra, S.C. PREVALENCE OF CAMPYLOBACTER INFECTIONS IN ANIMALS AND CHILDREN IN HARYANA, INDIA. *Journal of Diarrhoeal Diseases Research*, vol.8 nos.1 and 2, March-June 1990, pp.34-36.

To study the prevalence of infections with *Campylobacter* spp in Haryana, India, a stool sample was collected using a rectal swab from 30 buffaloes, 62 cattle, 95 pigs and 94 children and was bacteriologically cultured. The subjects were either apparently healthy or had diarrhoea...63% of all thermophilic *Campylobacter* were cultured from rectal swabs taken from young livestock and children with diarrhoea. Of 32 isolates fully identified, 23 were *C. jejuni*, 8 were *C. coli* and 1 was *C. laridis*. [published abstract]

- 4429 Kalter, H.D.; Gray, R.H.; Black, R.E. et al. VALIDATION OF POSTMORTEM INTERVIEWS TO ASCERTAIN CAUSES OF DEATH IN CHILDREN. *International Journal of Epidemiology*, vol.19 no.2, 1990, pp.380-386.

In developing countries, diagnoses of diseases associated with deaths in children are frequently derived from retrospective maternal interviews. To determine the validity of this methodology, and to define sensitive and specific diagnostic algorithms, [the authors] compared symptoms and signs reported by mothers using structured questionnaires, with selected physician diagnoses for 164 deaths among hospitalized children on the Philippine island of Cebu...Diarrhoea diagnoses based on frequent loose or liquid stools had high sensitivity (78-84%) and specificity (79%), irrespective of whether the child died with diarrhoea alone or in combination with other illnesses. However, maternal reports of moderate/severe dehydration had low specificity. [The authors] conclude that, in this setting, verbal autopsies can diagnose major illnesses contributing to death in children with acceptable sensitivity and specificity. [published abstract]

- 4453 Kaper, J.B.; Levine, M.M. RECOMBINANT ATTENUATED VIBRIO CHOLERAЕ STRAINS USED AS LIVE ORAL VACCINES. *Research in Microbiology*, vol.141, 1990, pp.901-906.

The authors of this article report on the current research in the development of *Vibrio cholerae* vaccine strains. They review the characteristics of existing vaccines as well as discuss the considerations in the environmental release of live genetically engineered vaccine strains.

- 4220 Keller, K.M.; Wirth, S.; Baumann, W. et al. DEFECTIVE JEJUNAL BRUSH BORDER MEMBRANE SODIUM/PROTON EXCHANGE IN ASSOCIATION WITH LETHAL FAMILIAL PROTRACTED DIARRHOEA. *Gut*, vol.31, 1990, pp.1156-1158.

The case of a child with a specific defect in the jejunal brush border membrane sodium/proton exchanger is presented. The data confirmed the importance of a congenital defect in this exchanger as a cause of severe sodium-losing diarrhea.

- 3868 Khan, M.A.; Yunus, M. HOST FACTORS IN CHILDHOOD DIARRHOEA. *Journal of the Royal Society of Health*, vol.3, 1990, pp.94-95.

This study deals with some of the host factors in relation to diarrhoea in a rural population [in Aligarh, India]. Age was found to have a definite and direct relationship to diarrhoea. Male children were affected more. Poor hygiene, malnutrition, and the receipt of supplementary feeds, were found to have a significant association with childhood diarrhoeas. [published abstract]

- 3915 Khan, M.J.; Alam, A.N.; Rahman, N. et al. IMPACT OF ACUTE DIARRHOEA ON PARASITE LOADS. *Tropical Medicine and Parasitology*, vol.41, 1990, pp.163-164.

The authors compared the parasite prevalence rates of non-diarrheal populations of two poor refugee communities located in Dhaka, Bangladesh, with that in the post-diarrheal patients of the International Centre for Diarrhoeal Disease Research, Bangladesh. They conclude that because acute diarrhea flushes out intestinal parasites, the prevalence of parasites was significantly lower in the post-diarrheal population than in the non-diarrheal one.

- 4455 Knutton, S.; Phillips, A.D.; Smith, H.R. et al. SCREENING FOR ENTEROPATHOGENIC ESCHERICHIA COLI IN INFANTS WITH DIARRHEA BY THE FLUORESCENT-ACTIN STAINING TEST. *Infection and Immunity*, vol.59 no.1, January 1991, pp.365-371.

The diagnostic values of the fluorescent-actin staining (FAS) test in screening enteropathogenic *E. coli* (EPEC) from stool samples was examined in this study. The results indicated that the FAS test was diagnostic for classical EPEC as well as for Vero cytotoxin-producing *E. coli*. In addition, it was also effective in detecting EPEC strains which are not currently being diagnosed because they belong to serotypes not generally regarded as EPEC serotypes.

- 4755 Larson, A.; Mitra, S.N. RATES MEASURING THE USE OF ORAL REHYDRATION SOLUTIONS (ORS): A CRITICAL ASSESSMENT. Canberra, Australia, International Population Dynamics Program, The Australian National University, December 27, 1990, 15p.

The validity of using ORS use rates to measure ORT program success is evaluated in this paper. The authors examine various methodological aspects which affect rate calculations. Data from Bangladesh and other countries, primarily from Demographic and Health Surveys, are used to illustrate how methodology affects survey results. The authors conclude that use rates are only useful in a limited sense and, therefore, should not be employed as a program indicator.

- 4289 Lew, J.F.; LeBaron, C.W.; Glass, R.I. et al. RECOMMENDATIONS FOR COLLECTION OF LABORATORY SPECIMENS ASSOCIATED WITH OUTBREAKS OF GASTROENTERITIS. Morbidity and Mortality Weekly Report, vol.39 no.RR-14, October 26, 1990, 13p.

This report provides an update on guidelines and recommendations for the proper collection of specimens to be sent to CDC, gives general background information on some recently discovered pathogens, lists some of the tests available at CDC, and provides a list of CDC contacts.

- 4189 Lew, J.F.; Glass, R.I.; Petric, M. et al. SIX-YEAR RETROSPECTIVE SURVEILLANCE OF GASTROENTERITIS VIRUSES IDENTIFIED AT TEN ELECTRON MICROSCOPY CENTERS IN THE UNITED STATES AND CANADA. Pediatric Infectious Disease Journal, vol.9 no.10, October 1990, pp.709-714.

The authors reviewed six years of retrospective data on viral agents of gastroenteritis to determine the prevalence, seasonality and demographic characteristics of patients with viral gastroenteritis in the US and Canada. Electron microscopy test results showed that 16% of specimens contained a virus. Rotaviruses, adenoviruses, and small, round viruses were the most commonly detected. Slight seasonal variations were detected in rotavirus and astrovirus detections, but were not evident for other viruses.

- 4427 Lindtjorn, B. DISASTER EPIDEMIOLOGY. The Lancet, vol.337 no.8733, January 12, 1991, pp.116-117, letter.

The author of this letter to the editor discusses the impact of malnutrition on mortality under disaster conditions such

as severe drought.

- 3957 Markman, B. SYMPTOMS OF REACTOGENICITY IN FIELD TRIAL OF ORAL CHOLERA VACCINE. *The Lancet*, vol.336 no.8710, August 4, 1990, p.320, letter.

In this letter to the editor, the authors state reasons why Clemens and his co-workers should not assume from their field trial of oral cholera vaccine in Bangladesh that there is no reactogenicity of the product tested.

- 4602 Mitra and Associates. BANGLADESH DIARRHEAL MORBIDITY AND TREATMENT SURVEY 1987/88: FIRST REPORT. Baltimore, MD, The Johns Hopkins University, Institute for International Programs, 1990, 237p.+app.

From 1987-1988 the Bangladesh Diarrheal Morbidity and Treatment Survey (BDMTS), was carried out in both rural and urban areas of Bangladesh. Approximately 12,600 households were interviewed to obtain data on diarrheal epidemiology, ORT use and access to ORS, dietary management of diarrheal episodes, sources of advice and referrals, caretakers' knowledge about diarrhea and ORT, and risk factor prevalence for diarrheal morbidity. The survey also examined aspects of correct use of ORT including prompt initiation, correct preparation, adequate volume per treatment day, and continuous use. This document presents the results of the BDMTS as well as the survey methodology and design.

- 4102 Mitra, A.K.; Engleberg, N.C.; Glass, R.I. et al. FATAL DYSENTERY IN RURAL BANGLADESH. *Journal of Diarrhoeal Diseases Research*, vol.8 nos.1 and 2, March-June, 1990, pp.12-17.

The purpose of this study was to find out the actual circumstances which lead to dysentery-related deaths in the rural Bangladesh...A review of existing data on dysentery-related deaths from this area during 1976-1981 suggests that deaths in children followed a recurring seasonal pattern with an increase during the post-monsoon season of August-November of each year. This seasonal pattern of death was not evident among adults...The risk factors shown to be significantly associated with deaths were: longer median duration of illness ($p < 0.001$), female sex ($p = 0.039$), signs of respiratory infection ($p < 0.001$) and severe malnutrition ($p = 0.0002$). [published abstract]

- 4629 Moren, A.; Stefanaggi, S.; Antona, D. et al. PRACTICAL FIELD EPIDEMIOLOGY TO INVESTIGATE A CHOLERA OUTBREAK IN A MOZAMBICAN REFUGEE CAMP IN MALAWI, 1988. *Journal of Tropical Medicine and Hygiene*, vol.94, 1991, pp.1-7.

To identify high-risk groups and potential risk of acquiring the disease, an epidemiologic investigation was conducted at a Mozambican refugee camp in Malawi during a cholera epidemic. A matched-pair case-control study of food and water consumption showed that cases were more likely to use shallow wells instead of boreholes compared to controls. Also, cases were more likely to have had contact with the market than controls. Recommendations included early case finding and treatment, temporary closure of the market, tetracycline prophylaxis of contacts, and water chlorination.

- 4075 Mosley, W.H.; Jamison, D.T.; Henderson, D.A. THE HEALTH SECTOR IN DEVELOPING COUNTRIES: PROBLEMS FOR THE 1990S AND BEYOND. *Annual Review of Public Health*, vol.11, 1990, pp.335-358.

In this review [the authors] assess the extent to which programmatic and intellectual emphasis on CDD problems should remain as an appropriate focus in the decade of the 1990s and beyond...The bulk of this review assembles and summarizes the demographic and epidemiologic evidence pointing toward major changes in disease patterns that will need to be addressed by the health sectors of developing countries. [The authors] then discuss some implications for resource allocation and conclude with a discussion of policy issues that will likely be raised as these changes occur. [published abstract]

- 3878 Mutanda, L.N.; Patel, A.; Masudi, A.M. et al. AETIOLOGY OF DIARRHOEA IN PRE-TERM NEONATES AT KENYATTA NATIONAL HOSPITAL NURSERY, NAIROBI, KENYA. *East African Medical Journal*, April 1990, pp.223-230.

This study investigated the etiology of two outbreaks of diarrhea in pre-term neonates at Kenyatta National Hospital. The results show that such diarrhea can be caused by a multiplicity of enteric agents. Mixed infections were mainly those of *Salmonella* and *E. coli*.

- 4565 Nakano, T.; Binka, F.N.; Afari, E.A. et al. SURVEY OF ENTEROPATHOGENIC AGENTS IN CHILDREN WITH AND WITHOUT DIARRHOEA IN GHANA. *Journal of Tropical Medicine and Hygiene*, vol.93, 1990, pp.408-412.

A survey was carried out over 1 year in a rural area of Ghana on the isolation, detection and/or identification of enteric pathogens from children under 5 years of age with and without diarrhoea. The isolation and detection rate of *Shigella flexneri*, *Shigella dysenteriae*, *Giardia lamblia* and rotavirus were higher in children with diarrhoea than in controls...The incidence of other enteropathogenic bacteria and parasites identified in the diarrhoeal and non-diarrhoeal children was calculated and is discussed in this study. [published abstract]

- 3925 A NEW IMMUNOASSAY. *The Lancet*, vol.336 no.8707, July 14, 1990, pp.90-91.

This news note describes a new agglutination assay which can be used to diagnose infectious diseases. This assay would be useful in developing countries because of its high degree of sensitivity and specificity and its relative inexpensiveness.

- 4820 O'Loughlin, E.V.; Scott, R.B.; Gall, D.G. PATHOPHYSIOLOGY OF INFECTIOUS DIARRHEA: CHANGES IN INTESTINAL STRUCTURE AND FUNCTION. *Journal of Pediatric Gastroenterology and Nutrition*, vol.12, 1991, pp.5-20.

This review article elaborates on the mechanisms of diarrhea production, using pathogens as illustrative examples. It concludes that a number of mechanisms are implicated in infection-induced intestinal fluid and electrolyte losses.

- 4419 Omran, A.R. HEALTH SYSTEMS RESEARCH: APPROACHES AND PITFALLS. *World Health Forum*, vol.11 no.3, 1990, pp.286-292.

In recent decades there has been growing interest in health systems research, reflecting the increased complexity of services, the evolution of alternative options, mounting budgetary pressures, and rising skepticism about public programmes. The methodological and operational challenges encountered in this field are reviewed [in this article]. [published abstract]

- 4437 Ospina, E.R. INVESTIGACION OPERATIVA APLICADA A LOS SERVICIOS DE SALUD. Bogota, Columbia, Fundacion Santa Fe de Bogota, August 1990, 82p.

This document, which is based on the Fundacion Santa Fe de Bogota's three year collaboration with the PRICOR Project,

presents guidelines for persons conducting operations research. It reviews aspects such as methodology, study design, sampling, data collection, and data analysis.

- 3859 Pavone, R.; Schinaia, N.; Hart, C.A. et al. VIRAL GASTRO-ENTERITIS IN CHILDREN IN MALAWI. *Annals of Tropical Pediatrics*, vol.10, 1990, pp.15-20.

The authors undertook a 2-month prospective survey of the causes and effects of diarrheal disease in children under 5 attending an outpatient clinic in Blantyre, Malawi. Forty-two per cent were found to be infected with rotavirus, 9% *Cryptosporidium*, 4.2% Adenovirus, 1.2% Astrovirus, and 0.6% Norwalk agent and small round featureless viruses.

- 4670 Pazzaglia, G.; Bourgeois, A.L.; El Diwany, K. et al. CAMPYLOBACTER DIARRHOEA AND AN ASSOCIATION OF RECENT DISEASE WITH ASYMPTOMATIC SHEDDING IN EGYPTIAN CHILDREN. *Epidemiology and Infection*, vol.106, 1991, pp.77-82.

In Cairo, Egypt, a hospital-based case-control study was carried out to determine the age-specific frequency of campylobacter infection among diarrheal and non-diarrheal children 0-5 years old. Campylobacter was the most common pathogen in diarrheal stools and children less than one year old were at greatest risk of infection. The results also showed that asymptomatic shedding in controls was positively associated with a recent diarrheal episode and, therefore, could be an important source of new infections.

- 4454 Pearson, G.D.N.; DiRita, V.J.; Goldberg, M.B. et al. NEW ATTENUATED DERIVATIVES OF VIBRIO CHOLERAE. *Research in Microbiology*, vol.141, 1990, pp.893-899.

In this report the authors describe new attenuated derivatives of *V. cholerae* with mutations that cause intermediate reductions in intestinal colonization. The implications of this research for producing live cholera vaccines are also discussed.

- 4664 Pesce, F.; Romano, P.; Barabino, A. et al. SCANNING ELECTRON MICROSCOPY STUDY OF SMALL BOWEL BIOPSIES IN CHRONIC DIARRHOEA IN CHILDHOOD. *Histology and Histopathology*, vol.6, 1991, pp.25-36.

In order to evaluate the diagnostic potential of Scanning Electron Microscopy (SEM) for chronic diarrhea, the authors used SEM to study a series of small bowel biopsies from

patients with clinical evidence of malabsorption. They then compared the results with those obtained with conventional techniques such as Dissecting and Light-Microscopy. Results indicated that SEM could be useful in the differential diagnosis of chronic diarrhea.

- 4476 Pesola, G.R.; Hogg, J.E.; Nashaat, E. et al. HYPERTONIC NASOGASTRIC TUBE FEEDINGS: DO THEY CAUSE DIARRHEA? *Critical Care Medicine*, vol.18 no.12, December 1990, pp.1378-1382.

This study examined whether hypertonic nasogastric tube feedings cause diarrhea in hospitalized patients in the U.S. The study group included normal volunteers as well as postoperative head and neck cancer patients. Results showed no link between nasogastric feedings and diarrhea in either group studied.

- 3800 Pigot, F. DIARRHEES AIGUES. *Gazette Medicale*, vol.97 no.18, 1990, pp.37-40.

This article briefly describes various types of diarrhea, such as infectious, viral, and parasitic. The etiologic agents associated with the various types as well as possible treatment methods are also described.

- 4742 Pipittajan, P.; Kasempimolporn, S.; Ikegami, N. et al. MOLECULAR EPIDEMIOLOGY OF ROTAVIRUSES ASSOCIATED WITH PEDIATRIC DIARRHEA IN BANGKOK, THAILAND. *Journal of Clinical Microbiology*, vol.29 no.3, March 1991, pp.617-624.

This study investigated the occurrence and circulation of different human rotavirus electropherotypes in children with diarrhea in Bangkok, Thailand. During every epidemic only one or a few electropherotypes predominated. Also, the predominant electropherotypes shifted from epidemic to epidemic. No specific electropherotype or serotype correlated with patient age.

- 3869 Playford, R.J.; Domin, J.; Beacham, J. et al. PRELIMINARY REPORT: ROLE OF PEPTIDE YY IN DEFENCE AGAINST DIARRHOEA. *The Lancet*, vol.335 no.8705, June 30, 1990, pp.1555-1557.

To investigate whether peptide YY (PYY) has a role in minimising fluid loss during diarrhoea, its effect on hypersecretion induced by vasoactive intestinal peptide (VIP) was studied in seven subjects with ileostomies...[The]

findings suggest that PYY is a natural inhibitor of diarrhoea. [published abstract]

- 886 Poole, S.R. CRITERIA FOR MEASUREMENT OF DEHYDRATION. *Annals of Emergency Medicine*, vol.19 no.6, June 1990, pp.730-731, letter.

In this letter to the editor the author discusses the lack of consistent criteria for measuring dehydration in patients with gastroenteritis. He suggests that serum bicarbonate may be a good predictor of dehydration levels, but emphasizes the need for further research.

- 244 PROMOTING HEALTH RESEARCH FOR DEVELOPMENT. *The Lancet*, vol.336 no.8728, December 8, 1990, pp.1415-1416.

Referring to the 1990 report of the Commission on Health Research for Development, this editorial discusses the development of essential national health research in developing countries.

- 308 PROSPECTS FOR PUBLIC HEALTH BENEFITS IN DEVELOPING COUNTRIES FROM NEW VACCINES AGAINST ENTERIC INFECTIONS. *Glimpse*, vol.13 no.1, January - February 1991, pp.4-5.

New vaccines for cholera, typhoid and rotavirus diarrhea have recently been developed. At a symposium in Gothenburg in May 1990, scientists considered issues regarding the potential public health benefits of these vaccines. Issues discussed included the costs of developing and administering the vaccines, and the relative efficacy and effectiveness.

- 316 Qadri, M.H.; Al-Ghamdi, M.A.; Imadulhaq, M. ACUTE DIARRHEAL DISEASE IN CHILDREN UNDER FIVE YEARS OF AGE IN THE EASTERN PROVINCE OF SAUDI ARABIA. *Annals of Saudi Medicine*, vol.10 no.3, 1990, pp.280-284.

From 1987-1988, 859 children who were treated for acute diarrhea at the Diarrhoea Control Center in Damman, Saudi Arabia, were studied in order to isolate the most common pathogens. The most common enteropathogens isolated were rotavirus, salmonella, shigella, *Campylobacter jejuni*, and *Escherichia coli*. The most common parasite isolated was *Giardia lamblia*.

- 4200 Rahman, A.S.M.M. NEUTRAL FAT IN STOOL AS CLINICAL INDICATOR OF ROTAVIRUS DIARRHOEA IN UNDER-FIVE CHILDREN. *Journal of Tropical Pediatrics*, vol.36 no.5, October 1990, pp.265-266, letter.

In this letter to the editor, the author discusses the testing of neutral fat in stool as a way to diagnose rotavirus diarrhea. Although the test is not highly sensitive, it could be used where only limited laboratory support is available.

- 4166 Ram, S.; Khurana, S.; Khurana, S.B. et al. SEASONAL FLUCTUATIONS IN THE OCCURRENCE OF ENTEROINVASIVE ESCHERICHIA COLI DIARRHOEA. *Indian Journal of Medical Research*, vol.91, July 1990, pp.258-262.

This article reviews studies conducted to assess the levels of enteroinvasive E. coli infection in patients at the Dayanand Medical College and Hospital in the Indian Punjab. The studies sought to determine the seasonality of these infections and the antibiotic sensitivity of isolated pathogens. Data showed that incidence was greatest during the hot, dry season. All the isolated strains were mostly susceptible to cephalothin, gentamicin, nalidixic acid, furazolidone, and neomycin.

- 4158 Ramamurthy, T.; Pal, A.; Nair, G.B. et al. EXPERIENCE WITH TOXIN BEAD ELISA IN CHOLERA OUTBREAK. *The Lancet*, vol.336 no.8711, August 11, 1990, pp.375-376, letter.

This letter to the editor reports on an outbreak of cholera that was declared despite failure to isolate vibrios; this was made possible by the use of toxin bead ELISA.

- 4312 Riley, L.W.; Munoz, E.C.; Zarate, R.J. et al. RISK FACTORS FOR ACUTE CHILDHOOD DIARRHEA IN THE HIGHLANDS OF CHIAPAS, MEXICO: A STRATEGY FOR INTERVENTION. *Bulletin of PAHO*, vol.24 no.2, 1990, pp.210-216.

A case-control study was conducted in the highlands of Chiapas, Mexico, to identify factors associated with acute diarrhea in children less than 6 years old. The study found that the diarrhea attack rate among the children surveyed during 3 weeks in the month of August was approximately 30% and that children whose mothers had diarrhea were especially likely to contract the illness themselves. [published abstract]

- 3887 Robbins, A. PROGRESS TOWARDS VACCINES WE NEED AND DO NOT HAVE. The Lancet, vol.335 no.8703, June 16, 1990, pp.1436-1438.

The author of this article comments on the obstacles to the development of new vaccines. It is his opinion that such obstacles are mostly economic and political. He also reviews vaccine research and development as well as improvements in delivery technology that would facilitate the production and distribution of vaccines around the world.

- 4558 ROTAVIRUS SURVEILLANCE -- UNITED STATES, 1989-1990. Morbidity and Mortality Weekly Report, vol.40 no.5, February 8, 1991, pp.80-87.

The U.S. Centers for Disease Control established a National Rotavirus Surveillance System (NRSS) in January, 1989 to monitor national patterns in the epidemiology of rotavirus. This report summarizes the NRSS findings from January 1989 through November 1990.

- 4856 Rubinoff, M.J.; Field, M. INFECTIOUS DIARRHEA. Annual Reviews in Medicine, vol.42, 1991, pp.403-410.

This review singles out several bacterial and parasite causes of infectious diarrhea about which there have been interesting recent developments in pathogenesis, diagnosis, or treatment. Diarrheagenic mechanisms and infections by Escherichia coli, Salmonella, Giardia lamblia, Entamoeba histolytica, Cryptosporidia, and Isospora are discussed. [published abstract]

- 4824 Sachdev, H.P.S.; Kumar, S.; Singh, K.K. et al. RISK FACTORS FOR FATAL DIARRHEA IN HOSPITALIZED CHILDREN IN INDIA. Journal of Pediatric Gastroenterology and Nutrition, vol.12, 1991, pp.76-81.

A prospective evaluation was designed to evaluate the clinical factors associated with death in children hospitalized with diarrhea in India. Four factors were significantly associated with death: associated major infection, severe wasting, severe stunting, and protraction of illness. In children <19 months of age, breastfeeding had a protective effect. High-risk children can be identified and targeted for intensive intervention, even in settings with high case fatality rates.

- 4438 Samba, C.; Galan, P.; Luzeau, R. et al. VITAMIN A DEFICIENCY IN PRE-SCHOOL AGE CONGOLESE CHILDREN DURING MALARIAL ATTACKS--PART I: UTILIZATION OF THE IMPRESSION CYTOLOGY WITH TRANSFER IN AN EQUATORIAL COUNTRY. International Journal of Vitamin and Nutrition Research, vol.60, 1990, pp.215-223.

The vitamin A status of 454 pre-school age Congolese children was evaluated by the impression cytology method with transfer (ICT) and by the determination of plasma retinol...The subjects were children in good health or suffering from malaria, measles or various infectious diseases. Advantages, disadvantages, sensitivity and specificity of the ICT are discussed. [The authors] suggest its use in mass screening programs for vitamin A deficiency in developing countries. [published abstract]

- 4546 Shaikh, K.; Wojtyniak, B.; Mostafa, G. et al. PATTERN OF DIARRHOEA DEATHS DURING 1966-1987 IN A DEMOGRAPHIC SURVEILLANCE AREA IN RURAL BANGLADESH. Journal of Diarrhoeal Diseases Research, vol.8 no.4, December 1990, pp.147-154.

A study conducted in Matlab, Bangladesh, analyzed mortality patterns of diarrheal diseases and other causes in relation to age, sex, seasonality and yearly variation from 1966-1987. On the average, over 20% of all deaths seemed to be diarrhea related with children aged 1-4 years having the highest diarrheal mortality rate. The rate was also higher in girls than in boys. November was the peak month of diarrheal deaths in this area.

- 4228 SHIGELLOSIS BREAKS OUT IN U.S. COMMUNITIES. International Child Health Foundation Newsletter, issue 6, 1990, pp.1-2.

This news note reports on the increased incidence of shigellosis in the US and describes some of the characteristics and symptoms of the disease. Public health education and supervised hand washing for children are cited as preventive measures.

- 3980 Siddique, A.K.; Islam, Q.; Akram, K. et al. CHOLERA EPIDEMIC AND NATURAL DISASTERS: WHERE IS THE LINK? Tropical and Geographic Medicine, vol.41, 1989, pp.377-382.

In May 1985, a cyclone and tidal surge devastated Sandwip, an island off the Southern Corner of Bangladesh. Within one week of this disaster a cholera epidemic broke out. It

resulted in 12, 194 registered cases and 51 deaths. The factors contributing to the occurrence of the epidemic are analyzed. [published abstract]

- 4665 Soman, C.R.; Damodaran, M.; Rajasree, S. et al. HIGH MORBIDITY AND LOW MORTALITY -- THE EXPERIENCE OF URBAN PRESCHOOL CHILDREN IN KERALA. *Journal of Tropical Pediatrics*, vol.37 no.1, February 1991, pp.17-24.

A study of two urban areas in Kerala, India, examined the morbidity rate of children from 0-3 years of age. The economic and environmental conditions in the areas differed vastly, one being a slum area and the other a middle class neighborhood. Results indicated that although mortality was low, the morbidity rate was high. The most common illnesses were diarrheal diseases and respiratory infections. Also, the morbidity rate was considerably higher in the slum area than in the middle class area, thus suggesting that environmental and economic conditions can affect morbidity.

- 4470 Stanton, B.F.; Clemens, J. D.; Ahmed, S. METHODOLOGICAL CONSIDERATIONS IN DEFINING CHRONIC DIARRHOEA USING A DISTRIBUTIONAL APPROACH. *International Journal of Epidemiology*, vol.19 no.2, 1990, pp.439-443.

In the present paper, using one data set from children in Dhaka, Bangladesh, [the authors] illustrate some of the methodological considerations encountered in using the distributional approach for defining 'chronic diarrhoea'. [They] display the impact of altering these variables on the resultant frequency and/or duration of chronic diarrhoea. [published abstract]

- 3831 Tacket, C.O.; Forrest, B.; Morona, R. et al. SAFETY, IMMUNOGENICITY, AND EFFICACY AGAINST CHOLERA CHALLENGE IN HUMANS OF A TYPHOID-CHOLERA HYBRID VACCINE DERIVED FROM SALMONELLA TYPHI TY21A. *Infection and Immunity*, vol.58 no.6, June 1990, pp.1620-1627.

A live oral vaccine consisting of attenuated *Salmonella typhi* Ty21a expressing *Vibrio cholerae* 01 Inaba lipopolysaccharide (LPS) 0 antigen was constructed and tested in volunteers [in Australia] for safety, immunogenicity, and efficacy...Although the typhoid-cholera hybrid vaccine did not provide significant protection overall against experimental cholera, this study demonstrates the importance of antibody to *V. cholerae* 0 antigen in ameliorating clinical illness and illustrates the use of an *S. typhi* carrier vaccine strain expressing a

foreign antigen. [published abstract]

- 3916 Talwar, P.; Chakraborti, A.; Chawla, A. et al. FUNGAL DIARRHOEA: ASSOCIATION OF DIFFERENT FUNGI AND SEASONAL VARIATION IN THEIR INCIDENCE. *Mycopathologia*, vol.110, 1990, pp.101-105.

A total of 854 patients (640 children and 214 adults) admitted with acute or chronic diarrhoea suspected of non-invasive overgrowth of fungi in intestine were screened during a period of 3 years. Fungal proliferation was noted in 54.8% of these patients...The predominant fungal species isolated were *Candida albicans*...As seen in bacterial diarrhoea, higher incidence was noted in children from April to August. No such seasonal variation was noted in adults. [published abstract]

- 3772 Taylor, S.M.; Hayes, M.; Frank, J. et al. THE RISK APPROACH IN DIARRHEAL DISEASE INTERVENTION IN GRENADA. *Social Science and Medicine*, vol.30 no.10, 1990, pp.1089-1095.

The authors report on a study designed as a follow-up to one conducted in Grenada from July 1983 to February 1984. The original study (*Social Science and Medicine*, vol.23, 1986, pp.995-1002) was used in developing a method, the risk approach, for identifying households at high risk of childhood diarrhea. The follow-up, done in 1986, attempted to replicate the original's results, which showed strong associations between risk factors and diarrheal episodes. The results, however, were not replicated. The possible reasons for contrasting results as well as the implications for using the risk approach method are discussed.

- 3863 Tazume, S.; Takeshi, K.; Saidi, S.M. et al. ECOLOGICAL STUDIES ON INTESTINAL MICROBIAL FLORA OF KENYAN CHILDREN WITH DIARRHOEA. *Journal of Tropical Medicine and Hygiene*, vol.93, 1990, pp.215-221.

The present investigations were designed to analyze the faecal microorganisms and physicochemical properties of diarrhoeal and recovery faecal specimens in Kenyan children in order to clarify the pathogenesis of infectious diarrhoea. [published abstract]

- 4065 Telzak, E.E.; Budnick, L.D.; Greenberg, M.S. et al. A NOSOCOMIAL OUTBREAK OF SALMONELLA ENTERITIDIS INFECTION DUE TO THE CONSUMPTION OF RAW EGGS. *New England Journal of Medicine*, vol.323 no.6, August 9, 1990, pp.394-397.

An investigation of the largest nosocomial outbreak of *Salmonella Enteritidis* in the U.S. found that isolates of *S. enteritidis* with the same phagetype were found in patients, epidemiologically implicated raw eggs, and the ovary of a hen from the farm that supplied the implicated eggs.

- 4725 Toda, M.; Okubo, S.; Ikigai, H. et al. THE PROTECTIVE ACTIVITY OF TEA AGAINST INFECTION BY VIBRIO CHOLERAE 01. *Journal of Applied Bacteriology*, vol.70, 1991, pp.109-112.

Extracts of black tea exhibited bactericidal activity against *Vibrio cholerae* 01. The tea extract inhibited the haemolysin activity of *V. cholerae* 01, El Tor and the morphological changes of Chinese hamster ovary cells induced by cholera toxin. Tea extract also reduced fluid accumulation induced by cholera toxin in sealed adult mice and by *V. cholerae* 01 in ligated intestinal loops of rabbits. These findings suggest that tea has protective activity against *V. cholerae* 01. [published abstract]

- 4186 Todd, E. EPIDEMIOLOGY OF FOODBORNE ILLNESS: NORTH AMERICA. *The Lancet*, vol.336 no.8718, September 29, 1990, pp.788-790.

The epidemiology of foodborne illness in the US and Canada is reviewed in this article. The author also discusses the costs associated with these outbreaks as well as examining the most recent foodborne diseases, such as salmonellosis and *Listeria monocytogenes* outbreaks and *E. coli*-associated diseases.

- 4188 Turnberg, L.A. THE SMALL INTESTINE: PROSPECTS FOR THERAPEUTIC APPROACHES IN SECRETORY DIARRHOEAL DISEASES. *Scandinavian Journal of Gastroenterology*, vol.25 suppl.175, 1990, pp.85-92.

In this review...[the author focuses] on the cellular basis for secretory diarrhoeal diseases and [illustrates] when prospects for therapeutic intervention seem reasonable on the basis of the underlying mechanisms. [published abstract]

- 4678 Underwood, B.A.; Chavez, M.; Hankin, J. et al. GUIDELINES FOR THE DEVELOPMENT OF A SIMPLIFIED DIETARY ASSESSMENT TO IDENTIFY GROUPS AT RISK FOR INADEQUATE INTAKE OF VITAMIN A. Washington, D.C., International Vitamin A Consultative Group, July 1989, 61p.

The purpose of these guidelines is to assist researchers to identify populations at risk of vitamin A deficiency and to aid in developing appropriate follow-up interventions. The authors also present mechanisms for health workers to advise mothers of high-risk children about appropriate dietary management of vitamin A deficiency.

- 3909 Ushijima, H.; Honma, H.; Ohnoda, H. et al. DETECTION OF ANTI-ROTAVIRUS IGG, IGM, AND IGA ANTIBODIES IN HEALTHY SUBJECTS, ROTAVIRUS INFECTIONS, AND IMMUNODEFICIENCIES BY IMMUNOBLOTTING. Journal of Medical Virology, vol.27, 1989, pp.13-18.

[The authors] studied the antibody responses to [individual simian rotavirus structural] polypeptides in sera of healthy children, in primary and secondary immunodeficiency patients, and in patients with rotavirus infection. Rotavirus IgG, IgA, and IgM responses were studied by immunoblotting...[Results showed that] the scores for primary and secondary immunodeficiency patients were lower than for healthy children. [published abstract]

- 4732 Van Der Tas; P. HOW TO PLAN A PROJECT AND APPLY FOR FUNDS. AIDS Action, issue 12, December 1990, pp.2+.

This article provides brief guidelines about planning a health project. It reviews basics such as setting objectives, creating an implementation plan, drafting budgets, and conducting evaluations.

- 4462 Van Loon, F.P.L.; Clemens, J.D.; Shahrer, M. et al. LOW GASTRIC ACID AS A RISK FACTOR FOR CHOLERA TRANSMISSION: APPLICATIONS OF A NEW NON-INVASIVE GASTRIC ACID FIELD TEST. Journal of Clinical Epidemiology, vol.43 no.12, 1990, pp.1361-1367.

Because low gastric acid output (GAO) is an established risk factor for cholera, [the authors] assessed after validation, whether a new non-invasive test which estimates GAO by measuring breath hydrogen excess after ingestion of magnesium and a stimulant of gastric acid secretion, could

discriminate between persons at high and at low risk of developing cholera. Fifteen age-matched pairs, participants in the field trial of two oral cholera vaccines in rural Bangladesh, were tested...The results, which are consistent with past invasive assessments of the association between hypochlorhydria and cholera, suggest that this non-invasive test may be useful in evaluating GAO in epidemiological field studies. [published abstract]

- 4578 Van Norren, B.; Ties Boerma, J.; Sempebwa, E.K.N. SIMPLIFYING THE EVALUATION OF PRIMARY HEALTH CARE PROGRAMMES. *Social Science and Medicine*, vol.28 no.10, 1989, pp.1091-1097.

The authors contend that currently there is too much emphasis on health impact during PHC program evaluations. Therefore, they present an evaluation approach which focuses on intermediate variables (e.g. nutrition, hygiene, and reproductive patterns) that directly affect children's health status. Although health impact evaluations should not be eliminated totally, the proposed approach would produce more understandable evaluations and encourage more community participation.

- 4317 Varavithya, W.; Vathanophas, K.; Bodhidatta, L. et al. IMPORTANCE OF SALMONELLAE AND CAMPYLOBACTER JEJUNI IN THE ETIOLOGY OF DIARRHEAL DISEASE AMONG CHILDREN LESS THAN 5 YEARS OF AGE IN A COMMUNITY IN BANGKOK, THAILAND. *Journal of Clinical Microbiology*, vol.28 no.11, November 1990, pp.2507-2510.

The etiology of diarrhea in children <5 years of age in a low-income housing project in Bangkok was determined over 1 year. Since salmonellae and *C. jejuni* were the most common bacterial pathogens identified in children <6 months of age, efforts to prevent transmission of salmonellae and campylobacter to young children should be a public health priority in Bangkok.

- 4090 Vijayan, V.; Quak, S.H.; Wong, H.B. INCIDENCE, CLINICAL FEATURES AND EPIDEMIOLOGY OF ROTAVIRUS GASTRO-ENTERITIS IN HOSPITALIZED CHILDREN. *Annals of Tropical Paediatrics*, vol.10, 1990, pp.179-183.

This project, based on hospitalized children, was undertaken to study the incidence, epidemiology, and clinical features of rotavirus GE [gastroenteritis] in Singapore...Rotavirus was detected in 59 (27.1%) of the 218 GE samples and four (6%) of the control samples. ELISA was the most sensitive test and could detect viral antigen long after the other

methods failed to do so. [published abstract]

- 4046 Viljanen, M.K.; Peltola, T.; Junnila, S.Y.T. et al. OUTBREAK OF DIARRHOEA DUE TO ESCHERICHIA COLI 0111:B4 IN SCHOOL CHILDREN AND ADULTS: ASSOCIATION OF VI ANTIGEN-LIKE ACTIVITY. The Lancet, vol.336 no.8718, October 6, 1990, pp.831-834.

This article describes an outbreak of diarrhea due to E. coli which affected healthy school children as well as adults. Results of the investigation indicate that E. coli 0111: B4, and possibly other enteropathogenic E. coli strains, should be considered in the diagnosis of all diarrhea cases, not just infantile diarrhea.

- 4561 Wilde, J.; Yolken, R.; Willoughby, R. et al. IMPROVED DETECTION OF ROTAVIRUS SHEDDING BY POLYMERASE CHAIN REACTION. The Lancet, vol.337 no.8737, February 9, 1991, pp.323-326.

A method for the amplification of rotavirus RNA, reverse-transcriptase polymerase chain reaction (RT/PCR), was developed in order to improve the identification of children excreting rotavirus. When compared in a study to a solid-phase enzyme immunoassay, it was determined that the RT/PCR detected rotavirus shedding for 2-7 days longer than the immunoassay.

- 3763 Wolff, M.C.; Black, R.E. MANUAL FOR CONDUCTING LOT QUALITY ASSESSMENTS IN ORAL REHYDRATION THERAPY CLINICS. Baltimore, Maryland, Johns Hopkins University, Institute for International Programs, September 1989, 20p.

This manual outlines the methodology for using lot quality assessments (LQAs) to determine if ORT is being properly used to treat children coming to diarrhea clinics. The LQA method involves testing a sample population in order to draw general conclusions about how diarrhea patients are treated.

DIARRHEA AGENTS

- 4855 Abdulkadir, S.A. CHOLERA AND CHOLERA-LIKE DIARRHOEAL DISEASES: WHY THE DIFFERENCES IN SEVERITY? *Medical Hypotheses*, vol.34, 1991, pp.278-281.

Although *Vibrio Cholera* and several other enterotoxigenic bacteria such as the enterotogenic *Escherichia coli* produce secretory diarrhea by exactly the same mechanism, cholera is much more severe. It is proposed that this difference in severity may be because while the alkaline diarrheal fluid produced in these conditions is optimal for the growth of *Vibrio cholera*, *E. coli* and other enterotoxigenic bacteria are inhibited. [published abstract]

- 4269 Al-Wardi, H.; Al-Obaidi, A.M.A.R.; Al-Hadithi, T.S. et al. ROTAVIRUS GASTROENTERITIS IN INFANTS AND YOUNG CHILDREN IN SADAM CITY IN BAGHDAD. *Saudi Medical Journal*, vol.11 no.6, 1990, pp.457-459.

This study was undertaken to determine the incidence of rotavirus gastroenteritis in hospitalized infants and children >2 years old and its relation to variables such as age, sex, type of feeding, seasonal variations and educational level of the mother.

- 4569 Albert, S.; Weber, B.; Schafer, V. et al. SIX ENTEROPATHOGENS ISOLATED FROM A CASE OF ACUTE GASTROENTERITIS. *Infection*, vol.18 no.6, 1990, pp.381-382.

This brief article describes the isolation of six enteropathogens from the stool of a 30 year old German woman with travelers diarrhea. The pathogens isolated were *Entamoeba histolytica*, *Plesiomonas shigelloides*, *Campylobacter jejuni*, and three strains of *Salmonella*.

- 623 Altwegg, M.; Lucchini, G.M.; Luthy-Höttenstein, J. et al. AEROMONAS-ASSOCIATED GASTROENTERITIS AFTER CONSUMPTION OF CONTAMINATED SHRIMP. *European Journal of Clinical Microbiology and Infectious Diseases*, vol.10 no.1, January 1991, pp.44-45, letter.

This letter to the editor presents the case of a 38-year-old male patient with diarrhea from whom *Aeromonas* was isolated as the only pathogen. An *Aeromonas* strain indistinguishable from the patient's isolate was found in a shrimp cocktail consumed by the patient.

- 3796 AQUATIC NICHE IS HAVEN FOR VIBRIO CHOLERAЕ. Glimpse, vol.12 no.1, January-February 1990, p.1+.

This article briefly describes how *Vibrio cholerae* attaches to particles commonly found in aquatic environments. Water from such contaminated sources is often used for drinking and washing in many rural areas, thus creating the possibility of water-borne infections.

- 3805 Bedwell, J.; Holton, J.; Vaira, D. et al. IN VITRO KILLING OF *HELICOBACTER PYLORI* WITH PHOTODYNAMIC THERAPY. The Lancet, vol.335 no.8700, May 26, 1990, pp.1287, letter.

This letter to the editor describes how photodynamic therapy may be used to eradicate *Helicobacter pylori* from the stomach.

- 3858 Brown, E.; Talbot, G.H.; Axelrod, P. et al. RISK FACTORS FOR *CLOSTRIDIUM-DIFFICILE* TOXIN-ASSOCIATED DIARRHEA. Infection Control and Hospital Epidemiology, vol.11 no.6, 1990, pp.283-290.

The hospital-wide attack rate for *Clostridium difficile*-associated diarrhea at the Hospital of the University of Pennsylvania was observed in 1987. The authors report on their investigation, including a retrospective case/control study with multivariate analysis, undertaken to determine risk factors in the population.

- 3875 Cook, S.M.; Glass, R.I.; LeBaron, C.W. et al. GLOBAL SEASONALITY OF ROTAVIRUS INFECTIONS. Bulletin of the World Health Organization, vol.68 no.2, 1990, pp.171-177.

[The authors] review data on the seasonality of rotavirus infections from surveillance studies conducted in a large number of countries, describe the global patterns of rotavirus gastroenteritis, consider the implications of these patterns for transmission, and compare the global trends with those for other childhood viral diseases whose mode of transmission has been established. [published abstract]

- 4236 Costa, C.; Candeias, J.A.N.; Capeletti, E.L.L. ELETROFEROTIPOS DE ROTAVIRUS EM CRIANCAS COM E SEM QUADROS DE GASTROENTERITE. Revista de Saude Publica, vol.24 no.2, 1990, pp.152-155.

The electropherotypes of rotavirus isolated from 500

children with diarrhea and 500 controls in Sao Paolo, Brazil, were classified. Rotavirus was detected in 14.8% of the diarrheal group, of which 5 samples had the "short" and 11 the "long" electropherotype. In the control group, 0.8% of the samples contained rotavirus, all of which had "long" electropherotype.

- 4571 Cravioto, A.; Tello, A.; Navarro, A. et al. ASSOCIATION OF ESCHERICHIA COLI HEP-2 ADHERENCE PATTERNS WITH TYPE AND DURATION OF DIARRHOEA. *The Lancet*, vol.337 no.8736, February 2, 1991, pp.262-264.

The relation between E. coli adherence patterns and type and duration of diarrheal episodes during the first two years of life was studied in 636 fecal specimens from 72 Mexican children. Of the 373 specimens yielding E. coli, strains with localized adherence were significantly associated with acute non-bloody diarrhea, whereas strains with aggregative adherence were significantly associated with persistent diarrhea. Isolation of strains with diffuse adherence was not related to type or duration of diarrhea but was generally associated with isolation of another pathogen.

- 3960 Cruz, J.R.; Caceres, P.; Cano, F. et al. ADENOVIRUS TYPES 40 AND 41 AND ROTAVIRUSES ASSOCIATED WITH DIARRHEA IN CHILDREN FROM GUATEMALA. *Journal of Clinical Microbiology*, vol.28 no.8, August 1990, pp.1780-1784.

To determine the relative importance of the most common viral agents of diarrhea in the Guatemalan population aged 0 to 36 months, [the authors] studied the prevalence of excretion of Ad40 and Ad41 and rotaviruses in healthy and sick children from a rural community in Guatemala and in a group of patients hospitalized because of gastroenteritis. [published abstract]

- 1265 CRYPTOSPORIDIOSIS: CRYPTOSPORIDIUM IN WATER SUPPLIES. *Weekly Epidemiological Record*, no.47, November 23, 1990, pp.367-368.

In the UK, about 9,000 cases of cryptosporidiosis were reported in 1989. The waterborne cases represent only a small fraction of all cases of diarrhea, but should the main source of water become contaminated, many cases of illness may occur in the local area of supply. Health authorities and water companies should develop a contingency plan for the recognition and management of an outbreak of the disease.

- 4162 Dan, M.; Gutman, R. PREVALENCE OF CRYPTOSPORIDIOSIS IN ISRAELI CHILDREN WITH DIARRHOEA. *Journal of Infection*, vol.21, 1990, pp.139-141.

In a prospective study, *Cryptosporidium* oocysts were detected in seven (3.25%) immunocompetent children with diarrhoea. The predominant clinical features were watery diarrhea and vomiting. The patients' mean age was 1.9 years and infection was more common in late summer-autumn than in the rest of the year. [published abstract]

- 4322 Daoud, A.; Zaki, M.; Pugh, R.N.H. et al. CRYPTOSPORIDIUM GASTROENTERITIS IN IMMUNOCOMPETENT CHILDREN FROM KUWAIT. *Tropical and Geographical Medicine*, vol.42, 1990, pp.113-118.

During an 18 month survey of children admitted to hospital with gastroenteritis, oocysts of the protozoan *Cryptosporidium* were detected in 35 cases (1.6% of the total 2205 surveyed). The affected children...were immunocompetent...Vomiting (94%) with dehydration (80%), fever (66%) and abdominal pain (26%) were clinical features of the diarrhoeal illness which lasted a mean 8.2 (range 3-14) days. [published abstract]

- 4230 Doyle, M.P. FOODBORNE ILLNESS: PATHOGENIC *ESCHERICHIA COLI*, *YERSINIA ENTEROCOLITICA*, AND *VIBRIO PARAHAEMOLYTICUS*. *The Lancet*, vol.336 no.8723, November 3, 1990, pp.1111-1115.

In this article the author describes the sources, modes of transmission, and pathogenesis of foodborne illness caused by *Yersinia enterocolitica*, *Vibrio parahaemolyticus*, and several strains of *Escherichia coli*.

- 4321 Dutta, S.R.; Khalfan, S.A.; Baig, B.H. et al. EPIDEMIOLOGY OF ROTAVIRUS DIARRHOEA IN CHILDREN UNDER FIVE YEARS IN BAHRAIN. *International Journal of Epidemiology*, vol.19 no.3, 1990, pp.722-727.

A case-control study in children <5 years of age was undertaken in Bahrain during a 2-year period to study the etiology of diarrhea. Rotavirus was the enteropathogen most commonly detected (20.8%) and represented 68.7% of the total positives from the cases. Rotavirus was detected more often in children of mothers with university education and in children from higher income homes.

- 3861 Eshel, G.; Mor, A.; Karpuch, J. et al. ACUTE GASTROENTERITIS DUE TO DOUBLE INFECTION WITH ENTEROPATHOGENIC ESCHERICHIA COLI OR SALMONELLA AND ANOTHER BACTERIAL PATHOGEN. Israeli Journal of Medical Science, vol.26, 1990, pp.316-318.

The aim of this study was to evaluate the relative incidence, etiology and clinical severity of gastroenteritis caused by more than one microorganism in infants...Patients with gastroenteritis due to a single agent compared with multiple pathogens had a milder course of disease, a milder degree of dehydration and acidosis, a lesser need for i.v. fluid treatment and shorter hospitalization. [published abstract]

- 4034 Gledhill, J.A.; Porter, J. DIARRHOEA DUE TO CRYPTOSPORIDIUM INFECTION IN THALASSAEMIA MAJOR. British Medical Journal, vol.301, July 28, 1990, pp.211-213.

This article consists of a case study of a 22-year-old woman with thalassaemia major who suffered from diarrhea due to Cryptosporidium.

- 4054 Griffiths, P.L.; Park, R.W.A. CAMPYLOBACTERS ASSOCIATED WITH HUMAN DIARRHOEAL DISEASE. Journal of Applied Bacteriology, vol.69, 1990, pp.281-301.

In this review [the authors] explore the increasingly complex taxonomy of the genus Campylobacter and discuss various aspects of the physiology of the organisms of relevance in isolation, cultivation, and survival. [They] consider isolation and identification techniques for those Campylobacters known to cause enteritis and discuss aspects of relevance to the control of the spread of Campylobacter enteritis via foods and water. [published abstract]

- 3913 Gunzburg, S.T.; Burke, V.; Bettelheim, K.A. HEP-2 CELL ADHERENCE AND VERO CELL CYTOTOXIN PRODUCTION BY EPEC STRAINS ISOLATED FROM CHILDREN WITH DIARRHOEA IN NEW ZEALAND. FEMS Microbiology Letters, vol.69, 1990, pp.181-186.

A total of 112 EPEC strains isolated from children with diarrhoea in New Zealand were examined for mannose-resistant HEp-2 cell adherence and production of exotoxins. Enterotoxin production was not detected in any of the strains examined. Verotoxin production was detected in 13 (11.6%) strains and of these 4 were also found to adhere to HEp-2 cells...These results suggest that if EPEC strains are to be considered as a cause of diarrhoea, the search for new virulence factors must be extended. [published abstract]

- 4268 Haffejee, I.E.; Moosa, A. ROTAVIRUS STUDIES IN INDIAN (ASIAN) SOUTH AFRICAN INFANTS WITH ACUTE GASTRO-ENTERITIS: II. CLINICAL ASPECTS AND OUTCOME. *Annals of Tropical Pediatrics*, vol.10, 1990, pp.245-254.

This report deals with the clinical and biochemical features of rotavirus gastroenteritis among Indian infants in South Africa, and the outcome in these patients. Mean total duration of rotavirus diarrhea was 5 days, with less than 2% of patients developing persistent diarrhea. Breastfeeding was associated with milder disease.

- 4622 Haq, J.A.; Rahman, K.M. CAMPYLOBACTER JEJUNI AS A CAUSE OF ACUTE DIARRHOEA IN CHILDREN: A STUDY AT AN URBAN HOSPITAL IN BANGLADESH. *Journal of Tropical Medicine and Hygiene*, vol.94, 1991, pp.50-54.

The importance of *C. jejuni* as an etiological agent of childhood diarrhea was investigated at an urban hospital in Dhaka, Bangladesh. The significantly higher isolation rate of *C. jejuni* as the single pathogen from diarrheal patients compared to healthy controls strongly indicates its association with childhood diarrhea in Bangladesh.

- 4651 Henry, F.J.; Bartholomew, R.K. EPIDEMIOLOGY AND TRANSMISSION OF ROTAVIRUS INFECTIONS AND DIARRHOEA IN ST. LUCIA, WEST INDIES. *West Indies Medical Journal*, vol.39, 1990, pp.205-212.

To determine the epidemiology and risk factors of rotavirus infections in St. Lucia, 229 children in 3 valleys with varying levels of sanitation were studied for 2 years. Results showed that 48% of infants experienced at least one infection during a 2-year period, and 17% of children were reinfected. Although crowding in the home was significantly associated with repeated infection, the incidence of infection was not affected by the degree of sanitation.

- 4642 Hill, S.M.; Phillips, A.D.; Walker-Smith, J.A. ENTEROPATHOGENIC ESCHERICHIA-COLI AND LIFE-THREATENING CHRONIC DIARRHOEA. *Gut*, vol.32, 1991, pp.154-158.

This study aimed to (1) determine the proportion of children presenting with acute EPEC infections who develop chronic diarrhea; (2) compare this with the prevalence of chronic diarrhea in children with diarrhea from other causes; (3) examine characteristics associated with EPEC and chronic diarrhea, and (4) review the treatment of these patients.

- 3924 Johnson, S.; Clabots, C.R.; Linn, F.V. et al. NOSOCOMIAL CLOSTRIDIUM DIFFICILE COLONISATION AND DISEASE. The Lancet, vol.336 no.8707, July 14, 1990, pp.97-100.

The authors studied the risk of *C. difficile* transmission among patients at a U.S. hospital. Of the 282 patients cultured, 60 were positive for *C. difficile*. Among this culture-positive group, 51 were symptom-free fecal excretors while the other 9 developed *C. difficile* diarrhea. Because the diarrheal patients were all on the same ward and the *C. difficile* isolates from their stools were nearly identical, nosocomial infection was implicated as the cause of the outbreak.

- 3827 Khan, M.M.A.; Baqai, R.; Iqbal, J. et al. CAUSATIVE AGENTS OF ACUTE DIARRHOEA IN THE FIRST 3 YEARS OF LIFE: HOSPITAL BASED STUDY. Journal of Gastroenterology and Hepatology, vol.5, 1990, pp.264-270.

For a period of 2 years, 402 patients and an equal number of controls from Pakistan were studied for the presence of diarrhea pathogens. Pathogens were isolated from 277 patients and 97 controls. Enteropathogenic *Escherichia coli* was the most frequently isolated pathogen in both the patient and the control group.

- 4724 Kiehlbauch, J.A.; Brenner, D.J.; Nicholson, M.A. et al. CAMPYLOBACTER BUTZLERI SP. NOV. ISOLATED FROM HUMANS AND ANIMALS WITH DIARRHEAL ILLNESS. Journal of Clinical Microbiology, vol.29 no.2, February 1991, pp.376-385.

In this article the authors report on two distinct groups of aerotolerant *Campylobacter* that were found among strains of human and animal origin. The characteristics of the isolates and the results of the phenotype tests and DNA studies are presented.

- 3810 LeBaron, C.W.; Furutan, N.P.; Lew, J.F. et al. VIRAL AGENTS OF GASTROENTERITIS: PUBLIC HEALTH IMPORTANCE AND OUTBREAK MANAGEMENT. Morbidity and Mortality Weekly Report, vol.39 no.RR-5, April 27, 1990, pp.1-24.

This issue focuses on viral agents of gastroenteritis, such as rotavirus, adenoviruses, and Norwalk viruses, and describes their epidemiologic and clinical features. It also presents various methods of detecting these pathogens as well as ways to prevent and control viral gastroenteritis outbreaks.

- 4621 Lee, L.A.; Taylor, J.; Carter, G. et al. *YERSINIA ENTEROCOLITICA* 0:3: AN EMERGING CAUSE OF PEDIATRIC GASTROENTERITIS IN THE UNITED STATES. *Journal of Infectious Diseases*, vol.163, 1991, pp.660-663.

After an outbreak of *Yersinia enterocolitica* infections among black children in Atlanta, a 7-hospital study was conducted to determine the importance of this pathogen in other communities with large black populations. Illnesses were clustered around the holidays, and 62% of patients had been exposed to raw pork intestines in the 2 weeks before the onset. *Y. enterocolitica* 0:3 is emerging as an important enteric pathogen in this country.

- 4445 Lewin, C.S. TREATMENT OF MULTIRESISTANT SALMONELLA INFECTION. *The Lancet*, vol.337 no.8732, January 5, 1991, p.47, letter.

In this letter to the editor, the author comments on *Salmonella* strains in India which are resistant to several drugs including ampicillin, chloramphenicol, and cotrimoxazole. These strains may also have decreased sensitivity to fluoroquinolones, which are currently used to treat enteric fever caused by multiresistant strains.

- 4067 Lopez-Vidal, Y.; Calva, J.J.; Trujillo, A. et al. ENTEROTOXINS AND ADHESINS OF ENTEROTOXIGENIC *ESCHERICHIA COLI*: ARE THEY RISK FACTORS FOR ACUTE DIARRHEA IN THE COMMUNITY? *Journal of Infectious Diseases*, vol.162, August 1990, pp.442-447.

A surveillance study of children in Mexico <5 years of age was designed to assess (1) the incidence of diarrhea-associated and asymptomatic intestinal infections by ETEC; (2) frequency of ETEC strains possessing CFA/I, CFA/II, or CFA/IV and the surface antigens of the latter two; and (3) whether the presence of enterotoxin of these CFAs is a risk factor for diarrhea.

- 4698 Magalhaes, M.; Da Silva, G.P.; Magalhaes, V. et al. *VIBRIO FLUVIALIS* AND *VIBRIO FURNISSII* ASSOCIATED WITH INFANTILE DIARRHEA. *Revista de Microbiologia*, vol.21 no.4, 1990, pp.295-298.

During a recent investigation on the etiology of infantile diarrhea in Recife, a city situated on the Northeast Coast of Brazil, eight (5%) strains of *Vibrio* were identified. Five strains were classified as *V. fluvialis* and the three others as *V. furnissii*. In six patients, *Vibrio* might have been the primary agent of the diarrhea. [published abstract]

- 4316 Menon, S.; Santosham, M.; Reid, R. et al. ROTAVIRUS DIARRHOEA IN APACHE CHILDREN: A CASE-CONTROL STUDY. International Journal of Epidemiology, vol.19 no.3, 1990, pp.715-721.

A case-control study of rotavirus diarrhea in Apache children up to 2 years old was conducted at the White Mountain Apache reservation in 1985 to identify risk factors for rotavirus diarrhea. Exposure to other children with diarrhea was the single most important factor for acquiring rotavirus diarrhea. Other risk factors were living in homes with septic tanks or in homes with poor environmental sanitation.

- 3890 Mitra, A.K.; Kabir, I.; Hossain, M.A. PIVMECILLINAM-RESISTANT SHIGELLA DYSENTERIAE TYPE I INFECTION IN BANGLADESH. The Lancet, vol.335 no.8703, June 16, 1990, pp.1461-1462, letter.

The authors of this letter to the editor report on the resistance of various strains of Shigella to common antibiotics and antimicrobials.

- 3938 Miwatani, T.; Honda, T.; Higashitsutsumi, M. et al. BACTERIAL AETIOLOGY OF INFANTILE DIARRHOEA IN PAPUA NEW GUINEA. Journal of Tropical Pediatrics, vol.36 no.3, June 1990, pp.101-103.

Bacterial examination of stools of children with diarrhea was carried out at Port Moresby, Papua New Guinea, where little information is available concerning the causative bacteria of diarrhoea. Shigellae, enterotoxigenic Escherichia coli, Bacillus cereus, Staphylococcus aureus, Campylobacter jejuni, and Aeromonas hydrophila were isolated for the first time in this country. [published abstract]

- 3889 Piddock, L.J.V.; Whale, K.; Wise, R. QUINOLONE RESISTANCE IN SALMONELLA: CLINICAL EXPERIENCE. The Lancet, vol.335 no.8703, June 16, 1990, p.1459, letter.

In this letter to the editor the authors comment on the treatment of Salmonella typhimurium infections with quinolones and discuss the issue of drug resistance.

- 3923 Piddock, L.J.V.; Wray, C.; McClaren, I. et al. QUINOLONE RESISTANCE IN SALMONELLA SPP: VETERINARY POINTERS. The Lancet, vol.336 no.8707, July 14, 1990, p.125, letter.

The authors of this letter to the editor report on various *Salmonella* isolates in animals which are resistant to quinolone drugs.

- 4853 Prasad, K.N.; Anupurba, S.; Dhole, T.N. ENTEROTOXIGENIC *CAMPYLOBACTER JEJUNI* AND *C. COLI* IN THE ETIOLOGY OF DIARRHOEA IN NORTHERN INDIA. *Indian Journal of Medical Research*, vol.93, March 1991, pp.81-86.

Fecal specimens from 320 subjects with and 450 subjects without diarrhea were screened for *Campylobacter jejuni* and *C. coli*. These pathogens were detected in 5% of subjects with diarrhea and in 0.7% of patients without. The results show that *C. jejuni* and *C. coli* are prevalent in the population of northern India and have a definite role in the pathogenesis of the disease irrespective of age.

- 3953 Regva, A.H.; Bravo, V.L.R.; Leal, M.C. et al. EPIDEMIOLOGICAL SURVEY OF THE ENTEROPATHOGENIC *ESCHERICHIA COLI* ISOLATED FROM CHILDREN WITH DIARRHOEA. *Journal of Tropical Pediatrics*, vol.36 no.4, August 1990, pp.176-179.

Escherichia coli was isolated in 382 (94%) of 406 children from 0 to 3 years of age who had been hospitalized for diarrhoea at the Hospital Municipal Salles Neto, Rio de Janeiro...Among the samples in which EPEC strains were isolated, 15% were children living in dwellings which had piped systems of water supply and drains, whereas with regard to those living in houses without such facilities, this percentage was raised to 24%. [published abstract]

- 4852 Roberts, D. *SALMONELLA* IN CHILLED AND FROZEN CHICKEN. *The Lancet*, vol.337 no.8747, April 20, 1991, pp.984-985, letter.

This letter reports on a laboratory survey in Great Britain of the incidence of *Salmonella* in raw, chilled, and frozen whole chicken. The results are reported.

- 4197 Rowe, B.; Ward, L.R.; Threlfall, E.J. et al. SPREAD OF MULTIRESISTANT *SALMONELLA* TYPHI. *The Lancet*, vol.336 no.8722, October 27, 1990, pp.1065-1066, letters.

In these letters to the editor the authors discuss the spread of strains of *Salmonella typhi* which are resistant to several drugs, such as chloramphenicol, trimethoprim, ampicillin, and ciprofloxacin.

- 3992 Ruuska, T.; Vesikari, T. ROTAVIRUS DISEASE IN FINNISH CHILDREN: USE OF NUMERICAL SCORES FOR CLINICAL SEVERITY OF DIARRHOEAL EPISODES. *Scandinavian Journal of Infectious Diseases*, vol.22, 1990, pp.259-267.

The present study describes the spectrum of rotavirus disease in a cohort of Finnish infants followed from birth to the age of 24-32 months...The mean severity score for the 65 episodes of rotavirus diarrhoea was 11.0 plus or minus 3.7 as compared to 5.6 plus or minus 3.2 for the 183 episodes of non-rotavirus diarrhoea in the same population. [published abstract]

- 4826 Siddique, A.K.; Baqui, A.H.; Eusof, A. et al. SURVIVAL OF CLASSIC CHOLERA IN BANGLADESH. *The Lancet*, vol.337 no.8750, May 11, 1991, pp.1125-1127.

The authors studied the distribution of two biotypes of *Vibrio cholerae* -- El Tor and classic -- in 24 rural districts of Bangladesh during epidemics in 1988-89. There was clustering of the classic biotype in the southern region and of the El Tor biotype in all other regions. These findings suggest that the southern coastal region is now the habitat of classic cholera.

- 4858 Simpson, V.R.; Euden, P.R.; Prys-Jones, R. et al. BIRDS, MILK, AND CAMPYLOBACTER. *The Lancet*, vol.337 no.8747, April 20, 1991, p.975, letters.

In regard to a *Lancet* article on the relation between human *Campylobacter* enteritis infection and consumption of milk from bottles attacked by birds, the first letter describes a study that took place in Truro, Cornwall. The study showed that magpies are commonly infected with *C. jejuni*. The second letter concerns studies carried out by the British Trust for Ornithology regarding bird attacks on milk bottles.

- 4303 Southern, J.P.; Smith, R.M.M.; Palmer, S.R. BIRD ATTACK ON MILK BOTTLES: POSSIBLE MODE OF TRANSMISSION OF CAMPYLOBACTER JEJUNI TO MAN. *The Lancet*, vol.336 no.8728, December 8, 1990, pp.1425-1427

A case-control study was carried out to test the hypothesis that the rise in the rate of *Campylobacter jejuni* infection in South Wales was due to the consumption or handling of milk from bottles that had been attacked by birds. There were strong associations between *Campylobacter* infection and doorstep delivery of milk bottles, a history of milk bottle

attack by birds, milk bottle attack by birds during the week before illness, and consumption of milk from attacked bottles during the week before illness.

- 4795 Taylor, D.N.; Kiehlbauch, J.A.; Tee, W. et al. ISOLATION OF GROUP 2 AEROTOLERANT CAMPYLOBACTER SPECIES FROM THAI CHILDREN WITH DIARRHEA. *Journal of Infectious Diseases*, vol.163, 1991, pp.1062-1067.

In 631 Thai children with diarrhea, *Campylobacter* species were isolated from 93 (15%). Atypical *Campylobacters* were isolated from 17 (3%) of the cases. In this article the authors discuss the isolation rates and describe the microbiologic and clinical features of the atypical strains.

- 3943 Toledo, M.R.F.; Trabulsi, L.R. FREQUENCY OF ENTEROINVASIVE *ESCHERICHIA COLI* IN CHILDREN WITH DIARRHEA AND HEALTHY CONTROLS, IN SAO PAULO, SP, BRAZIL. *Revista de Microbiologia, Sao Paulo*, vol.21 no.1, 1990, pp.1-4.

This study examined the frequency of EIEC bioserotypes in the feces of a large group of children aged 1-5 years with diarrhea and controls, screening the strains by biochemical and serological tests, and by the Sereny test. The results suggest that EIEC frequency increases with age and that it occurs more often in children living in slum areas than in developed areas.

- 4787 Wachsmuth, I.K.; Bopp, C.A.; Fields, P.I. et al. DIFFERENCE BETWEEN TOXIGENIC *VIBRIO CHOLERAE* 01 FROM SOUTH AMERICA AND US GULF COAST. *The Lancet*, vol.337 no.8749, May 4, 1991, pp.1097-1098, letter.

The authors of this letter to the editor describe the characteristics of the different *V. cholerae* strains isolated from South America and the U.S. gulf coast. Though both strains tend to be serotype Inaba, the isolates from the recent South American epidemic have some different characteristics from the gulf coast strains.

- 4658 Wahlgren, M. *ENTAMOEBIA COLI* AS A CAUSE OF DIARRHOEA? *The Lancet*, vol.337 no.8742, March 16, 1991, pp.675, letter.

The author of this letter to the editor comments that *Entamoeba coli* should not be disregarded as a diarrheal pathogen. He cites ten cases of persistent diarrhea which appeared to be linked to *Entamoeba coli*.

DIARRHEAL DISEASES AND RELATED CONDITIONS

- 4625 Abdelwahab, M.M.; Dirige, O.V.; Wallace, H.M. FEEDING PATTERNS OF INFANTS AND CHILDREN WITH PROTEIN-ENERGY MALNUTRITION (PEM) IN THE EQUATORIA REGION OF SUDAN. Nutrition Research, vol.11, 1991, pp.41-52.

The infant feeding practices and home environment of 346 children aged 0-5 years suffering from protein-energy malnutrition in Sudan was studied. Breastfeeding was the preferred type of infant feeding. Age of introduction of complementary foods was delayed; when such foods were offered, they were prepared and served improperly. Eighty-eight per cent of households did not have a clean water supply and latrine. Health education on complementary foods, proper weaning, and hygiene was recommended.

- 3860 Abdullah, A.M.A.; Shaheed, M.M.; Katugampola, S.M. et al. CONGENITAL CHLORIDE DIARRHOEA: CASE REPORT AND REVIEW OF THE LITERATURE. Annals of Tropical Pediatrics, vol.10, 1990, pp.71-74.

This article reports on a case of congenital chloride diarrhea in a Saudi boy which was suspected ante-natally, confirmed post-natally and managed successfully. The literature on this condition is also reviewed.

- 3769 Addiss, D.G.; Tauxe, R.V.; Bernard, K.W. CHRONIC DIARRHOEAL ILLNESS IN US PEACE CORPS VOLUNTEERS. International Journal of Epidemiology, vol.19 no.1, 1990, pp.217-218.

This article briefly describes a December 1987 survey which was carried out to determine the rates of persistent diarrhea among Peace Corps volunteers, to identify countries or regions with increased persistent diarrhea rates, and to obtain preliminary data on potential risk factors. Initial results showed that rates were highest in Haiti, and that there was a possibility that drinking unpasteurized milk contributed to diarrheal episodes.

- 4574 Al-Ahdal, M.N.; Qadri, S.M.H.; Al-Dayel, F. et al. INCIDENCE OF ROTAVIRAL GASTROENTERITIS AT A REFERRAL CENTRE IN SAUDI ARABIA. Annals of Saudi Medicine, vol.11 no.1, 1991, pp.19-22.

Over a period of 4.5 years, the incidence of rotaviral gastroenteritis in 1729 adults and children was investigated at a referral hospital in Saudi Arabia. Rotavirus was

isolated in 547 of the patients with the majority of cases occurring in in-patients. The authors conclude that rotavirus seems to be emerging as an opportunistic pathogen in debilitated and immunocompromised patients.

- 4850 Ananthakrishnan, S.; Mahadevan, S.; Srinivasan, S. NON-TYPHOIDAL SALMONELLOSIS INFECTION IN PERSISTENT CHILDHOOD DIARRHOEA FROM SOUTH INDIA. *Journal of Tropical Pediatrics*, vol.37 no.2, April 1991, pp.84-85, letter.

In a South Indian hospital department, 150 children out of 1807 who required admission for diarrhea had non-typhoidal Salmonellosis. 70% had the illness for 10-14 days while 30% had it for more than 14 days. 70% of the infants were bottle-fed and were in grades II-III malnutrition. Overall mortality was 8%. Antibiotics played a limited role in treatment.

- 4461 Andrews, P.A.; Wilkinson, P.R. DIARRHOEA AS A SIDE EFFECT OF DIGOXIN. *British Medical Journal*, vol.301, December 15, 1990, p.1398, letter.

In this letter to the editor the authors present the case of a 72 year old woman who developed persistent diarrhea as a side effect of taking the drug digoxin.

- 4247 Appleton, H. *FOODBORNE VIRUSES*. *The Lancet*, vol.336 no.8727, December 1, 1990, pp.1362-1364.

This article begins by examining the epidemiology of foodborne viruses, including food contaminated at the source and at the time and place of preparation. It then reviews information on hepatitis viruses, gastroenteritis viruses and virus detection.

- 4747 Araya, M.; Baiocchi, N.; Espinoza, J. et al. PERSISTENT DIARRHOEA IN THE COMMUNITY. *Acta Paediatrica Scandinavica*, vol.80, 1991, pp.181-189.

A study was carried out in Santiago, Chile to identify and describe characteristics of persistent diarrhea and subsequently to create a predictive model for persistent diarrhea to be used in preventive programs. Risk factors were identified and logistic regression was used to create a model to identify diarrheal patients who were at risk of prolonged illness.

- 3947 Araya, Q.M.; Baiocchi U., N.; Espinoza M., J. et al. EVALUACION RESTROSPECTIVA DE LA DIARREA PERSISTENTE EN UN SERVICIO PRIMARIO DE SALUD. Revista Chilena de Pediatria, vol.60 no.1, January-February 1989, pp.23-27.

Records of 36,358 pediatric consultations performed at a primary health care center in Santiago, Chile in 1984 were retrospectively evaluated in regard to persistent diarrhea. Diarrhea represented 5.1% of the consultations; of these, 6.3% were cases of persistent diarrhea. Such diarrhea was most common in children under 2 years of age and among malnourished patients.

- 4107 Arduan, A.O.; Castrillo, J.M.; Carreira, J. et al. GASTROENTERITIS CON EOSINOFILIA POR GIARDIA LAMBLIA. Revista Clinica Espanola, vol.187 no.2, June 1990, pp.38-40.

A case of gastroenteritis due to Giardia lamblia with severe dehydration and complicated with arterial thrombosis, accompanied by eosinophilia and increased serum IgE levels, is presented. The relationship between Giardia and eosinophilia and allergic manifestations is discussed as well as its pathogenesis. [published abstract]

- 4318 Badrinath, P.; Rao, T.S.K.; Bang, A. et al. COMMUNITY-BASED APPROACH TO PNEUMONIA. The Lancet, vol.336 no.8723, November 3, 1990, pp.1129-1130, letters.

Referring to a study on a community-based approach to pneumonia which appeared in the July 28, 1990 Lancet, the authors challenge Dr. Bang's assumption that baseline infant and childhood mortality rates in the control and intervention areas were similar. Dr. Bang responds in the letter that follows.

- 4232 Baird-Parker, A.C. FOODBORNE SALMONELLOSIS. The Lancet, vol.336 no.8725, November 17, 1990, pp.1231-1235.

The bacteriology and epidemiology of foodborne salmonellosis are described in this article as well as the costs in terms of food production and health care. The author also discusses the sources and modes of transmission, which mostly consist of consuming contaminated food or water. Since the main source of the pathogen is animals used for food, prevention methods must include careful testing and supervision of livestock.

- 4423 Bang, A.; Bang, R. DECLINE IN INCIDENCE OF PNEUMONIA. The Lancet, vol.337 no.8734, January 19, 1991, p.188, letter.

In this letter to the editor, the authors discuss Khan et al's study of ARI in Abbottabad, Pakistan (The Lancet, October 13, 1990). They suggest that the reduction in ARI incidence, which was attributed to community based management in the study, could have been the result of environmental or methodological changes.

- 3865 Bang, A.T.; Bang, R.A.; Tale, O. et al. REDUCTION IN PNEUMONIA MORTALITY AND TOTAL CHILDHOOD MORTALITY BY MEANS OF COMMUNITY-BASED INTERVENTION TRIAL IN GADCHIROLI, INDIA. The Lancet, vol.336 no.8709, July 28, 1990, pp.201-206.

This community-based intervention trial in Gadchiroli, India aimed to reduce childhood mortality from pneumonia. Interventions included mass education about childhood pneumonia and case management of pneumonia by paramedics, village health workers and TBAs who were trained to recognize pneumonia and treat it with co-trimoxazole. The trial succeeded in significantly reducing childhood mortality due to pneumonia in the intervention area.

- 4156 Behrens, R.H.; Tomkins, A.M.; Roy, S.K. ZINC SUPPLEMENTATION DURING DIARRHOEA, A FORTIFICATION AGAINST MALNUTRITION? The Lancet, vol.336 no.8712, August 18, 1990, letter.

The authors examined the effect of zinc supplementation on linear growth of children in urban Dhaka presenting with acute diarrhea, and followed them at home over 8 weeks during their catch-up growth phase. In this letter to the editor, they report the results of a double-blind, randomized controlled trial with a zinc acetate supplement.

- 4834 Bennish, M.; Griffiths, J.; Salam, A. et al. CLINICAL UPDATE: SHIGELLOSIS. Dialogue on Diarrhoea, no.44, March 1991, 4p.

This article provides an overview of shigellosis, including cause, identification through stool cultures or clinical signs, treatment and prevention. Key components of shigellosis treatment are antibiotics, continued feeding, replacement of fluid loss, and follow-up within 48 hours.

- 4326 Briend, A. IS DIARRHOEA A MAJOR CAUSE OF MALNUTRITION AMONG THE UNDER-FIVES IN DEVELOPING COUNTRIES? A REVIEW OF AVAILABLE EVIDENCE. European Journal of Clinical Nutrition, vol.44, 1990, pp.611-628.

To evaluate whether diarrhea is a major cause of malnutrition or whether the association between diarrhea and growth retardation can be explained by a higher susceptibility of malnourished children to diarrhea, all recent studies examining the association were reviewed. That malnutrition predisposes to diarrhea seems likely; however, it is not clear whether diarrhea is a major cause of malnutrition.

- 4163 Buyukgebiz, B.; Ozalp, I.; Oran, O. INVESTIGATION OF SERUM VITAMIN A LEVELS OF CHILDREN WHO HAD A HISTORY OF RECURRENT DIARRHOEA AND ACUTE RESPIRATORY INFECTIONS IN ANKARA. Journal of Tropical Pediatrics, vol.36 no.5, October 1990, pp.251-255.

The present study was carried out to assess the vitamin A status of preschool children from low socioeconomic families living in the periurban population of Ankara, Turkey, and who have a history of recurrent acute respiratory infections or diarrhea. Sixty-four percent of the children examined had low levels of serum vitamin A.

- 4761 Campbell, H.; Byass, P.; Greenwood, B.M. ACUTE LOWER RESPIRATORY INFECTIONS IN GAMBIAN CHILDREN: MATERNAL PERCEPTION OF ILLNESS. Annals of Tropical Paediatrics, vol.10, 1990, pp.45-51.

A study of mothers' perceptions of childhood acute respiratory infections (ARI) was performed in a rural Gambian population. Mothers recognized ARI as a severe disease and recognized fast and difficult breathing as features which discriminated it from upper respiratory infections. They sought treatment on 51% of occasions when chest pain was reported and on 70% of occasions when "open chest" was reported. Even in poorly educated populations, it should be possible to educate mothers to recognize ARIs and to seek treatment.

- 4790 CAMPYLOBACTER/CRYPTOSPORIDIUM INFECTION FOLLOWING A SCHOOL FARM VISIT. Weekly Epidemiological Record, no.17, April 26, 1991, p.123.

This news note briefly describes the incidence of Campylobacter and Cryptosporidium infection among a group

school children and adults visiting a farm in Scotland. The specific vehicle of infection was not identified, although the consumption of unpasteurized milk from the farm was suspected.

- 4241 Casemore, D.P. **FOODBORNE PROTOZOAL INFECTION.** The Lancet, vol. 336 no. 8728, December 8, 1990, pp. 1426-1432.

This articles discusses foodborne transmission of protozoa which, though uncommon, is almost certainly underdetected. Foodborne enteric infections such as giardiasis, amoebiasis and cryptosporidiosis are discussed, as are foodborne systemic infections. Measures to prevent infection are described.

- 4779 **CHOLERA -- NEW JERSEY AND FLORIDA.** Morbidity and Mortality Weekly Report, vol.40 no.17, May 3, 1991, pp.287-289.

This article briefly reports on cases of cholera which have been reported in New Jersey and Florida. In New Jersey the cases were linked to consumption of illegally transported crab meat which was contaminated. No cholera cases have been attributed to commercially imported foods. The single case in Florida was that of a woman who had traveled in Ecuador and consumed raw seafood.

- 4628 **CHOLERA -- PERU, 1991.** Journal of the American Medical Association, vol.265 no.10, March 13, 1991, p.1232.

This brief article reports on an outbreak of cholera in Peru in January 1991. An editorial note by the Centers for Disease Control comments on the current pandemic of cholera and public health measures to prevent and treat cholera.

- 4793 **CHOLERA IN 1990.** Weekly Epidemiological Record, no.19, May 10, 1991, pp.133-136.

This article presents statistics on the global incidence of cholera in 1990. The disease was reported by 36 countries around the world with a total of 69,361 cases. The total number of cases in each reporting country is provided as well as a map indicating countries in which cholera is endemic.

- 4784 CHOLERA IN PERU, 1991. CAREC Surveillance Report, vol.17 no.2, February 1991, pp.1-3.

A report on the recent cholera epidemic in Peru is presented in this article as well as a brief history of previous cholera pandemics. Control measures largely focus on improving sanitation and hygiene while treatment entails oral rehydration or IV therapy for the victims. Travelers in endemic areas should avoid eating raw seafood and drinking potentially contaminated water.

- 4631 CHOLERA IN PERU. The Lancet, vol.337 no.8740, March 2, 1991, p.546.

This news note briefly reports on the status of the current cholera outbreak in Peru. The relief efforts to date are also discussed.

- 4679 CHOLERA INFORMATION KIT. Geneva, World Health Organization, 1991, np.

This information kit provides general information about cholera as well as articles and news notes about the current outbreak in Latin America. There is also a set of guidelines about cholera management which include preparations for possible outbreaks, early responses to outbreaks, cholera treatment, prevention strategies, epidemiologic investigation, and follow-up after controlling an outbreak.

- 4802 CHOLERA SITUATION IN THE AMERICAS. Epidemiological Bulletin, vol.12 no.1, 1991, pp.1-24.

This document provides an overview of the cholera epidemic in Latin America. It specifically reviews the status of the outbreaks in Peru, Ecuador, and Colombia. In addition, it discusses the following topics: historical background of cholera in the Americas; epidemiological surveillance; clinical diagnosis and treatment; laboratory diagnosis; environmental health and prevention strategies; and risk of transmission of cholera by foods.

- 4645 CHOLERA: SMALL RISK OF CHOLERA TRANSMISSION BY FOOD IMPORTS. Weekly Epidemiological Record, no.8, February 22, 1991, pp.55-56.

WHO has no documented evidence of a cholera outbreak occurring as a result of the importation of food across

international borders. In this brief article, WHO reviews various kinds of foods and the possibilities of contamination.

- 4743 CHOLERA: THE EPIDEMIC IN PERU -- PART I. Weekly Epidemiological Record, no.9, March 1, 1991, pp.61-63.

This article provides a brief historical overview of cholera and how it has spread globally. It also provides statistics on the current epidemic in Peru. As of February 21, 1991, 32,585 cases and 139 deaths have been reported. The proportion of persons hospitalized is 20% and the overall case fatality rate is 0.4%.

- 4736 CHOLERA: THE EPIDEMIC IN PERU -- PART II. Weekly Epidemiological Record, no.10, 1991, pp.65-70.

This article summarizes the measures taken to control the current cholera epidemic in Peru. The contributions of the United Nations and foreign governments are outlined as well as actions taken by the Peruvian government. Basic control guidelines, including treatment, prevention, sanitation, and food safety, are also presented.

- 4782 CHOLERA: THE NEED FOR PREPAREDNESS. WHO Drug Information, vol.4 no.4, 1990, pp.180-181.

This article briefly discusses the etiology of cholera as well as measures to control outbreaks and treat victims. Control measures largely focus on improving sanitation and providing prevention education. Treatment should mainly consist of oral rehydration, with IV therapy and antibiotics reserved for very severe cases.

- 4129 Chowdhury, M.K.; Gupta, V.M.; Bairagi, R. et al. DOES MALNUTRITION PREDISPOSE TO DIARRHOEA DURING CHILDHOOD? EVIDENCE FROM A LONGITUDINAL STUDY IN MATLAB, BANGLADESH. European Journal of Clinical Nutrition, vol.44, 1990, pp.515-525.

A study of 1262 children in Matlab, Bangladesh was carried out to observe if diarrheal illness during one period influenced diarrheal illness in a subsequent period and if this relationship masked the association between diarrhea and malnutrition. Results showed that children who had one diarrheal episode were more likely to have a second episode during the two months following the original attack. Data

also indicated that children with no previous diarrhea showed a positive association between malnutrition and subsequent diarrhea; however, the pattern among those with previous diarrhea was not understandable.

- 1460 Conlon, C.P.; Peto, T.E.A. INFECTIOUS DIARRHOEA. *International Journal of Colorectal Disease*, vol.5, 1990, pp.236-240.

This review article presents the different types of infectious gastroenteritis, the common etiologic agents, and treatment approaches. The types of diseases discussed include inflammatory and non-inflammatory diarrheas, invasive infections, and diarrhea associated with AIDS. Treatment measures reviewed include fluid therapy and use of antibiotics.

- 1094 Connolly, G.M.; Forbes, A.; Gazzard, B.G. INVESTIGATION OF SEEMINGLY PATHOGEN-NEGATIVE DIARRHOEA IN PATIENTS INFECTED WITH HIV1. *Gut*, vol.31, 1990, pp.886-889.

[In a British hospital] thirty-three consecutive patients infected by human immunodeficiency virus type 1 (HIV1) with persistent diarrhoea which remained undiagnosed after microbiological examination of six stool samples and rectal histology were investigated for malabsorption...Evidence for malabsorption existed in 24 patients...A simple scoring system based on degree of weight loss and Schilling test results may help to identify the HIV positive patient with seemingly pathogen-negative diarrhoea in whom further investigations are likely to show a specific cause.
[published abstract]

- 295 Crippen, P. PERSISTENT DIARRHEA. *EMR Epidemiological Bulletin*, no.15, October 1989, pp.14-17.

This brief article reviews the risk factors and clinical management of persistent diarrhea. It appears in both English and Arabic.

- 640 Cruz, J.R.; Pareja, G.; Caceres, P. et al. ENFERMEDAD DIARREICA AGUDA Y PERSISTENTE, Y SUS CONSECUENCIAS NUTRICIONALES EN INFANTES DE GUATEMALA. *Archivos Latinoamericanos de Nutricion*, vol.39 no.3, September 1989, pp.263-277.

To investigate the epidemiology of acute and persistent diarrhea, 130 infants in a marginal urban area of Guatemala City were studied. The children were weighed and measured to determine nutritional status. The infants suffered 5.2

episodes annually; 9.4% of all episodes lasted at least 2 weeks. Diarrheal illnesses had a deleterious effect on nutritional status.

- 4835 Cutts, F.T.; Henderson, R.H.; Clements, C.J. et al. PRINCIPLES OF MEASLES CONTROL. Bulletin of the World Health Organization, vol.69 no.1, 1991, pp.1-7.

This paper reviews the epidemiology of measles in the pre- and post-immunization eras, based on examples from Africa and the USA, and relates this to the effect of immunization programs predicted by mathematical models. Recommendations are made for the improvement of measles control in developing countries.

- 4632 Danna, P.L.; Urban, C.; Bellin, C. et al. ROLE OF CANDIDA IN PATHOGENESIS OF ANTIBIOTIC-ASSOCIATED DIARRHOEA IN ELDERLY INPATIENTS. The Lancet, vol.337 no.8740, March 2, 1991, pp.511-514.

The part that candida plays in antibiotic-associated diarrhoea was investigated in 24 elderly inpatients (mean age 74 years) who tested negative for Clostridium difficile toxin and other intestinal pathogens. 7 had intestinal overgrowth of Candida species...None of the 24 matched, antibiotic-treated controls without diarrhoea had candida overgrowth...In patients without candida overgrowth, diarrhoea persisted until antibiotics were withdrawn, at a mean of 16 days after study entry. [published abstract]

- 4274 del Val, A.; Moles, J.-R.; Garrigues, V. VERY PROLONGED DIARRHEA ASSOCIATED WITH AEROMONAS HYDROPHILA. American Journal of Gastroenterology, vol.85 no.11, 1990, p.1535, letter.

This letter to the editor reports on an unusual case of very prolonged diarrhea associated with Aeromonas infection in a healthy woman. The woman was successfully treated with Norfloxacin.

- 3849 LA DIARRHEE DU CHACAL. Developpement et Sante, no.87, 1990, pp.16-17.

This fable, concerning a jackal with diarrhea, can be read to children to warn them of the danger of dehydration. Questions for discussion are included at the end.

- 4111 DIARRHOEA AND POTASSIUM. Dialogue on Diarrhoea, issue 41, June 1990, p.7.

This article explains how diarrhea can deplete the body's potassium levels and how the deficiency can be corrected by using packaged ORS or adding potassium-rich foods to the patient's diet.

- 4422 Doctor, V.S. NUTRITION UPDATE: VITAMIN A DEFICIENCY. ORT Newsletter, vol.3 no.2, April-June 1990, p.3.

The prevalence of vitamin A deficiency in the Philippines is presented in this brief article. The author also outlines basic treatment for this condition based on the WHO recommendations for vitamin A supplementation.

- 4716 Dupin, H. INTERACTIONS BETWEEN NUTRITION DISORDERS AND INFECTION. Children in the Tropics, no.189, 1990, pp.18-29.

In this article the author discusses the following nutritional issues: 1) the interactions between protein-energy malnutrition and infection; 2) the effects of certain vitamin deficiencies (A, C, B9, B6) on immune systems; and 3) the effects of certain mineral deficiencies (zinc, iron) on immunity. He also reviews vitamin and mineral supplementation as a way to combat these deficiencies.

- 4819 DuPont, H. CHEMOPROPHYLAXIS REMAINS AN OPTION IN TRAVELERS' DIARRHEA. American Journal of Gastroenterology, vol.86 no.4, 1991, pp.402-404.

An NIH Consensus Development Panel recommended against routine chemoprophylaxis for travelers. However, the author of this article suggests that it is possible to identify persons who could be encouraged to take chemoprophylaxis. These persons should constitute a minority, and no one should take prophylaxis for a stay longer than three weeks due to possible adverse side effects.

- 3894 Ebrahim, G.J. DIARRHOEA DUE TO INTESTINAL PARASITES. Journal of Tropical Pediatrics, vol.36 no.3, June 1990, pp.98-100.

The author of this editorial describes several types of parasitic diarrhea. The diarrheas described include amebiasis, giardiasis, trichuriasis, strongyloidiasis, balantidiasis, schistosomiasis, and intestinal capillariasis.

- 3773 Ebrahim, G.J. PERSISTENT DIARRHOEA. *Journal of Tropical Pediatrics*, vol.36 no.2, April 1990, pp.50-51.

The author of this editorial describes and defines persistent diarrhea, identifies some risk factors associated with the condition, and presents some possible treatment methods.

- 4201 Edelson, G.W.; Whitehouse, F.W.; Bennish, M. et al. HYPOGLYCEMIA DURING DIARRHEA IN CHILDHOOD. *New England Journal of Medicine*, vol.323 no.14, October 14, 1990, pp.1000-1001, letters.

In these letters to the editor, the authors explore the reasons why hypoglycemia during diarrhea in childhood can result in death.

- 4082 FAILURE TO THRIVE REVISITED. *The Lancet*, vol.336 no.8716, September 15, 1990, pp.662-663.

This article comments on a study by Batchelor and Kerslake that suggests that much failure to thrive is missed by health professionals, and that the feeding process is the root cause.

- 4754 Farah, D. THE TIME OF CHOLERA. *The Washington Post*, April 23, 1991, pp.10-14.

This article focuses on the socioeconomic effects of the current Latin American cholera epidemic on Tumaco, one of the poorest regions in Colombia. Extreme poverty combined with poor sanitation is contributing to the spread of the disease. In addition, many people are unwilling to take precautionary measures such as boiling water due to traditional beliefs about disease transmission and prevention.

- 4680 Farthing, M.J.G. REVIEW ARTICLE: PREVENTION AND TREATMENT OF TRAVELLERS' DIARRHOEA. *Alimentary Pharmacology and Therapeutics*, vol.5, 1991, pp.15-30.

This review article describes the risk factors, etiology, and prevention of travelers' diarrhea, including dietary factors, antimicrobial chemotherapy, and non-antibiotic approaches. Treatment of such diarrhea, based on the use of ORT, is also discussed. A variety of antibiotics are known to reduce the duration of travelers' diarrhea; however,

these cannot be recommended.

- 4155 Fazeel-uz-Zaman Alvi, M. USE OF ORAL REHYDRATION SALT IN DIABETIC KETOACIDOSIS. *The Lancet*, vol.336 no.8721, October 20, 1990, pp.1009-1010, letter.

This letter to the editor reports on two patients with diabetic ketoacidosis treated at a rural clinic in Pakistan with ORS and insulin. These cases showed that loss of fluid, sodium, and potassium, and the acidosis of diabetic ketoacidosis can be corrected with ORS.

- 4859 Fazeel-uz-Zaman Alvi, M. USE OF ORAL REHYDRATION SALT IN DIABETIC KETO-ACIDOSIS. *Pakistan Journal of Medical Research*, vol.29 no.2, 1990, pp.115-117.

Diabetic ketoacidosis is potentially a life threatening condition, which warrants prompt and effective treatment. Two cases of diabetic ketoacidosis from a rural clinic are described. Both were successfully managed by oral rehydration salt (ORS) and insulin injections. ORS can be safely and effectively given in diabetic ketoacidosis where facilities for intravenous fluids and laboratory measurement of blood glucose and electrolytes are not available. [published abstract]

- 4650 Felton, J.M.; Harries, A.D.; Beeching, N.J. et al. ACUTE GASTROENTERITIS: THE NEED TO REMEMBER ALTERNATIVE DIAGNOSIS. *Postgraduate Medical Journal*, vol.66, 1990, pp.1037-1039.

Five hundred and ninety-four patients were consecutively admitted to an infectious disease unit over a 2-year period with a referral diagnosis of acute gastroenteritis or food poisoning. In 175 (29%) patients, gastrointestinal symptoms were associated with a condition other than gastrointestinal infection...Four illustrative case histories are presented to emphasize the need for a high index of suspicion if diseases such as malaria, septicaemia or appendicitis are not to be missed. [published abstract]

- 4117 Fernandez-Monras, F.; Vayreda, E.; Rosell, F. et al. BACTERIEMIA POR VIBRIO CHOLERAЕ NO 01. *Medicina Clinica-Barcelona*, 1990?, p.596, letter.

In this letter to the editor the authors describe the case of a 70-year-old patient infected with *Vibrio cholerae* as a result of eating shellfish.

- 4659 Fowler, N.G.; Mead, G.C. SALMONELLA IN POULTRY. The Lancet, vol.337 no.8742, March 16, 1991, p.675, letter.

In this letter to the editor the authors endorse the use of competitive exclusion technique as a means to reduce Salmonella in poultry.

- 4283 FROM SEED TO FRUIT: THE DIRT ON HOME GARDENING. Vital News, vol.1 no.2, November 1990, pp.2-3+.

Promoting home gardening and instilling awareness among care providers and families about the importance of vitamin A in the diet can permanently improve the intake of vitamin A-rich foods. This article discusses the obstacles to implementing home gardening projects successfully.

- 4314 Galan, P.; Samba, C.; Luzeau, R. et al. VITAMIN A DEFICIENCY IN PRESCHOOL AGE CONGOLESE CHILDREN DURING MALARIAL ATTACKS: PART 2: IMPACT OF PARASITIC DISEASE ON VITAMIN A STATUS. International Journal of Vitamin and Nutrition Research, vol.60, 1990, pp.224-228.

The vitamin A status of 454 pre-school aged children in the Congo was evaluated by the impression cytology method with transfer and by the determination of plasma retinol. The authors conclude that there is a significant relationship between vitamin A deficiency and a malarial attack.

- 4663 Gasser, R.A.; Magill, A.J.; Oster, C.N. et al. THE THREAT OF INFECTIOUS DISEASE IN AMERICANS RETURNING FROM OPERATION DESERT STORM. New England Journal of Medicine, vol.324 no.12, March 21, 1991, pp.859-864.

In this article the authors discuss various infectious diseases which US military personnel recently deployed in the Middle East may have contracted. The types of diseases reviewed include gastrointestinal illnesses and enteric fevers such as malaria and Congo-Crimean hemorrhagic fever. The extent of these diseases in the Middle East and possible modes of treatment are outlined.

- 4781 GASTROENTERITIS ASSOCIATED WITH CONSUMPTION OF RAW SHELLFISH -- HAWAII, 1991. Morbidity and Mortality Weekly Report, vol.40 no.18, May 10, 1991, pp.303-305.

This article reports on 12 cases of gastroenteritis in Hawaii which were attributed to consumption of raw clams and

oysters. An etiologic agent was not identified. The implicated seafood was inappropriately labeled by distributors, thus causing confusion over the exact place of harvest.

- 4282 Gendrel, D. DIARRHEES PARASITAIRES DE L'ENFANT. Annales de Pediatrie, vol.37 no.9, 1990, pp.590-593.

This article describes diagnosis and treatment of diarrhea due to parasites such as *G. lamblia*, ameba, *Cryptosporidium*, and strongyloides.

- 4576 Georges-Courbot, M.C.; Cassel-Beraud, A.M.; Gouandjika, I. et al. A COHORT STUDY OF ENTERIC CAMPYLOBACTER INFECTION IN CHILDREN FROM BIRTH TO TWO YEARS IN BANGUI (CENTRAL AFRICAN REPUBLIC). Transactions of the Royal Society of Tropical Medicine and Hygiene, vol.84, 1990, pp.122-125.

A cohort of 111 children from Bangui, Central African Republic, was followed for enteric campylobacter infection from birth until the age of 2 years...349 episodes of diarrheal illness were recorded (1.6 per child-year). Campylobacters were isolated from 41 (11.7%) of the 349 episodes, but in half of them another enteric pathogen was also isolated...Campylobacter infections were statistically associated with the presence of live poultry and the lack of piped water in homes. [published abstract]

- 4087 Gilks, C.F.; Brindle, R.J.; Otieno, L.S. et al. LIFE-THREATENING BACTERAEMIA IN HIV-1 SEROPOSITIVE ADULTS ADMITTED TO HOSPITAL IN NAIROBI, KENYA. The Lancet, vol.336 no.8714, September 1, 1990, pp.545-549.

During 6 months, 506 consecutive adult emergency admissions to hospital in Nairobi were enrolled in a study of bacteraemia and HIV infection. 19% were HIV-1 antibody positive. Significantly more HIV-seropositive than seronegative patients had bacteraemia (26% vs 6%)...The findings suggest that non-opportunistic bacteria are important causes of morbidity and mortality in HIV-infected individuals in Africa. [published abstract]

- 4652 Golden, S.E.; Fitzgerald, J.F. PERSISTENT DIARRHEA IN A YOUNG INFANT. Pediatric Infectious Disease Journal, vol.10 no.2, February 1991, pp.169-170, letter.

In this letter to the editor an inquiry is made about diagnosing an infant with persistent diarrhea. In his

response, Dr. Joseph Fitzgerald offers a differential diagnosis which suggested that the child may have a type of colitis or rectal/distal colon mass lesion. He also discusses what further analysis can be done to reach a final diagnosis.

- 3958 Goodgame, R.W. AIDS IN UGANDA--CLINICAL AND SOCIAL FEATURES. New England Journal of Medicine, vol.323 no.6, August 9, 1990, pp.383-389.

This article discusses some unique clinical features of AIDS in Africa that influence clinical decision making and that should also bear on planning for the care of patients. These features may provide a framework for mobilizing an appropriate response to the clinical problems of patients. The problems of pediatric AIDS are not discussed.

- 4133 Gopalan, C. VITAMIN A AND CHILD MORTALITY. NFI Bulletin, vol.11 no.3, July 1990, pp.1-3.

The author of this article comments on the use of vitamin A supplements as a means of reducing childhood mortality in developing countries. He briefly reviews two studies from Indonesia and India and draws the conclusion that mass supplementation programs are only interim measures that cannot be viewed as long-term solutions. Instead, promotion of better overall nutrition and increased access to health care should be the goals on which to focus developing countries' resources.

- 4620 Greenberg, B.L.; Sack, R.B.; Salazar-Lindo, E. et al. MEASLES-ASSOCIATED DIARRHEA IN HOSPITALIZED CHILDREN IN LIMA, PERU: PATHOGENIC AGENTS AND IMPACT ON GROWTH. Journal of Infectious Diseases, vol.163, 1991, pp.495-502.

This case-control study evaluated the enteric pathogens isolated from children with measles-associated diarrhea compared with children with only diarrhea during the acute stage of infection during hospitalization. Growth and diarrheal morbidity were evaluated for one month after acute illness. The data support the theory of measles as a risk factor for developing diarrhea.

- 4709 Greenson, J.K.; Belitsos, P.C.; Yardley, J.H. et al. AIDS ENTEROPATHY: OCCULT ENTERIC INFECTIONS AND DUODENAL MUCOSAL ALTERATIONS IN CHRONIC DIARRHEA. Annals of Tropical Medicine, vol.114, 1991, pp.366-372.

A case-control study was conducted to investigate occult enteric infections and morphologic changes in the small intestine in advanced AIDS patients with chronic diarrhea of undefined cause. One half of the cases showed an occult infectious cause. The authors discuss the characteristics of this condition and suggest possible causes.

- 4669 Grohmann, G.; Glass, R.I.; Gold, J. et al. OUTBREAK OF HUMAN CALICIVIRUS GASTROENTERITIS IN A DAY-CARE CENTER IN SYDNEY, AUSTRALIA. *Journal of Clinical Microbiology*, vol.29 no.3, March 1991, pp.544-550.

This article reports on an outbreak of gastroenteritis among staff and children at a day care center in Sydney, Australia between January and March 1988. Human calicivirus (HCV) was identified as the principal etiologic agent although the mode of transmission could not be determined. The authors suggest that HCV may be a common cause of gastroenteritis in children that is unrecognized due to insensitive methods of detection.

- 4466 Haberberger, R.L.; Mikhail, I.S.; Ismail, T.F. ENTERITIS DUE TO MULTI-RESISTANT ENTEROADHERENT ESCHERICHIA COLI. *The Lancet*, vol.337 no.8735, January 26, 1991, pp.235-236, letter.

The authors of this letter to the editor discuss the prevalence of travelers diarrhea caused by enteroadherent *E. coli* in North Africa and the Middle East, especially among military personnel currently stationed there.

- 4575 Haberberger, R.L.; Diniega, B.M.; Mikhail, I.A. et al. TRAVELERS' DIARRHEA AMONG UNITED STATES MILITARY PERSONNEL DURING JOINT AMERICAN-EGYPTIAN ARMED FORCES EXERCISES IN CAIRO, EGYPT. *Military Medicine*, vol.156, January 1991, pp.27-29.

The authors conducted a study of travelers diarrhea in US military personnel deployed in Cairo, Egypt, during July and August 1987. Acute diarrhea requiring medical attention developed in 183 of 4500 troops. Enteric pathogens isolated included enterotoxigenic *E. coli*, *Shigella*, *Campylobacter*, *Salmonella*, and *V. cholerae*. A survey of personnel not seeking medical care indicated that 40% of troops may have had diarrhea during this deployment. Travelers diarrhea could cause substantial morbidity in military personnel stationed in Egypt.

- 4800 Haffejee, I.E. THE PATHOPHYSIOLOGY, CLINICAL FEATURES AND MANAGEMENT OF ROTAVIRUS DIARRHOEA. Quarterly Journal of Medicine, new series 79 no.288, April 1991, pp.289-299.

It has been estimated that one fifth of all deaths from childhood diarrhea are rotavirus related. In this article the author describes the clinical features, pathophysiology, and treatment of rotavirus diarrhea. He states that oral rehydration therapy should be the main form of treatment for diarrhea caused by rotavirus.

- 4547 Haffejee, I.E. PERSISTENT DIARRHOEA FOLLOWING GASTROENTERITIS. Journal of Diarrhoeal Diseases Research, vol.8 no.4, December 1990, pp.143-146.

This article discusses the cases of 17 infants with persistent diarrhea who were admitted to a South African hospital. The author describes the patients, the clinical features of their conditions, treatment procedures, and the outcome of the treatment. Basic treatment consisted of oral rehydration supplemented with intravenous fluid when necessary.

- 4238 Halsey, N.A.; Boulos, R.; Holt, E. et al. TRANSMISSION OF HIV-1 INFECTIONS FROM MOTHERS TO INFANTS IN HAITI: IMPACT ON CHILDHOOD MORTALITY AND MALNUTRITION. Journal of the American Medical Association, vol.264 no.16, October 24/31, 1990, pp.2088-2092.

A study of 4,588 pregnant women in a high risk Haitian population was conducted in order to quantify the impact of maternal HIV-1 infections on birth weight, gestational age, child survival, and malnutrition. Results showed that HIV-1 seropositive women were more likely to deliver babies who were premature and of low birth weight as well as malnourished at 3 and 6 months of age. Mortality rates of infants born to HIV-1 seropositive mothers were also higher than those of babies born to seronegative women. In addition, the estimated rate of mother-to-infant HIV-1 transmission in breastfed infants was 25%, similar to rates reported for non-breastfed children in Europe and in the US.

- 4471 Hammer, H.F.; Fine, K.D.; Santa Ana, C.A. et al. CARBOHYDRATE MALABSORPTION: ITS MEASUREMENT AND ITS CONTRIBUTION TO DIARRHEA. Journal of Clinical Investigation, vol.86, December 1990, pp.1936-1944.

The purpose of this series of experiments was to understand

better the effect of carbohydrate (CHO) malabsorption on fecal water output. The data indicated that excessive fecal excretion of CHO and organic acids is common in patients with malabsorption syndrome. CHO malabsorption can contribute significantly to fecal calorie loss in these patients and can be the major cause of their diarrhea.

- 3862 Han, A.M.; Khin, M.M.; Aye, T. et al. MEASLES-ASSOCIATED DIARRHOEA IN THE INFECTIOUS DISEASES HOSPITAL, RANGOON. *Journal of Tropical Medicine and Hygiene*, vol.93, 1990, pp.205-209.

A study was conducted in the Infectious Diseases Hospital in Rangoon (Burma) to determine the magnitude of measles-associated diarrhoea morbidity and mortality in children under 6 years of age contributing to the overall diarrhoeal morbidity and mortality, and to determine the bacterial pathogens of measles-associated diarrhoea cases. [published abstract]

- 4275 Hecht, F.M.; Johanson, J.; Sonnenberg, A. DIARRHEA AND AIDS. *Annals of Internal Medicine*, vol.113 no.10, November 15, 1990, pp.804-805, letter.

These two letters to the editor discuss the effects of symptomatic treatment of AIDS-related diarrhea.

- 4845 Henry, F.J. THE EPIDEMIOLOGIC IMPORTANCE OF DYSENTERY IN COMMUNITIES. *Reviews of Infectious Diseases*, vol.13 suppl.4, 1991, pp.S238-S244.

This paper presents findings from several communities in Bangladesh on the importance of dysentery with respect to its prevalence at different ages, its relationship with pathogens, and its association with persistent diarrhea, nutritional status, and death. The impact of improved hygiene on the prevalence of dysentery is also demonstrated.

- 4161 Hillman, R.J.; Rao, G.G.; Harris, J.R.W. et al. CIPROFLOXACIN AS A CAUSE OF CLOSTRIDIUM DIFFICILE-ASSOCIATED DIARRHOEA IN AN HIV ANTIBODY-POSITIVE PATIENT. *Journal of Infection*, vol.21, 1990, pp.205-207.

Ciprofloxacin is an uncommon cause of pseudomembranous colitis. A case is described in which diarrhea was associated with the presence of clostridial toxin in an HIV-infected patient and the possible implications are discussed. [published abstract]

- 3920 Hussey, G.D.; Klein, M. A RANDOMIZED, CONTROLLED TRIAL OF VITAMIN A IN CHILDREN WITH SEVERE MEASLES. *New England Journal of Medicine*, vol.323 no.3, July 19, 1990, pp.160-164.

[The authors] conducted a randomized, double-blind trial involving 189 children who were hospitalized at a regional center in South Africa because of measles complicated by pneumonia, diarrhea, or croup. The children...were assigned to receive either Vitamin A...or placebo...beginning with five days of the onset of the rash...[They conclude that] treatment with vitamin A reduces morbidity and mortality in measles, and all children with severe measles should be given vitamin A supplements, whether or not they are thought to have a nutritional deficiency. [published abstract]

- 4708 IMPORTATION OF CHOLERA FROM PERU. Morbidity and Mortality Weekly Report, vol.40 no.15, April 19, 1991, pp.258-259.

The case of a U.S. physician who contracted cholera while attending a conference in Lima, Peru is reported in this news note. Travelers are advised to avoid raw seafood and contaminated water when in Latin American countries affected by the current epidemic.

- 4266 Izraeli, S.; Rachmel, A.; Frishberg, Y. et al. TRANSIENT RENAL ACIDIFICATION DEFECT DURING ACUTE INFANTILE DIARRHEA: THE ROLE OF URINARY SODIUM. *Journal of Pediatrics*, vol.117 no.5, November 1990, pp.711-716.

The authors studied urinary acidification daily during the hospital course of 16 infants with acute gastroenteritis and metabolic acidosis. They conclude that impaired urinary acidification is frequently found during metabolic acidosis in infants with acute gastroenteritis and results from a sodium deficit rather than from transient distal renal tubular acidosis.

- 4566 Janda, R.C.; Conklin, J.L.; Mitros, F.A. et al. MULTIFOCAL COLITIS ASSOCIATED WITH AN EPIDEMIC OF CHRONIC DIARRHEA. *Gastroenterology*, vol.100, 1991, pp.458-464.

The authors report on an outbreak of chronic, secretory diarrhea characterized by multifocal colitis which occurred between May and August 1987 in rural Henderson County, Illinois. The water at a local restaurant was implicated originally as the source, although no pathological organism was isolated. The authors conclude that multifocal colitis

may serve as a marker of infectious, chronic diarrhea.

- 4723 Johnson, J.S. USAID HELPS BATTLE CHOLERA. *Frontlines*, April 1991, p.2.

This article briefly reports on how A.I.D.'s health programs have assisted Peru in managing the current cholera epidemic. The Agency is also working with other organizations, such as the Centers for Disease Control and the Pan American Health Organization, to coordinate aid to Peru and other Latin American countries with cholera outbreaks.

- 4239 Jones, D. FOODBORNE LISTERIOSIS. *The Lancet*, vol.336 no.8724, November 10, 1990, pp.1171-1174.

This article describes the bacteriological characteristics of *Listeria monocytogenes* as well as the symptoms of human listeriosis. Because the pathogen is so widespread in the environment--in dust, soil, water, animals, and fresh or processed food--it has been difficult to identify specific modes of transmission.

- 4562 Karabiber, N.; Aktas, F. FOODBORNE GIARDIASIS. *The Lancet*, vol.337 no.8737, February 9, 1991, pp.376-377, letter.

In this letter to the editor the authors describe a small outbreak of foodborne giardiasis in two Turkish families as a result of eating tripe soup.

- 4301 Keusch, G.T.; Bennish, M.L. SHIGELLOSIS: RECENT PROGRESS, PERSISTING PROBLEMS AND RESEARCH ISSUES. *Pediatric Infectious Disease Journal*, vol.8 no.10, 1989, pp.713-719.

This review summarizes recent developments in the understanding of *Shigella* pathogenesis, with an emphasis on the presentation of the disease in populations in developing countries. It also briefly highlights the most pertinent research issues.

- 4431 Khan, A.J.; Khan, J.A. ACUTE RESPIRATORY INFECTIONS IN CHILDREN: A CASE MANAGEMENT INTERVENTION IN ABBOTTABAD DISTRICT, PAKISTAN. *Bulletin of the World Health Organization*, vol.68 no.5, 1990, pp.577-585.

Between 1985 and 1987, a community-based case-management programme for acute lower respiratory infection (ALRI) was conducted in a rural district of northern Pakistan. The

impact on infant and child mortality of this programme, which included active case-finding and maternal health education, was evaluated...Case management of acute respiratory infection by village-level community health workers backed up by local health centre staff appeared to significantly reduce both ALRI-specific and total infant and child mortality rates in this setting. [published abstract]

- 4432 Khan, J.A.; Addiss, D.G.; Rizwan-Ullah. PNEUMONIA AND COMMUNITY HEALTH WORKERS. The Lancet, vol.337 no.8720, October 13, 1990, p.939, letter.

In response to the Lancet article by Dr. Bang et al on pneumonia case management by village-level CHWs, this letter to the editor discusses a 3-year intervention study in rural Pakistan. In this study, the authors observed not only a decrease in pneumonia deaths, but a decrease in the incidence of pneumonia.

- 4320 Khin-Maung-V.; Bolin, T.D.; Duncombe, V.M. et al. EFFECT OF SHORT-TERM INTERMITTENT ANTIBIOTIC TREATMENT ON GROWTH OF BURMESE (MYANMAR) VILLAGE CHILDREN. The Lancet, vol.336 no.8723, November 3, 1990, pp.1090-1093.

The authors set up a clinical field trial to study the effect of low-dose, short-term antibiotic treatment on rice carbohydrate malabsorption and growth in Burmese village children aged 6-59 months. The purpose was to test the hypothesis that antibiotics would improve rice carbohydrate absorption and thus growth and nutrition of children with rice carbohydrate malabsorption. The authors conclude that only the subgroup of children aged 36-47 months had significantly greater linear growth when treated with antibiotics.

- 4302 Khoshoo, V.; Bhan, M.K.; Jayashree, S. et al. ROTAVIRUS INFECTION AND PERSISTENT DIARRHOEA IN YOUNG CHILDREN. The Lancet, vol.336 no.8726, November 24, 1990, pp.1314-1315, letter.

The authors suggest that rotavirus infection may be an important initiating illness in persistent diarrhea. They present the results of a case-control study to investigate the relationship of rotavirus infection to persistent diarrhea.

- 3770 Kishaba, R.G.; Losek, J.D.; Eisenberg, C.S.L. SEIZURE FOLLOWING ORAL REHYDRATION OF HYPERNATREMIA WITH WATER. *Clinical Pediatrics*, vol.29 no.4, April 1990, pp.239-240.

The authors report a patient with hypertonic dehydration treated with unmonitored oral administration of water who developed generalized seizure despite having a normal serum sodium level at the time of seizure...[They conclude that] the clinician needs to be aware that oral rehydration with plain water in the hypernatremic patient may cause a rapid increase in serum sodium and may cause seizures. [published abstract]

- 4729 Kjolhede, C.L.; Rosales, F.J.; Gadomski, A.M. et al. MILD VITAMIN A DEFICIENCY AND RISK OF RESPIRATORY TRACT DISEASES AND DIARRHEA IN PRESCHOOL AND SCHOOL CHILDREN IN NORTHEASTERN THAILAND. *American Journal of Epidemiology*, 1991, pp.319-321, letter.

The authors of this letter to the editor comment on an article by Bloem et al which discussed vitamin A deficiency and risk of diarrhea and respiratory infections. They cite examples of several variables that must be considered before concluding that vitamin A supplementation can significantly reduce risks of infections. A reply by the authors follows.

- 4821 Lanata, C.F.; Black, R.E.; Gilman, R.H. et al. EPIDEMIOLOGIC, CLINICAL, AND LABORATORY CHARACTERISTICS OF ACUTE VS. PERSISTENT DIARRHEA IN PERIURBAN LIMA, PERU. *Journal of Pediatric Gastroenterology and Nutrition*, vol.12, 1991, pp.82-88.

Longitudinal studies of acute and persistent diarrhea in 677 children less than 3 years old were conducted for 27 months in a periurban community near Lima, Peru. The results indicate that there are no clinical or laboratory features of acute diarrhea that are strongly predictive of the subset of diarrheas that persist.

- 4634 Latham, M.C.; Habicht, J.-P.; Grabowsky, M. et al. VITAMIN A AND CHILDHOOD MORTALITY. *New England Journal of Medicine*, vol.324 no.10, March 7, 1991, pp.694-695, letter.

These letters to the editor comment on the study by Rahmathullah et al. which reported decreases in child mortality following vitamin A supplementation. The authors discuss issues such as the viability of mass supplementation programs and the relationship of vitamin A deficiency and measles mortality.

- 4532 LISTERIOSIS. Weekly Epidemiological Record, no.5, February 1991, pp.28-30.

This report reviews outbreaks of listeriosis in Switzerland and France in the 1980s and discusses the link between eating contaminated foods and contracting listeriosis.

- 4190 Mata, L. INFECTION, MALNUTRITION AND GROWTH. Journal of Gastroenterology and Hepatology, suppl.1, 1990, pp.32-43.

The negative effects of infection on nutritional status are examined in this article. The author explores the relationship between infection and decreased food intake, digestive disorders, altered immune response and growth retardation. The significance of the infection-malnutrition interaction is discussed in terms of its effects on child morbidity and mortality in developing countries.

- 4840 Mathan, V.I.; Mathan, M.M. INTESTINAL MANIFESTATIONS OF INVASIVE DIARRHEAS AND THEIR DIAGNOSIS. Reviews of Infectious Diseases, vol.13 suppl.4, 1991, pp.S311-S313.

Data from studies of 916 children with diarrhea in southern India were analyzed to determine whether a diagnostic clinical profile of shigellosis could be identified. Blood and/or mucous in stool, increased frequency of stool, abdominal pain, rectal tenesmus, and fever were noted more frequently in patients with shigellosis. Until a single applicable diagnostic test is available, the physician's diagnosis of shigellosis must be based on clinical judgement.

- 4267 Mehasi, A.I.; Murthy, K. HYPERNATRAEMIC DEHYDRATION IN THE HAIL REGION OF SAUDI ARABIA. Annals of Tropical Paediatrics, vol.10, 1990, pp.261-264.

This study describes the findings in 25 infants presenting with hypernatremic dehydration over a 1-year period and highlights some of the features peculiar to the Hail region in Saudi Arabia. All of the babies were bottlefed and 80% were from families with low educational background. Incidence of hypernatremic dehydration was significant.

- 3937 Mittal, N.K.; Sachdev, H.P.S.; Yadav, H.S. SERUM AND RECTAL MUCOSAL MAGNESIUM STATUS IN ACUTE AND CHRONIC DIARRHOEA. Journal of Tropical Pediatrics, vol.36 no.3, June 1990, pp.121-125.

This study examined serum and rectal mucosal magnesium content in 110 Indian children with acute diarrhea, persistent diarrhea, extra-intestinal infections, and no symptoms. It is concluded that infants with chronic, but not acute diarrhea, are magnesium depleted at presentation; with the continuation of diarrhea there is a progressive depletion of magnesium; and there is a tendency to regain the magnesium status during the convalescent period.

- 4842 Molla, A.M.; Molla, A.M. EFFECT OF ANTIBIOTICS ON FOOD INTAKE AND ABSORPTION OF NUTRIENTS FOR CHILDREN WITH DIARRHEA DUE TO SHIGELLA. *Reviews of Infectious Diseases*, vol.13 suppl.4, 1991, pp.S347-S350.

This study assessed the effect of treatment of Shigella infections with an antibiotic on the consumption of food and nutrients by two groups of hospitalized children. It found that children who are treated with appropriate antibiotics not only may recover from infection from Shigella more rapidly, they may also be able to absorb nutrients more efficiently.

- 4719 Moreno, A.; Mensa, J.; Segura, F. et al. GASTROENTERITIS AGUDA: ESTUDIO PROSPECTIVO DE 445 CASOS. *Revista Clinica Espanola*, vol.187 no.5, 1990, pp.218-222.

A study of 445 adults with acute gastroenteritis was conducted in Barcelona, Spain to determine the cause of the disease in that area. The most frequently isolated pathogen was Salmonella enteritidis. The authors also discuss bacteremia during gastroenteritis and the risk factors associated with it.

- 4292 Morrill, J.S.; Berggren, W.L.; Klein, M. et al. VITAMIN A AND MEASLES. *New England Journal of Medicine*, vol.323 no.25, December 20, 1990, pp.1774-1775, letter.

These two letters offer responses to the study on vitamin A and measles by Hussey and Klein in the July 19 issue. The first accuses the authors of unethical conduct in performing the study, while the second recommends community-based clinical trials of vitamin A therapy. Hussey and Klein then respond to the letters.

- 448 Moyles, K.; Owen, D.A.; Scudamore, C.H. et al. HYPERGASTRINEMIA, GASTRIC ENDOCRINE CELL HYPERPLASIA, AND INTRACTABLE DIARRHEA. *Journal of Clinical Gastroenterology*, vol.12 no.6, 1990, pp.675-680.

In this article the authors discuss the case of a patient with pernicious anemia who developed severe persistent diarrhea. The diarrhea subsided after antrectomy and reduction of gastrin levels.

- 4249 Muller, O.; Musoke, P.; Sen, G. et al. PEDIATRIC HIV-1 DISEASE IN A KAMPALA HOSPITAL. *Journal of Tropical Pediatrics*, vol.36, December 1990, pp.283-286.

Data of pediatric patients screened for HIV-1 infection between 1985 and 1989 were studied retrospectively in a major mission hospital in Kampala. Symptomatic HIV-1 infection was mainly acquired perinatally and was diagnosed in 87% of children >2 years of age. The mortality rate was 40% in pediatric in-patients with HIV-1 infection as compared to 12% in overall pediatric in-patients.

- 4752 Navarrete, S.; Stetler, H.C.; Avila, C. et al. AN OUTBREAK OF CRYPTOSPORIDIUM DIARRHEA IN A PEDIATRIC HOSPITAL. *Pediatric Infectious Disease Journal*, vol.10 no.3, March 1991, pp.248-250.

An outbreak of cryptosporidium diarrhea at a children's hospital in Mexico City is briefly reviewed in this article. The outbreak was attributed to nosocomial infections.

- 4041 Ng'andu, N.; Baboo, K.S. THE SIGNIFICANCE OF SOCIO-CULTURAL FACTORS IN CHILD MALNUTRITION IN URBAN ZAMBIA. *Journal of Tropical Pediatrics*, vol.36 no.4, August 1990, pp.201-202, letter.

The authors report on the results of a study that examined the association between sociocultural factors and nutritional status in Lusaka, Zambia. The results suggest that poverty, rather than ignorance, may be the reason for the children's low nutritional status.

- 4825 Nigro, G. PANCREATITIS WITH HYPOGLYCEMIA-ASSOCIATED CONVULSIONS FOLLOWING ROTAVIRUS GASTROENTERITIS. *Journal of Pediatric Gastroenterology and Nutrition*, vol.12, 1991, pp.280-282.

A case of acute pancreatitis and hypoglycemia-associated convulsions following rotavirus gastroenteritis, occurring in a previously healthy 2-year-old girl is reported. No abnormalities were revealed by clinical and laboratory follow-up studies. Further investigations on the possible pancreatic involvement by rotavirus may be helpful.

- 4849 NUTRITIONAL ASSESSMENT OF CHILDREN IN DROUGHT-AFFECTED AREAS -- HAITI, 1990. Morbidity and Mortality Weekly Report, vol.40 no.13, April 5, 1991, pp.222-224.

To determine whether the nutritional status of young children was affected by a January-June 1990 drought in Haiti, a nutrition survey was conducted. The prevalence of chronic undernutrition was shown to be moderate to high. The results do not suggest that a famine existed. However, any further deterioration of nutritional status could result in increased morbidity and mortality.

- 4750 Okie, S. SOUTH AMERICAN CHOLERA EPIDEMIC AMONG WORST. The Washington Post, April 1991, pp.A1+.

This article reports on the current cholera epidemic in Latin America of which the majority of cases have occurred in Peru, Colombia, Ecuador, Chile, and Brazil. There have also been one definite and six probable cases in the U.S. WHO Director-General Hiroshi Nakajima commented that about 25% of all Latin Americans were potentially at risk of cholera due to lack of clean water and inadequate sanitation.

- 4792 OUTBREAKS OF DIARRHEAL ILLNESS ASSOCIATED WITH CYANOBACTERIA (BLUE-GREEN ALGAE)-LIKE BODIES -- CHICAGO AND NEPAL, 1989 AND 1990. Morbidity and Mortality Weekly Report, vol.40 no.19, May 17, 1991, pp.325-327.

Recent reports have described the detection of cyanobacteria (blue-green algae)-like bodies (CLB) in the stools of persons with a prolonged syndrome of diarrhea, anorexia, and fatigue...In each of these reports, affected persons either were immunocompromised or had recently traveled to tropical countries. During 1989 and 1990, the first three reported outbreaks of this CLB-associated syndrome occurred in immunocompetent populations, affecting at least 150 persons. This report summarizes investigations of these outbreaks, which occurred in Chicago in 1990 and in Kathmandu, Nepal in 1989 and 1990. [published abstract]

- 4036 Ozsoylu, S. MALABSORPTION DUE TO PROTRACTED DIARRHEA. Journal of Pediatric Gastroenterology and Nutrition, vol.11 no.2, 1990, pp.282-283, letter.

This letter to the editor comments on an earlier article by Khoshoo et al. on Salmonella typhimurium-associated persistent diarrhea in infants and young children.

- 4733 PARALYTIC SHELLFISH POISONING -- MASSACHUSETTS AND ALASKA, 1990. Morbidity and Mortality Weekly Report, vol.40 no.10, March 15, 1991, pp.157-161.

Paralytic shellfish poisoning (PSP) is a foodborne illness caused by consumption of shellfish or broth from cooked shellfish that contains either concentrated saxitoxin, an alkaloid neurotoxin, or related compounds. This report summarizes outbreaks of PSP that occurred in Massachusetts and Alaska in June 1990. [published abstract]

- 3774 Paulet, P.; Coffernils, M. VERY LONG TERM DIARRHOEA DUE TO CAMPYLOBACTER JEJUNI. Postgraduate Medical Journal, vol.66, 1990, pp.410-411, letter.

In this letter to the editor, the authors describe the case of a 20 year old man who had persistent diarrhea for 17 years. Campylobacter jejuni was identified as the causal agent.

- 4473 Pichard, E.; Doumbo, O.; Minta, D. et al. PLACE DE LA CRYPTOSPORIDIOSE AU COURS DES DIARRHEES CHEZ LES ADULTES HOSPITALISES A BAMAKO. Bulletin de la Societe de Pathologie Exotique, vol.83, 1990, pp.473-478.

A study of infectious diarrheas in hospitalized patients in Bamako, Mali found that diarrhea was associated with a positive HIV serology in 40% of the cases. Cryptosporidium spp was found in 38% of the cases. The authors concluded that cryptosporidiosis is the main cause of AIDS diarrhea in Mali.

- 4785 Piersimoni, C.; Morbiducci, V.; Scalise, G. NON-01 VIBRIO CHOLERAEE GASTROENTERITIS AND BACTERAEEMIA. The Lancet, vol.337 no.8744, March 30, 1991, pp.791-792, letter.

In this letter to the editor the authors describe a case of V. cholerae gastroenteritis in Italy. The raw oysters eaten by the patient prior to the onset of illness were cited as the cause.

- 4192 Pigot, F. DIARRHEES AU COURS DU SIDA. Gazette Medicale, vol.97 no.31, 1990, pp.35-37.

This article briefly describes AIDS-related diarrhea and explains how the disease can be caused by parasites, viruses or bacteria.

- 4229 Pinnock, C. VITAMIN A. ARI News, issue 17, August 1990, pp.2-3.

This article explains how vitamin A deficiency can cause respiratory infections by inhibiting mucous production. In addition, the author notes that there is evidence that respiratory, diarrheal and measles infections could actually trigger signs of vitamin A deficiency. She also briefly discusses how vitamin A supplementation could reduce mortality and mentions the best dietary sources of vitamin A.

- 4706 Postel-Vinay, N. CHOLERA: L'HISTOIRE AU PRESENT. Tempo Medicale, no.424, April 3, 1991, p.3.

This brief editorial comments on cholera epidemic control measures in the past and present, especially in light of the current epidemic in Latin America.

- 3961 Potts, J.F.; Setness, P.A. VACATION DIARRHEA: HOW SHOULD IT BE MANAGED? Postgraduate Medicine, vol.88 no.1, July 1990, pp.83-87.

Traveler's diarrhea in North America is most often a self-limited disease that requires little medical intervention unless the course is prolonged or especially severe...Patients should be advised regarding the need for fluid replacement. Antibiotic therapy should be considered only in rare circumstances. [published abstract]

- 4739 Prentice, A.; Stirling, D.M.; Sullivan, P.B. et al. RAISED URINARY SECRETORY IGA IN CHRONIC DIARRHOEA. Archives of Disease in Childhood, vol.66, 1991, pp.223-226.

In this study 24 children hospitalized with persistent diarrhea and 43 village children in the Gambia were examined for secretory IgA outputs in urine. All the children were malnourished. The findings indicated that secretory IgA production in the village children was only one third that of better nourished children. In contrast, the children with persistent diarrhea had much higher outputs than the village children, regardless of nutritional state. The results suggest the secretory IgA production in the urinary tract can be stimulated by intestinal disease.

- 4224 Qadri, S.M.H. INFECTIOUS DIARRHEA--MANAGING A MISERY THAT IS STILL WORLDWIDE. Postgraduate Medicine, vol.88 no.5, October 1990, pp.169-184.

The author reviews the etiologic agents and symptoms of bacterial, viral, and parasitic diarrhea and offers general treatment advice based on the causative agent.

- 3952 Rabiee, F.; Geissler, C. CAUSES OF MALNUTRITION IN YOUNG CHILDREN: GILAN, IRAN. *Journal of Tropical Pediatrics*, vol.36 no.4, August 1990, pp.165-170.

Causes of malnutrition were investigated in [an] agricultural area of Gilan, Iran...Associated factors were: late introduction and small quantities of solid food, poor maternal knowledge of child feeding, low dietary energy density due to rationing and high price of animal products, contamination of water supply, and use of sedative drugs. [published abstract]

- 4468 Rahman, M.; Huq, F.; Sack, D.A. et al. ACUTE LOWER RESPIRATORY TRACT INFECTIONS IN HOSPITALIZED PATIENTS WITH DIARRHEA IN DHAKA, BANGLADESH. *Reviews of Infectious Diseases*, vol.12 suppl.8, November-December 1990, pp.S899-S906.

This study focused on 401 children <5 years old who were hospitalized with acute lower respiratory tract infection (ALRI) and diarrhea in Dhaka, Bangladesh, and who were investigated for the presence of both bacterial and viral respiratory tract pathogens as well as for selected diarrheal pathogens...A respiratory tract pathogen was identified in 30% of the patients, and a diarrheal pathogen was identified in 34%. The overall case-fatality rate in children with ALRI and diarrhea was 8%. [published abstract]

- 4124 Redd, S.; Moteetee, M.; Waldman, R. DIAGNOSIS AND MANAGEMENT OF ACUTE RESPIRATORY INFECTIONS IN LESOTHO. *Health Policy and Planning*, vol.5 no.3, 1990, pp.255-260.

As a first step in developing a national ARI program in Lesotho, a survey of medical practitioners was conducted to determine whether current WHO recommendations on the management of ARI are being followed. The results of the survey are analyzed in this article.

- 4543 Robinson, E. PERU BATTLES 12,600 CASES OF CHOLERA. *The Washington Post*, February 14, 1991, pp.A1+.

In this article the author reports on the current cholera epidemic in Peru and discusses some possible reasons for its

occurrence. A breakdown of the government's infrastructure resulting in inadequate housing and sanitation is cited as the main cause. However, the government's educational campaign to warn people and outline preventive measures has been credited for keeping the number of fatalities to a minimum.

- 4141 Rohde, J.E. CHOLERA AND THE CONTROL OF DIARRHOEAL DISEASES. Current Science, vol.59 nos.13 and 14, July 1990, pp.700-701.

In this brief article, Jon Rohde describes how the study of cholera, its epidemiology, pathophysiology and clinical management has had a greater effect on overall public health than on cholera alone.

- 3847 Sachdev, H.P.S.; Mittal, N.K.; Yadav, H.S. ORAL ZINC SUPPLEMENTATION IN PERSISTENT DIARRHOEA IN INFANTS. Annals of Tropical Pediatrics, vol.10, 1990, pp.63-69.

A controlled randomized trial was conducted in 40 infants (6-18 months old) with persistent diarrhoea (>2 weeks' duration) to evaluate the effect of oral zinc supplementation...It was concluded that in persistent diarrhoea there is depletion of zinc with the progression of disease and oral zinc administration can improve the zinc status. The possible anti-diarrhoeal effect of zinc, however, merits further study. [published abstract]

- 3955 Sawaya, A.L.; Amigo, H.; Sigulem, D. THE RISK APPROACH IN PRESCHOOL CHILDREN SUFFERING MALNUTRITION AND INTESTINAL PARASITIC INFECTION IN THE CITY OF SAO PAULO, BRAZIL. Journal of Tropical Pediatrics, vol.36 no.4, August 1990, pp.184-188.

The association between parasitic infection and malnutrition in preschool children in the city of Sao Paulo was studied according to degree of malnutrition, age and income...Higher risks of malnutrition were found in children above 24 months infected with Ascaris, Trichuris or with more than three different parasites. The presence of more than three parasites per child affected nutritional status independently of income level. [published abstract]

- 4327 Schorling, J.B.; McAuliffe, J.F.; De Souza, M.A. et al. MALNUTRITION IS ASSOCIATED WITH INCREASED DIARRHOEA INCIDENCE AND DURATION AMONG CHILDREN IN AN URBAN BRAZILIAN SLUM. *International Journal of Epidemiology*, vol.19 no.3, 1990, pp.728-735.

A study was undertaken in an urban Brazilian slum to determine the relationship between malnutrition and subsequent diarrheal disease among children. The most malnourished children were shown to have nearly twice the total number of days of diarrhea than better nourished children had. These results provide additional evidence that a significant association between malnutrition and both increased diarrhea incidence and duration exists.

- 3848 Schorling, J.B.; Wanke, C.A.; Schorling, S.K. et al. A PROSPECTIVE STUDY OF PERSISTENT DIARRHEA AMONG CHILDREN IN AN URBAN BRAZILIAN SLUM: PATTERNS OF OCCURRENCE AND ETIOLOGICAL AGENTS. *American Journal of Epidemiology*, vol.132 no.1, 1990, pp.144-156.

The authors undertook prospective diarrheal surveillance among a cohort of 175 children >5 years of age over a 28-month period in an urban slum in northeastern Brazil. 65% of children had at least one episode of persistent diarrhea per year. These episodes accounted for 50% of all days of diarrhea and 11% of all episodes. The agents isolated from children with acute and persistent diarrhea were similar.

- 3803 Scully, R.E.; Mark, E.J.; McNeely, W.F. et al. CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL: CASE 25-1990. *New England Journal of Medicine*, vol.322 no.25, June 21, 1990, pp.1796-1806.

The authors describe the case of a 63-year-old man with persistent diarrhea. Possible causes of the condition included celiac sprue, diverticulosis, and bacterial overgrowth syndrome. The final diagnosis was small intestine diverticulosis, with diverticulitis, perforation, and abscess in mesentery.

- 4818 Shulman, R.J.; Langston, C.; Lifschitz, C.H. HISTOLOGIC FINDINGS ARE NOT CORRELATED WITH DISACCHARIDASE ACTIVITIES IN INFANTS WITH PROTRACTED DIARRHEA. *Journal of Pediatric Gastroenterology and Nutrition*, vol.12, 1991, pp.70-75.

To determine whether the degree of small intestine mucosal damage would be reflected in a corresponding reduction in

disaccharidase activity, the authors compared intestinal mucosal histology with the results of disaccharidase activity measured in per oral suction small intestine biopsies obtained from 21 infants with persistent diarrhea. They conclude that the extrapolation of disaccharidase activity from the results of histologic measurements in infants with persistent diarrhea is not reliable.

- 3867 Sibrian, R.; Elston, R.C. RECIPROCAL CAUSAL INFLUENCES AMONG MALNUTRITION, GROWTH RETARDATION, AND DIARRHEA IN PRESCHOOL CHILDREN. *American Journal of Human Biology*, vol.2, 1990, pp.235-243.

Structural regression models are applied to longitudinal data to study reciprocal causal influences between malnutrition and infection in preschool children [in rural Guatemala]...Results provide evidence of significant causal influence of both diarrhea on acute malnutrition and of acute malnutrition on diarrhea. A cumulative effect of acute malnutrition on chronic malnutrition that leads to growth retardation is identified. [published abstract]

- 4264 Singhi, S.; Singhi, P.D. CLINICAL SIGNS IN NEONATAL PNEUMONIA. *The Lancet*, vol.336 no.8722, October 27, 1990, pp.1072-1073, letter.

None of the published evaluations of simple clinical signs for the diagnosis of pneumonia have focused on the neonatal group. This letter to the editor reports on a prospective study to evaluate symptoms and signs used by primary health care workers to diagnose neonatal pneumonia.

- 4176 Skirrow, M.B. CAMPYLOBACTER. *The Lancet*, vol.336 no.8720, October 13, 1990, pp.921-923.

This article discusses the bacteriology and incidence rate of Campylobacter enteritis. It reviews the sources of campylobacters, various modes of transmission, and suggestions for controlling the spread of campylobacter-associated illness. The author concludes that the best preventive method is to control infection in broiler chickens, a frequent carrier of the pathogen.

- 4811 Sommer, A.; West, K. VITAMIN A AND MORTALITY. *The Lancet*, vol.337 no.8746, April 13, 1991, p.925, letter.

The authors of this letter to the editor dispute the idea that contact between health workers and children reduced

mortality by 35-75% in the Indonesian intervention trial that provided vitamin A capsules. Infrequent, casual contacts between health workers and children have not convincingly produced substantial health benefits, they claim.

- 3948 Stanton, B.; Clemens, J.D. CHRONIC DIARRHOEA: A METHODOLOGIC BASIS FOR ITS APPARENT HETEROGENEITY. *Tropical and Geographical Medicine*, vol.41, 1989, pp.100-107.

The authors examined 44 papers on persistent diarrhea for comparability of the age range of subjects under study and for the use of standardized definitions of "persistent" and "diarrhea." They found no consistent age range for selection of study populations, nor did they find consistent definitions for "persistent" or "diarrhea."

- 4751 Struelens, M.J.; Bennish, M.L.; Mondal, G. et al. BACTEREMIA DURING DIARRHEA: INCIDENCE, ETIOLOGY, RISK FACTORS, AND OUTCOME. *American Journal of Epidemiology*, vol.133 no.5, 1991, pp.451-459.

In order to assess the significance of nontyphoid bacteremia in patients hospitalized with diarrhea, the authors studied blood samples from 1,824 Bangladeshi patients. 243 patients had nontyphoid bacteremia. The case fatality rate was 29.7% in bacteremic patients versus 7.8% in controls. Bacteremia seems to be an important link between diarrheal illness and death in Bangladesh.

- 4817 Sullivan, P.B.; Marsh, M.N.; Mirakian, R. et al. CHRONIC DIARRHEA AND MALNUTRITION -- HISTOLOGY OF THE SMALL INTESTINAL LESION. *Journal of Pediatric Gastroenterology and Nutrition*, vol.12, 1991, pp.195-203.

The purpose of this study was to quantitate the jejunal lesion in Gambian children with persistent diarrhea-malnutrition syndrome. The study showed that Gambian children with this syndrome have an enteropathy characterized by a spectrum of immunopathologic changes suggestive of T-cell-mediated mucosal injury.

- 4748 Sullivan, P.B.; March, M.N.; Phillips, M.B. et al. PREVALENCE AND TREATMENT OF GIARDIASIS IN CHRONIC DIARRHOEA AND MALNUTRITION. *Archives of Disease in Childhood*, vol.65, 1990, pp.304-306.

A study of 31 Gambian children with diarrhea showed that giardia is highly prevalent in children with persistent diarrhea and malnutrition and that the infection does not respond to standard therapeutic measures such as metronidazole. Depressed immune functions and rapid reinfection of children returning to the hospital were cited as possible reasons for treatment failure.

- 4786 Sun, L.H. CHOLERA EPIDEMIC THREATENS SURVIVORS. The Washington Post, May 10, 1991, pp.A25+.

In this article the author reports on the outbreaks of cholera in Bangladesh prior to the recent devastating cyclone. The number of cases could rapidly spread as the cyclone left many people without adequate sanitation and clean drinking water. Government authorities are reluctant to claim that there is an actual epidemic due to fears that other countries will cease seafood imports from Bangladesh.

- 4844 Taylor, D.N.; Badhidatta, L.; Echeverria, P. EPIDEMIOLOGIC ASPECTS OF SHIGELLOSIS AND OTHER CAUSES OF DYSENTERY IN THAILAND. Reviews of Infectious Diseases, vol.13 suppl.4, 1991, pp.S226-S230.

Nearly 20% of children seen in the outpatient department of Children's Hospital in Bangkok, Thailand for diarrheal disease had bloody diarrhea. Shigella species and EIEC were the most frequent causes of bloody diarrhea. Campylobacter sp. and nontyphoidal Salmonella sp. were also isolated frequently but were much less often associated with bloody diarrhea. None of the species isolated always caused bloody diarrhea.

- 3823 Thongkrajai, E.; Stoeckel, J.; Thongkrajai, P. NUTRITIONAL STATUS AND THE INCIDENCE AND DURATION OF DIARRHOEAL DISEASE AMONG CHILDREN IN NORTHEAST THAILAND. Social Science and Medicine, vol.30 no.7, 1990, pp.773-776.

The relationship between nutritional status and the incidence and duration of diarrhea was examined in a sample of 1,117 Thai mothers and 1,364 children under 5 years of age. Study results did not indicate a significant relationship between diarrhea and malnutrition. The authors analyze these findings and offer suggestions as to why no relationship was found.

- 4411 Thurnham, D.I.; Reddy, V.; Vijayaraghavan, K. VITAMIN A AND CHILDHOOD MORTALITY. The Lancet, vol.337 no.8735, January 26, 1991, p.232, letter.

In these letters to the editor, the authors discuss whether or not vitamin A supplements actually reduce childhood mortality. They compare Vijayaraghavan et al's study, which showed no mortality reduction from supplementation, to similar studies which indicated that fewer deaths occurred among children receiving supplements.

- 4160 Tranter, H.S. FOODBORNE STAPHYLOCOCCAL ILLNESS. The Lancet, vol.336 no.8722, October 27, 1990, pp.1044-1046.

This article covers the epidemiology, physicochemical properties, detection and biological activities of staphylococcal foodborne illness.

- 4789 TRICHINELLA SPIRALIS INFECTION. Weekly Epidemiological Record, no.17, April 26, 1991, pp.121-122.

This article reports on 90 cases of trichinosis among a group of South-East Asian people attending a wedding in Iowa. The illness was associated with the consumption of commercially purchased pork which was served uncooked. Virtually none of the people knew about trichinosis or about the dangers of eating undercooked pork. This is the fourth outbreak since 1975 that occurred among South-East Asian refugees living in the U.S.

- 4469 Tupasi, T.E.; Mangubat, N.V.; Sunico, E.S. et al. MALNUTRITION AND ACUTE RESPIRATORY TRACT INFECTIONS IN FILIPINO CHILDREN. Reviews of Infectious Diseases, vol.12 suppl.8, November-December 1990, pp.S1047-S1054.

A recent study of 1,978 Filipino children under five examined the impact of malnutrition on morbidity and mortality associated with acute respiratory infection. Results indicated that there was a significant association between malnutrition in children with ARI and their morbidity and mortality. In addition, it was determined that children with severe acute lower respirator infections had a mortality risk two to three times higher than that of healthy children.

- 4762 UPDATE: CHOLERA OUTBREAK -- PERU, ECUADOR, AND COLOMBIA. Morbidity and Mortality Weekly Report, vol.40 no.3, April 5, 1991, pp.225-227.

This article, largely reprinted from the WHO Weekly Epidemiological Record, discusses the risks of cholera transmission by food imports and the measures taken by the FDA to prevent such transmission.

- 4440 UPDATE: SALMONELLA ENTERITIDIS INFECTIONS AND SHELL EGGS-- UNITED STATES, 1990. Morbidity and Mortality Weekly Report, vol.39 no.50, December 21, 1990, pp.909-912.

Three Salmonella enteritidis outbreaks in the U.S. in 1990, which were associated with eggs, are summarized in this article. It is recommended that Salmonella isolates be serotyped by state public health laboratories in order to characterize sporadic cases and to assist in epidemiologic investigations.

- 4841 Varavithya, W.; Sunthornkachit, R.; Eampokalap, B. ORAL REHYDRATION THERAPY FOR INVASIVE DIARRHEA. Reviews of Infectious Diseases, vol.13 suppl.4, 1991, pp.S325-S331.

This paper describes the nature and quantity of fluid lost during an episode of invasive diarrhea. The role of ORT in the treatment of this illness is reviewed and evaluated. Studies from hospital and the community both document the effectiveness of ORT for rehydration of patients with invasive diarrhea. Children with moderate dehydration benefited most from ORS.

- 4324 Victora, C.G.; Kirkwood, B.R.; Fuchs, S.C. et al. IS IT POSSIBLE TO PREDICT WHICH DIARRHOEA EPISODES WILL LEAD TO LIFE-THREATENING DEHYDRATION? International Journal of Epidemiology, vol.19 no.3, 1990, pp.736-742.

Early detection of children who are likely to develop life-threatening dehydration as a consequence of diarrhea would be of great value to health workers. The authors carried out a case-control study to compare the symptoms and signs observed on the first day of diarrhea in 2 groups of children in Porto Alegre, Brazil. The analysis showed that if selection was based on the presence of fever, vomiting, or both, one-third of episodes of diarrhea would be identified as at high risk. These episodes would include 75% of those which would lead to dehydration.

- 4165 Victora, C.G.; Barros, F.C.; Kirkwood, B.R. et al. PNEUMONIA, DIARRHEA, AND GROWTH IN THE FIRST 4 Y OF LIFE: A LONGITUDINAL STUDY OF 5914 URBAN BRAZILIAN CHILDREN. American Journal of Clinical Nutrition, vol.52, 1990, pp.391-396.

The synergism between nutrition status and hospital admissions due to diarrhea and pneumonia was studied in a population-based birth cohort of >5000 children in southern Brazil...Diarrhea admissions were stronger predictors of malnutrition than were pneumonia admissions, but malnutrition was a more important risk factor for pneumonia than for diarrhea. All associations were stronger in the first 2 y of life, although the early effect of severe diarrhea and pneumonia on nutrition status could still be detected in the fourth year of life. [published abstract]

- 4277 Vijayaraghavan, K.; Radhaiah, G.; Prakasam, B.S. et al. EFFECT OF MASSIVE DOSE OF VITAMIN A ON MORBIDITY AND MORTALITY ON INDIAN CHILDREN. The Lancet, vol.336 no.8727, December 1, 1990, pp.1342-1345.

The effect of vitamin A supplementation on preschool child morbidity and mortality was assessed in a prospective double blind, placebo-controlled study around Hyderabad, India. Vitamin A supplementation had no effect on morbidity status. Mortality rates were similar in the two groups. The findings suggest that vitamin A supplementation alone may not reduce child mortality.

- 4276 VITAMIN A AND MALNUTRITION/INFECTION COMPLEX IN DEVELOPING COUNTRIES. The Lancet, vol.336 no.8727, December 1, 1990, pp.1349-1350.

This editorial reviews the recent studies of vitamin A supplementation in regard to its effect on morbidity and mortality. In addition, it briefly explores the issue of how to improve vitamin A status.

- 4464 VITAMIN A CONSULTATIVE GROUP MEETING HELD. Glimpse, vol.12 no.4, July-August 1990, pp.1-2.

A total of 270 participants from 33 countries attended the National Symposium and XIII International Vitamin A Consultative Group meeting, held from November 5-10, 1989 in Kathmandu, Nepal. This article briefly reviews the topics discussed and the conclusions reached by the participants.

- 4248 Watts, T.; Ng'andu, N.; Wray, J. CHILDREN IN AN URBAN TOWNSHIP IN ZAMBIA: A PROSPECTIVE STUDY OF CHILDREN DURING THEIR FIRST YEAR OF LIFE. *Journal of Tropical Pediatrics*, vol.36, December 1990, pp.287-293.

A prospective study of 257 children in Lusaka was conducted to monitor their growth from birth to 2 years, their weaning practices, and their illnesses. Deaths were due to prematurity and respiratory problems during the first few months, and diarrhea, measles and malnutrition during the later months. Growth was good during the first 6 months but faltered after 8 months. At one year of age, 66% of children were still breastfed more than 6 times a day. Over 70% of children were fully immunized.

- 4284 West, K.; Sommer, A. DIET AND VITAMIN A DEFICIENCY: CHALLENGE FOR THE NINETIES. *Vital News*, vol.1 no.2, November 1990, p.1+.

This brief article mentions cultural, socioeconomic and environmental factors that offer constraints and opportunities to improving the diet.

- 4198 Whittle, H.C.; Campbell, H.; Rahman, S. et al. ANTIBODY PERSISTENCE IN GAMBIAN CHILDREN AFTER HIGH-DOSE EDMONSTON-ZAGREB MEASLES VACCINE. *The Lancet*, vol.336 no.8722, October 27, 1990, pp.1046-1048.

Measles antibody concentrations in Gambian children immunised at 4 months of age with a high-dose Edmonston-Zagreb (EZ) measles vaccine or at 9 months with conventional Schwarz vaccine were measured 5 months after vaccination, and at 18 and 36 months of age. Schwarz vaccinees produced, on average, a 2.4-fold higher concentration of measles haemagglutinin inhibiting (HAI) antibody than EZ vaccinees, but at 36 months of age 82 of 93 (88%) EZ vaccinees and 83 of 87 (95%) Schwarz vaccinees had measles plaque-neutralizing antibody concentrations above the assumed protective level of 200mIU/ml ($p > 0.1$). [published abstract]

- 4477 Wistrom, J.; Norrby, R. ANTIBIOTIC PROPHYLAXIS OF TRAVELLERS' DIARRHOEA. *Scandinavian Journal of Infectious Diseases*, suppl.70, 1990, pp.111-129.

This overview will present a summary of the epidemiology and aetiology of TD [travelers diarrhea], antibiotic susceptibility of enteric pathogens, trials on antibiotic prophylaxis and the indications for such prophylaxis. [published abstract]

- 3979 Wolfe, M.S. ACUTE DIARRHEA ASSOCIATED WITH TRAVEL. American Journal of Medicine, vol.88 suppl.6A, June 20, 1990, pp.6A-34S-6A-37S.

The author discusses the bacterial, viral and parasitic agents that cause traveler's diarrhea; diagnosis of traveler's diarrhea; and proper treatment with oral fluids and drugs.

- 4307 YERSINIA ENTEROCOLITICA INFECTIONS DURING THE HOLIDAYS IN BLACK FAMILIES--GEORGIA. Morbidity and Mortality Weekly Report, vol.39 no.45, November 16, 1990, pp.819-821.

During the 1988-89 winter holidays an outbreak of gastroenteritis caused by raw chitterlings, or pork intestines, contaminated with Yersinia enterocolitica occurred in Atlanta. The following year, the local WIC Program incorporated information about raw chitterlings into its group nutrition education program. This article discusses the program.

- 4667 Yohannan, M.D.; Lindblad, B.S. NECROTIZING ENTEROCOLITIS: AN OVERLOOKED LIFE-THREATENING COMPLICATION OF ACUTE DIARRHOEAL ILLNESS IN INFANTS AND CHILDREN. Annals of Tropical Paediatrics, vol.10, 1990, pp.407-409.

In this article the authors present the case of a 7-month-old girl in Saudi Arabia who developed necrotizing enterocolitis (NEC) following acute diarrhea. Prior to developing NEC, the child had been given an anti-diarrheal drug. The authors note that all cases of NEC following diarrhea are in tropical countries. They suggest that this may be related to the use of anti-diarrheals and associated malnutrition.

TREATMENT (General)

- 4668 Abdullah, A.A. CLINICAL PRESENTATION AND MANAGEMENT OF ACUTE GASTRO-ENTERITIS IN IN-PATIENT CHILDREN AT KING KHALID UNIVERSITY HOSPITAL, RIYADH, SAUDI ARABIA. *Annals of Tropical Paediatrics*, vol.10, 1990, pp.401-405.

In a retrospective survey of 300 children with diarrhea at the King Khalid University Hospital in Riyadh, Saudi Arabia, it was observed that 65% of the cases were treated with IV therapy, 22% with ORT, and 13% with IV plus ORT. There were no fatalities in the study group. The authors concluded that IV therapy was used excessively and identified the need to encourage ORT use.

- 3993 Anokbonggo, W.W.; Odoi-Adome, R.; Oluju, P.M. TRADITIONAL METHODS IN MANAGEMENT OF DIARRHOEAL DISEASES IN UGANDA. *Bulletin of the World Health Organization*, vol.68 no.3, 1990, pp.359-363.

A total of 292 traditional healers were interviewed in five districts of Uganda to discover how diarrhoeal diseases were treated by them. At least two healers were present in every village visited, and over 42% of their case-load was concerned with diarrhoeal treatment. The investigation showed that a great variety of herbs/plants were used by traditional healers in the treatment of diarrhoeal diseases. All those interviewed used water as the main vehicle for their herbal preparations...Only 3.1% of healers either limited or did not advise fluid intake. These findings indicate that traditional healers could play an important role in interventions to control diarrhoeal diseases using modern oral rehydration therapy if they were assisted to improve their techniques. [published abstract]

- 3930 Balistreri, W.F. ORAL REHYDRATION IN ACUTE INFANTILE DIARRHEA. *American Journal of Medicine*, vol.88 suppl.6A, June 20, 1990, pp.6A-30S-6A-33S.

The significance of acute diarrheal illness...is presented...Methods for managing acute diarrhea and its subsequent dehydration, including intravenous rehydration and refeeding, are discussed, with emphasis on the use of oral rehydration solutions. [published abstract]

- 4823 Barros, F.C.; Victora, C.G.; Forsberg, B. et al. MANAGEMENT OF CHILDHOOD DIARRHOEA AT THE HOUSEHOLD LEVEL: A POPULATION-BASED SURVEY IN NORTH-EAST BRAZIL. Bulletin of the World Health Organization, vol.69 no.1, 1991, pp.59-65.

The management of childhood diarrhea at the household level was studied in a population-based survey in northeast Brazil. Fifteen percent of children <5 years old had had diarrhea within the last 15 days. A total of 66% of the children were not taken for treatment; government health services were used by 14%, private doctors by 1%, and traditional healers by 24%. ORT was given to 24% of the children. Only 18% of the caretakers prepared the rehydration solutions correctly.

- 4456 Bergquist, E.J. THE OFFICE EVALUATION OF INFECTIOUS DIARRHEA. Primary Care, vol.17 no.4, December 1990, pp.853-866.

In this article the author discusses an approach to the diagnosis and management of infectious diarrheas that may be encountered in an office practice. He reviews the pathogenesis, etiology, and laboratory evaluation of infectious diarrheas and then offers some guidelines for case management.

- 3929 Brownlee, H.J. FAMILY PRACTITIONER'S GUIDE TO PATIENT SELF-TREATMENT OF ACUTE DIARRHEA. American Journal of Medicine, vol.88 suppl.6A, June 20, 1990, pp.6A-27S-6A-29S.

Family practitioners who receive calls from patients complaining of diarrhea must determine if the patients can be treated at home or if further work-up is required. This article reviews key concepts for family practitioners to consider in assessing patients with acute diarrhea.
[published abstract]

- 3895 Carpenter, C.C.J. THE ERRATIC EVOLUTION OF CHOLERA THERAPY: FROM FOLKLORE TO SCIENCE. Clinical Therapeutics, vol.12 suppl.A, 1990, pp.22-28.

In this article the author traces the development of cholera treatment from the early 19th century practices of purging and bloodletting to the current use of oral rehydration therapy.

- 4799 Chuang, E.; Kamath, K.R. PREAMISSION MANAGEMENT OF ACUTE GASTROENTERITIS IN CHILDREN. Medical Journal of Australia, vol.154, April 15, 1991, p.565, letter.

In this letter to the editor the authors comment on a survey of pre-hospitalization management of diarrhea by medical practitioners in Britain. Findings showed that the majority of cases were prescribed various drugs and that fluid therapy was significantly underused. They conclude that ORT still needs extensive promotion.

- 3901 Conway, S.P.; Phillips, R.R.; Panday, S. ADMISSION TO HOSPITAL WITH GASTROENTERITIS. Archives of Disease in Childhood, vol.65, 1990, pp.579-584.

A prospective study over a one year period examined preadmission illness and its treatment, social characteristics and referral patterns, and inpatient illness progression in 1148 children admitted to a British hospital with a primary diagnosis of gastroenteritis. Results showed that suboptimal treatment was common, with one-third of the cases receiving no treatment and another third receiving inappropriate antibiotics, anti-diarrheals, antiemetics, or changes in milk.

- 4791 Finberg, L. WHY DIARRHEA CAN BE DANGEROUS. Healthy Kids Birth, vol.3, Winter 1991, pp.48+.

Almost 500 children per year die of acute diarrhea in the U.S. In this article the author explains the dangers of dehydration, how to differentiate between loose stools and diarrhea, and how to manage diarrhea at home. He gives basic guidelines for using oral rehydration therapy and continuing feeding during diarrheal episodes. He also provides a list of things a doctor should know about a child's diarrheal episode prior to treatment.

- 4727 Goodburn, E.; Mattosinho, S.; Mongi, P. et al. MANAGEMENT OF CHILDHOOD DIARRHOEA BY PHARMACISTS AND PARENTS: IS BRITAIN LAGGING BEHIND THE THIRD WORLD? British Medical Journal, vol.302, February 23, 1991, pp.440-443.

In England a study was carried out to investigate the role of community pharmacists in providing advice for treating childhood diarrhea and to examine mothers' responses to their children's diarrheal episodes. The majority of pharmacists recommended inappropriate treatments such as anti-diarrheals and withholding breast milk. Mothers' knowledge of home treatment was also inadequate. Since

pharmacists are widely used for consultation in childhood illnesses, the authors recommend education to train pharmacists in appropriate diarrhea management.

- 3879 Heymann, D.L.; Mbvundula, M.; Macheso, A. et al. ORAL REHYDRATION THERAPY IN MALAWI: IMPACT ON THE SEVERITY OF DISEASE AND ON HOSPITAL ADMISSIONS, TREATMENT PRACTICES, AND RECURRENT COSTS. Bulletin of the World Health Organization, vol.68 no.2, 1990, pp.193-197.

In 1987 a review of the records of paediatric inpatients over the period 1981-86 was carried out at KCH [Kamuzu Central Hospital, Lilongwe, Malawi] to evaluate retrospectively the impact of the refresher training on hospital practices for dehydration associated with acute diarrhoeal diseases and of outpatient ORT activities on the number, severity, and cost of paediatric admissions for such diseases. [published abstract]

- 4581 HOUSEHOLD MANAGEMENT OF DIARRHEA AND ACUTE RESPIRATORY INFECTIONS. Baltimore, MD, The Johns Hopkins University, Institute of International Programs, November 1990, 36p.+app.

This paper reports on a scientific meeting about household management of diarrhea and acute respiratory infections held in November, 1990 at the Johns Hopkins University. The participants discussed issues such as early recognition of illness and appropriate care seeking by child caretakers as well as proper home treatment procedures. Communication in CDD and ARI programs in terms of resource commitment, strategies for behavior change, and social mobilization was also reviewed.

- 3798 IN VITRO SCREENING OF TRADITIONAL MEDICINES FOR ANTI-HIV ACTIVITY: MEMORANDUM FROM A WHO MEETING. Bulletin of the World Health Organization, vol.67 no.6, 1989, pp.613-618.

This article outlines a meeting of WHO's Global Programme on AIDS and Traditional Medicine Programme held from February 6-8, 1989, which focused on the use of traditional medicines to treat AIDS. The methodology for selecting and screening various plant derivatives for use in AIDS treatment is described. Also available in French.

- 3912 Johanson, J.F.; Sonnenberg, A. EFFICIENT MANAGEMENT OF DIARRHEA IN THE ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)--A MEDICAL DECISION ANALYSIS. *Annals of Internal Medicine*, vol.112 no.12, June 15, 1990, pp.942-948.

The objective of this study was to compare the efficacy and cost-effectiveness of alternative strategies for evaluating and treating diarrhea in AIDS patients. The three strategies compared were full evaluation, limited evaluation, and minimal evaluation. The authors concluded that the minimal evaluation in all patients, with full evaluation reserved for only nonrespondents to symptomatic treatment, is efficacious and is the most cost-effective strategy for managing AIDS-related diarrhea.

- 3972 Johnson, P.C.; Ericsson, C.D. ACUTE DIARRHEA IN DEVELOPED COUNTRIES: A RATIONALE FOR SELF-TREATMENT. *American Journal of Medicine*, vol.88 suppl.6A, June 20, 1990, pp.6A-5S-6A-9S.

This article reviews the epidemiology, origin, clinical presentations, and diagnosis of acute diarrhea, and provides a rationale for the symptomatic treatment of acute diarrhea...Early self-treatment aimed at reducing symptoms of acute diarrhea is recommended. [published abstract]

- 3761 Kallen, R.J. THE MANAGEMENT OF DIARRHEAL DEHYDRATION IN INFANTS USING PARENTERAL FLUIDS. *Pediatric Clinics of North America*, vol.37 no.2, April 1990, pp.265-286.

This article will focus on a systematic approach to decision making in the management of diarrheal dehydration by means of parenteral fluid, with special emphasis on infants. Hypothetical case simulations will be used to illustrate the principles outlined in the article. The author suggests that although ORT is recommended for mild dehydration, there are cases where IV therapy would be preferable.

- 4648 Lightfoot, N.F.; Ahmad, F.; Cowden, J. MANAGEMENT OF INSTITUTIONAL OUTBREAKS OF SALMONELLA GASTROENTERITIS. *Journal of Antimicrobial Chemotherapy*, vol.26 supplement F, 1990, pp.37-46.

Reports of salmonella gastroenteritis in England and Wales continue to increase. This paper considers the sources of salmonella, control of salmonella sources, and the management of outbreaks. The major factors in controlling institutional outbreaks are control-of-infection measures, patient isolation, good communications and the use of an

effective plan to initiate appropriate investigations and provide rapid responses to problems encountered.

- 4737 Logan, R.P.H.; Polson, R.J.; Baron, J.H. et al. FOLLOW-UP AFTER HELICOBACTER PYLORI TREATMENT. The Lancet, vol.337 no.8740, March 2, 1991, pp.562-563, letter.

In this letter to the editor, the authors comment on the importance of a clear definition of eradication of Helicobacter pylori following drug therapy. They concur that the term eradication should only be used for patients without H. pylori at least one month after the end of the treatment.

- 4689 THE MANAGEMENT OF DIARRHOEA IN CHILDREN. Accra, Ghana, The Pediatric Society of Ghana and UNICEF, nd, 8p.

This document reviews how diarrhea is managed presently in Ghana with the use of antibiotics and anti-diarrheals and by withholding food. The effects of various drugs are outlined and the disadvantages of the present methods are discussed. ORT is described and is suggested as a safer, more cost-effective mode of treatment. The importance of explaining the concept of dehydration and the benefits of ORT to parents is emphasized.

- 4115 ORAL REHYDRATION THERAPY (ORT). Accra, Ghana Social Marketing Programme and Washington, D.C., The Futures Group, The Somarc Project, nd, np.

This manual, developed by the Ghana Social Marketing Programme and the Somarc Project, provides basic guidelines on using ORT to treat dehydration due to diarrhea. There are brief sections on the pathophysiology of diarrhea and dehydration followed by guidelines for assessing and treating diarrheal patients. The final section reviews methods for preventing diarrheal episodes.

- 4196 Pithie, A. MANAGEMENT OF TRAVELLERS' DIARRHOEA. The Practitioner, vol.234, September 1990, pp.833-838.

The author describes the etiology and clinical features of travelers diarrhea, both in the mild and persistent form. He also discusses proper diagnosis and treatment, which includes fluid therapy and, in some cases, drug therapy.

- 4079 READINGS ON DIARRHOEA--STUDENT MANUAL. Geneva, The World Health Organization, nd, 132p.

This document is a guide for medical students studying clinical pediatrics as well as for physicians taking part in training courses on diarrhea management in children. It provides information on the epidemiology and etiology of various forms of diarrhea and presents guidelines for assessing the diarrhea patient and treating the condition.

- 4580 REVISION OF THE DIARRHOEA TREATMENT CHART. CDD Update, no.8, February 1991, pp.1-3.

This article briefly outlines the revisions made in the WHO diarrhea treatment chart, which was updated in 1990. Changes made include more detailed guidelines for management of bloody diarrhea and persistent diarrhea, recommendations for feeding during diarrheal episodes, and emphasis on limiting the use of drugs.

- 4843 Ronsmans, C.; Bennish, M.L.; Chakraborty, J. et al. CURRENT PRACTICES FOR TREATMENT OF DYSENTERY IN RURAL BANGLADESH. Reviews of Infectious Diseases, vol.13 suppl.4, 1991, pp.S351-S356.

The objective of this study was to determine who provides care to persons in a rural community in Bangladesh and to determine what care is actually provided to children with dysentery. The study found that of 643 health care providers, 50% practiced Western medicine, 24% were spiritualists, 17% were herbalists, and 9% were homeopaths.

- 4567 Snyder, J.D. USE AND MISUSE OF ORAL THERAPY FOR DIARRHEA: COMPARISON OF US PRACTICES WITH AMERICAN ACADEMY OF PEDIATRICS RECOMMENDATIONS. Pediatrics, vol.87 no.1, January 1991, pp.28-33.

A questionnaire administered to four groups of US physicians, including private practitioners, pediatricians, and housestaff of two Massachusetts hospitals, indicated that the ORS use rate consistent with the American Academy of Pediatrics' recommendations was less than 30%. The majority of respondents also withheld feeding until the second day or later during a diarrheal episode. These findings indicate the need for ORT educational programs in the US.

- 3982 Soenarto, Y. DYSENTERY CASE MANAGEMENT IN PRIMARY HEALTH CARE IN INDONESIA. Berita Pusat Informasi Diare, vol.2 no.1, January-February 1990, pp.2-5.

The author suggests that primary health care workers in Indonesia could be trained to teach mothers how to manage dysentery cases. He discusses proper treatment of dysentery, including diagnostic approach, nutritional management, and antimicrobial therapy.

- 3892 Wasunna, A. DIARRHOEAL DISEASES IN PRETERM NEONATES. East African Medical Journal, April 1990, pp.221-222.

This editorial discusses etiological factors for diarrhea in preterm infants and proper case management in such cases.

ORT (Oral Rehydration Therapy)

- 4465 Avery, M.E.; McCarthy, P.; Snyder, J.D. ORAL REHYDRATION THERAPY: A SIMPLE SOLUTION TO DIARRHEA. *Pediatric Views*, Winter 1990/1991 pp.8-9.

The authors of this brief article examine the barriers to ORT use in the U.S. and discuss ways that physicians and others can promote fluid therapy.

- 3989 Banwell, J.G. WORLDWIDE IMPACT OF ORAL REHYDRATION THERAPY. *Clinical Therapeutics*, vol.12 suppl.A, 1990, pp.29-37.

The worldwide consequences of [ORT] are discussed in four categories: (1) adoption of ORT as the primary therapy for acute dehydrating diarrhea; (2) establishment of national ORT programs; (3) scientific knowledge gained from studies into intestinal absorption of oral rehydration solutions; and (4) implications of ORT for the next decade. [published abstract]

- 3832 Bhan, M.K.; Sazawal, S.; Bhatnagar, S. et al. GLYCINE, GLYCYL-GLYCINE AND MALTODEXTRIN BASED ORAL REHYDRATION SOLUTION. *Acta Paediatrica Scandinavica*, vol.79, 1990, pp.518-526.

[This study] evaluated the efficacy and safety of an oral rehydration solution containing glycyl-glycine, glycine, and maltodextrin (GGG-ORS), in comparison to the glucose based ORS...Ninety-two children [in India] presenting with acute gastroenteritis [caused predominantly by rotavirus] and moderate dehydration, aged 3 months to 3 years, were randomly assigned to receive standard ORS or GGG-ORS. All the patients were successfully rehydrated orally...We conclude that glycine and glycyl-glycine supplemented oral rehydration solution does not have any therapeutic advantage in the treatment of acute gastroenteritis with moderate dehydration caused predominantly by rotavirus. [published abstract]

- 4172 Blum, D.; Herman, E.; Northrup, R. ORAL REHYDRATION AND FEEDING: STATE OF THE ART IN DIARRHEA MANAGEMENT. Arlington, VA, The PRITECH Project, August 1990, 19p.+app.

This paper critically considers some of [the] concerns regarding current recommendations for diarrhea management. It begins with a description of the physiologic basis of oral rehydration. The following sections examine the available evidence concerning the advantages and

disadvantages of using oral rehydration versus intravenous therapy for the treatment of diarrhea-induced dehydration. The final sections review the literature regarding the effects of continued feeding during diarrhea. The discussion focuses on the management of diarrhea in young children (under five years of age) in the health facility setting. [published abstract]

- 4540 Carlson, D.; Gebre, Y.; Abraham, S.W. et al. USE OF FOOD BASED ORAL REHYDRATION THERAPY IN RURAL ETHIOPIA: A CASE STUDY IN YIFATNA TIMUGA DISTRICT. Paper presented at the Annual Meeting of the American Public Health Association, New York, New York, October 2, 1990, 8p.

During the 1984-1985 famine in Ethiopia, approximately 51,000 women were taught to use food based ORT (FBORT) to treat diarrhea in children. In 1989 a follow-up survey was conducted in 12 communities to determine the use rate of FBORT. Of the 857 mothers questioned, 69.9% used some form of ORT for diarrheal episodes in the past 14 days, 48.3% used FBORT alone and 11.5% used FBORT with ORS packets. The results indicate that the initial training was generally effective and that FBORT has fit well into the child care culture of those communities. The authors conclude that a combined ORS-FBORT strategy would be the most effective in many developing countries.

- 3762 Casteel, H.B.; Fiedorek, S.C. ORAL REHYDRATION THERAPY. Pediatric Clinics of North America, vol.37 no.2, April 1990, pp.295-311.

The physiology of intestinal water and electrolyte transport and the pathophysiology of diarrhea are described in this article. There is also a description of the composition of ORS with emphasis on key elements such as sodium and potassium. Finally, the authors discuss the use of ORS in terms of administering the solution, patient monitoring, volume of fluid, and refeeding of infants.

- 3990 Cleghorn, G.J.; Shepherd, R.W.; Patrick, M.K. COMPARISON OF TWO ORAL REHYDRATION SOLUTIONS IN CHILDREN WITH GASTROENTERITIS IN AUSTRALIA. Clinical Therapeutics, vol.12 suppl.A, 1990, pp.81-85.

.. study was undertaken to compare the efficacy and safety of ORS-60, containing 66 mmol/L of sodium and 1.8% glucose and having osmolality of 240 mosm/kg, with those of ORS-26, a low-sodium, high-carbohydrate ORS with an osmolality of 343

mosm/kg. The authors conclude that ORS-60 conferred earlier recovery and reduced fluid losses.

- 3764 Daubenton, J.D.; Ferrinho, P. ORAL REHYDRATION--CONSENSUS OR CONFUSION? South African Medical Journal, vol.77, April 21, 1990, p.425-426, letter.

The authors of these letters to the editor discuss the use of various terms regarding oral rehydration. Aside from the familiar terms of ORT and ORS, they discuss OFT (oral fluid therapy), ODDS (oral diarrheal disease solution), OHT (oral hydration therapy), and OHS (oral hydration solution).

- 4191 Desjeux, J.F. REHYDRATATION PAR VOIE ORALE DES DIARRHEES AIGUES. Gazette Medicale, vol.97 no.30, 1990, pp.65-71.

This article reviews the physiological aspects of dehydration due to diarrhea and explains how oral rehydration therapy can treat the problem.

- 3799 Desjeux, J.F.; Lestradet, H. LA SOLUTION DE REHYDRATATION PAR VOIE ORALE OU LA PHYSIOLOGIE EN SANTE PUBLIQUE. Bulletin de l'Academie Nationale de Medicine, vol.174 no.1, 1990, pp.55-60.

The authors discuss the development of ORT as it relates to various physiological concepts. They state that clinical use of ORT represents a new relationship between physiological concepts and public health.

- 4661 DIFFERENT REHYDRATION SOLUTIONS AND THEIR USEFULNESS. Glimpse, vol.12 no.6, November-December 1990, pp.5+.

This article briefly reviews the efficacy of various ORS formulas including the standard glucose solution and the rice based formula. It is stressed that if home fluids are promoted, they should be safe and readily available. Also, the measurements should be standardized and measuring utensils should be home-available and affordable.

- 4805 El Mougi, M.; Hendawi, A.; Gomaa, M.H. et al. PATTERNS OF DIARRHOEAL DISEASES AT A UNIVERSITY HOSPITAL IN CAIRO: A 7-YEAR EXPERIENCE. Journal of Tropical Pediatrics, vol.37, April 1991, pp.85-86, letter.

The authors of this letter report on the statistics on diarrhea cases from the Diarrhoeal Diseases Research and

Rehydration Centre in Cairo, Egypt. These statistics show that, since 1983 when the CDD Program began, the severity of dehydration in patients presenting to the centre has lessened. Case fatality rates have also decreased. Nearly 100% of children with diarrhea are treated with ORT.

- 3985 Elliott, E.J.; Walker-Smith, J.A.; Farthing, M.J.G. et al. CLINICAL EXPERIENCE WITH A HYPOTONIC ORAL REHYDRATION SOLUTION FOR TREATMENT OF PEDIATRIC GASTROENTERITIS IN THE UNITED KINGDOM. *Clinical Therapeutics*, vol.12 suppl.A, 1990, pp.86-94.

The aim of this study was to evaluate the safety and efficacy of a new ORS, reformulated Dioralyte, containing sodium 60 mmol/L and glucose 90 mmol/L, and having an osmolality of 240 mosm/kg, in children with acute gastroenteritis. Results showed that the solution was safe and effective but not superior to standard treatment.

- 3988 Ferreira, R.M.C.; Cash, R.A. HISTORY OF THE DEVELOPMENT OF ORAL REHYDRATION THERAPY. *Clinical Therapeutics*, vol.12 suppl.A, 1990, pp.2-13.

This article traces the development of oral rehydration therapy from its beginnings in the 1940s to the current research on cereal-based ORS. The clinical and field trials conducted in the Philippines, India, and Bangladesh in the 1960s are highlighted.

- 3987 Guandalini, S. CURRENT CONTROVERSIES IN ORAL REHYDRATION SOLUTION FORMULATION. *Clinical Therapeutics*, vol.12 suppl.A, 1990, pp.38-50.

This article discusses several issues about the preparation and formulation of ORS: whether ORS should be homemade or commercially prepared; what constitutes the optimal sodium content; what base should be present in the ORS; and whether other nutrients can be substituted for glucose. Recommendations for the ideal ORS are also presented.

- 4614 Hatch, D.; Vreuls, R.C.; Toole, M.J. et al. THE EFFECTIVE CASE MANAGEMENT OF CHILDHOOD DIARRHOEA WITH ORAL REHYDRATION THERAPY IN THE KINGDOM OF LESOTHO. *International Journal of Epidemiology*, vol.19 no.4, 1990, pp.1066-1071.

At the Queen Elizabeth II Hospital [in Lesotho], diarrhoea-related admissions as a proportion of all admissions in

children <5 years of age declined from 23% in the year prior to the opening of the Oral Rehydration Therapy Unit (ORTU) to 13% in the first nine months of 1987 ($p < 0.05$). In addition, the case-fatality ratio of children treated in the ORTU declined from 1.4% in the first quarter of 1986 to zero in the second and third quarters of 1987 ($p < 0.05$)...At this major hospital in Lesotho, the standardization of outpatient treatment for diarrhoea with oral rehydration salts (ORS) in the context of an ORTU resulted in a marked decrease in diarrhoea-associated hospitalization and deaths in children <5 years of age. [published abstract]

- 4298 Herman, E.; Tsu, V.D. MONITORING THE SAFETY OF SUGAR-SALT SOLUTIONS PREPARED IN THE HOME: A SAMPLE PROTOCOL. Arlington, VA, Management Sciences for Health, PRITECH Project, January 1990, 22p.+app.

Studies show that significant errors often occur in the preparation of sugar-salt solution. This document provides a step-by-step guide for conducting a household survey to determine the safety of SSS prepared by mothers with previous knowledge of the intervention. It enables managers to decide whether IEC strategies about SSS have worked well.

- 4536 Hirschhorn, N. FROM BEDSIDE TO WORLDWIDE: THE PROGRESS OF ORAL REHYDRATION THERAPY. Presentation made at the Fifth Annual Charles A. Dana Awards for Pioneering Achievements in Health and Education, November 8, 1990, pp.5-24.

In this document the author reviews the history of ORT from its early uses as a treatment for cholera to its current status as the mainstay of diarrhea treatment in general. He discusses the physiological aspects of diarrhea and how ORT prevents life-threatening dehydration. In addition, he discusses related topics such as ORS composition, cereal based solutions, nutrition, and feeding practices.

- 4705 Hirschhorn, N.; Greenough, W.B. PROGRESS IN ORAL REHYDRATION THERAPY. Scientific American, vol.264 no.5, May 1991, pp.50-56.

In this article the authors present a historical overview of ORT from its earliest use for cholera treatment to its present day use during all types of diarrhea. They explain the physiology of dehydration and how ORT alleviates the condition. Finally, they comment on the newest innovations in ORT, such as cereal based solutions, as well as on the importance of feeding during diarrheal episodes.

- 4281 HOME TREATMENT OF ACUTE DIARRHOEA--PROGRAMMATIC AND RESEARCH ISSUES. Geneva, World Health Organization, CDD/ARI/MIP/90.0, June 1990, 7p.

This document begins by providing criteria for the selection of home fluids for treatment of diarrhea. It then discusses the role of cereal-based ORS and feeding in home treatment of diarrhea. Finally, it offers criteria for identifying children who should be taken to a health worker.

- 4109 HOW TO...MAKE A RICE BASED DRINK FOR ORAL REHYDRATION. Dialogue on Diarrhoea, issue 41, June 1990, p.3.

This brief article describes the steps in making a simple rice based oral rehydration solution.

- 4131 Kenya, P.R.; Odongo, H.W.; Molla, A.M. et al. MAIZE-SALT SOLUTION IN THE TREATMENT OF DIARRHOEA. Transactions of the Royal Society of Tropical Medicine and Hygiene, vol.84, 1990, pp.595-598.

In a block-randomized trial [the authors] compared the efficacy of citrate-containing glucose electrolyte solution (GES) versus maize-salt solution (MSS) in the treatment of children [in Kenya] with mild and moderate diarrhoeal dehydration and acidosis...[Results showed that] carefully prepared maize-salt solution may be used successfully in mild and moderate dehydration in the home, as an alternative to the preferred glucose electrolyte formula. [published abstract]

- 4860 Khin-Maung-U; Greenough, W.B. CEREAL-BASED ORAL REHYDRATION THERAPY. I. CLINICAL STUDIES. Journal of Pediatrics, vol.118 no.4 part 2, April 1991, pp.S72-S79.

In this article the authors review clinical studies of cereal based ORS and their effect on stool output and duration during diarrhea. They also discuss the possible beneficial effects of adding amino acids and their polymers to cereal based solutions. They suggest further research to determine the optimal mix of starch, amino acids, oligopeptides, and proteins that would decrease fluid losses as well as reduce duration of diarrhea.

- 3870 Lebenthal, E.; Lu, R.-B. GLUCOSE POLYMERS IN DIARRHEA--HIGH CALORIC DENSITY NUTRIENTS WITH LOW OSMOLALITY. Journal of Pediatric Gastroenterology and Nutrition, vol.11 no.1, pp.1-4.

In this editorial, the authors discuss the possibility that glucose polymers from rice, sorghum, corn and tapioca might be a cheaper and better therapeutic modality than D-glucose in diarrhea.

- 3904 Lee, B. STARCH-BASED ORAL REHYDRATION THERAPY AND ITS APPLICATION. Rhode Island Medical Journal, vol.72, June 1989, pp.203-206.

The author discusses the role of cereal based ORT in treating diarrhea. Among the cited advantages of cereal based solutions are that it is less expensive than packages, it is more accessible to mothers in the developing world, and it can alleviate the logistical problems associated with supplying packets. Some of the disadvantages of cereal based ORT, such as confusing these fluids with weaning foods, are also presented. The importance of further research to determine the viability of home fluids is stressed.

- 3885 Leonard-Jones, J.E. ORAL REHYDRATION SOLUTIONS IN SHORT BOWEL SYNDROME. Clinical Therapeutics, vol.12 suppl.A, 1990, pp.129-137.

This article discusses the use of oral rehydration therapy for patients who suffer consequences from various types of bowel resections and small-bowel stomas.

- 4038 Mahalanabis, D. IMPROVED ORS FORMULATIONS. Journal of Diarrhoeal Diseases Research, vol.8 nos.1 and 2, March-June 1990, pp.1-11.

The author discusses the results of clinical and field trials of improved ORS formulations, including maltodextrin ORS, L-alanine and glucose ORS, rice based ORS, and ORS based on other cereals.

- 3883 Mallet, E.; Guillot, M.; Le Luyer, B. et al. COMPARISON OF TWO ORAL REHYDRATION SOLUTIONS IN EUTROPHIC INFANTS WITH MODERATE ACUTE DIARRHEA: RESULTS OF AN INTERIM ANALYSIS. Clinical Therapeutics, vol.12 suppl.A, 1990, pp.104-112.

A randomized, multicenter clinical trial comparing two oral

rehydration solutions (ORS) with different sugar content and total osmolality was carried out in France...Weight gain, stool output, and biologic variables were analyzed...Patients in both groups gained weight without any significant difference between the two ORS...The weight increase during the first 24 hours and the reduced frequency of stools was similar in both groups. [published abstract]

- 4671 Marin, L.; Zetterstrom, R.; Sokucu, S. et al. ORAL REHYDRATION THERAPY: STUDIES ON POTASSIUM BALANCE. Acta Paediatrica Scandinavica, vol.80, 1991, pp.42-44.

A study was conducted to examine potassium balance during ORT in infants using a solution containing 20 mmol potassium per liter. All the infants were successfully rehydrated. The results demonstrated that an ORS solution with 20 mmol potassium per liter provides enough potassium and, therefore, an increased concentration is not recommended.

- 4573 Mazumder, R.N.; Nath, S.K.; Ashraf, H. et al. ORAL REHYDRATION SOLUTION CONTAINING TRISODIUM CITRATE FOR TREATING SEVERE DIARRHOEA: CONTROLLED CLINICAL TRIAL. British Medical Journal, vol.302, January 12, 1991, pp.88-89.

This study compared ORS containing sodium bicarbonate to ORS with trisodium citrate dihydrate in a clinical trial. Results indicated that the citrate formula was highly stable and was as effective as bicarbonate solution.

- 4179 Mehta, S. SYMPOSIUM ON ORAL REHYDRATION THERAPY IN INFANTS AND CHILDREN. Chandigarh, India, PGIMER and India, UNICEF, 1990, 50p.

This document includes the papers presented at the Symposium on Oral Rehydration Therapy held on February 18, 1990, in Chandigarh, India. The topics presented include: electrolyte loss, current concepts in ORT, ORT in infants and super ORS. There is also a review of an ORT program conducted in a Madras hospital. The general aim of the conference was to assess if the need for ORT is being met in India and if the persons using ORT, namely mothers and health workers, understand the concept of oral rehydration.

- 4153 Meng, C.Y.; Bruggen, G.V. DOES ORS TREAT DIARRHOEA? Dialogue on Diarrhoea, issue 41, June 1990, p.8, letter.

The authors of this letter to the editor comment that ORT is

not always perceived as the most effective treatment for diarrhea because it does not necessarily reduce stool output.

- 4520 Mirza, N.M. ORAL REHYDRATION THERAPY REPORT COMPILED FOR CDD/KENYA: THE FLUID/FOOD PANEL. Arlington, VA, Management Sciences for Health, PRITECH Project, SUP 098-KE, December 1990, 26p.+app.

The Fluid/Food Panel was appointed by the Kenyan Division of Family Health to assist the national CDD Program to identify operational research areas and to provide guidance in formulating policy issues concerning home management of diarrhea. This report includes the panel's recommendations, as well as draft reports by panel members.

- 3884 Molla, A.M.; Molla, A.; Bari, A. ROLE OF GLUCOSE POLYMER (CEREAL) IN ORAL REHYDRATION THERAPY. Clinical Therapeutics, vol.12 suppl.A, 1990, pp.113-121.

In a clinical trial with 2000 Bangladeshi children suffering from acute diarrhea, it was determined that a staple- or food-based ORS achieved a 40% to 60% reduction in stool volume compared to the standard ORS formula. The results suggest that staple-based or food-based ORS is the optimal treatment for diarrheal episodes.

- 4780 ORAL REHYDRATION SALTS. WHO Drug Information, vol.4 no.4, 1990, pp.181-182.

This brief article describes the composition of ORS as well as basic guidelines about preparation, dosage, and administration. A table is also provided which indicates the approximate amount of ORS to give in the first four hours of a diarrhea episode.

- 4537 ORAL REHYDRATION THERAPY AND THE CONTROL OF DIARRHEAL DISEASES. Philippines, Association of Philippine Medical Colleges Foundation for the Philippine Pharmaceutical Association, nd, 12p.

This booklet presents the lecture notes from a Philippine pharmacists' continuing education seminar on use of ORT to treat diarrhea. The notes provide simple guidelines on how to assess levels of dehydration, ORS preparation, the use of drugs in diarrhea treatment, and ways to prevent diarrhea. The pharmacists' role in diarrhea control is also outlined. It includes persuading mothers to use ORT, discouraging

unnecessary drug use, and participation in the community CDD program.

- 4531 Pella, A.-R.U.; Pierce, N. QUESTIONS ABOUT SSS. Dialogue on Diarrhoea, issue 43, December 1990, p.8, letter.

In this letter to the editor the author requests the correct formula for sugar-salt solution and asks what can be done to increase potassium intake during ORT administration. In response, Dr. Nate Pierce provides the WHO SSS formula and suggests alternating giving of fluids with potassium-rich foods to combat hypokalemia.

- 4331 Pelleboer, R.A.A.; Feliuss, A.; Goje, B.S. et al. COULD POTASH FACILITATE THE ACCEPTATION OF CEREAL-BASED ORAL REHYDRATION SOLUTION IN THE NORTHERN PART OF NIGERIA? Tropical and Geographical Medicine, 1990, p.103, letter.

In this letter to the editor, the authors briefly describe a food traditionally used for diarrhea in Nigeria, consisting of potash and guinea corn, millet, or maize. With a little salt added, this food might resemble a cereal-based ORS.

- 4313 Pelleboer, R.A.A.; Feliuss, A.; Goje, B.S. et al. SORGHUM-BASED ORAL REHYDRATION SOLUTION IN THE TREATMENT OF ACUTE DIARRHOEA. Tropical and Geographical Medicine, vol.42, 1990, pp.63-68.

Sixty-four children between 2.5 months and 5 years of age were randomly treated in a hospital in Jos, Nigeria with either WHO ORS or a cereal based ORS containing 60g/l sorghum powder. There were no significant differences between the two groups in amount of fluid used, number of stools, and duration of diarrhea. Sorghum ORS was well accepted and tolerated. This study suggests that it can be safely used as an alternative to WHO ORS.

- 4568 Pizarro, D.; Posada, G.; Sandi, L. et al. RICE-BASED ORAL ELECTROLYTE SOLUTIONS FOR THE MANAGEMENT OF INFANTILE DIARRHEA. New England Journal of Medicine, vol.324 no.8, February 21, 1991, pp.517-521.

In Costa Rica, 86 mildly to moderately dehydrated infants were rehydrated using one of three ORS formulas: a solution containing only rice-syrup solids, a solution with rice-syrup solids and casein hydrolysate, or a glucose-based solution. Results indicated that the rice-syrup solutions

were as effective as the glucose solution in rehydrating the patients. In addition, they decreased stool output and promoted greater absorption and retention of fluid electrolytes than did the glucose solution.

- 4103 Rahman, A.M.; Bari, A. FEASIBILITY OF HOME TREATMENT OF DIARRHOEA WITH PACKAGED RICE-ORS. Journal of Diarrhoeal Diseases Research, vol.8 nos.1-2, March-June 1990, pp.18-23.

Feasibility of home treatment of diarrhoea [in Bangladesh] with packaged rice-based oral rehydration salts (R-ORS) was compared, in terms of cost, with that for glucose-based oral rehydration salts (G-ORS)...The treatment cost per episode was more with R-ORS than with G-ORS, though fewer R-ORS packets were used per episode. Among others, the main factor for the higher cost was found to be the higher production cost of R-ORS packets. Expected early recovery from diarrhoea with use of R-ORS was not observed in this study. [published abstract]

- 4831 Raphael, A.D.; Faust, H. IS INDUSTRIAL SALT SAFE FOR ORT? Dialogue on Diarrhoea, no.44, March 1991, p.7, letter.

In response to a question about the wisdom of using industrial salt for sugar-salt solution, Dr. Hans Faust of WHO replies that industrial salt can be safely used for making SSS.

- 4741 RESEARCH FINDINGS SUPPORT USE OF RICE-BASED ORS. Essential Drugs Monitor, no.10, 1990, p.18.

Recent clinical trials in Bangladesh and India have shown that rice based ORS is as effective as the standard WHO formula and that it could reduce stool output as well. This article briefly reports on the studies which have shown that rice based ORS decreases stool output compared to standard ORS.

- 4120 RICE-BASED ORS. CDD Update, no.7, August 1990, pp.1-4.

This CDD Update reports on WHO's current views about rice-based ORS. The clinical trials to date are briefly reviewed and the results discussed. These results indicate that rice-based solutions are more effective than standard glucose solution in patients with cholera. However, the advantages--if any--of rice-based solutions over standard solution in children with acute, non-cholera diarrhea need further evaluation.

- 4145 Robson, E. DIARRHOEA: HOME-MADE REMEDIES VERSUS FACTORY-MADE CURES. Source, September 1990, pp.25-27.

Some diarrhea control experts now advocate the use of oral rehydration fluids based on traditional foods. This article explores the pros and cons of using such fluids as maize-based gruels, rice water or sorghum water in place of glucose-based ORS.

- 4221 Rolston, D.D.K.; Zinzuvadia, S.N.; Mathan, V.I. EVALUATION OF THE EFFICACY OF ORAL REHYDRATION SOLUTIONS USING HUMAN WHOLE GUT PERFUSION. Gut, vol.31, 1990, pp.1115-1119.

A study in India used whole gut perfusion in humans to compare the effect of WHO formula ORS, a hypertonic commercial ORS, and three experimental bicarbonate-free, hypotonic solutions on intestinal water and electrolyte transport during acute diarrhea. Results suggest that a hypotonic solution with glucose 80mmol/l, sodium 30 mmol/l, potassium 20 mmol/l and 177 mosm/kg may be the optimal choice for acute diarrhea.

- 4057 Rolston, D.D.K.; Mathan, V.I. JEJUNAL AND ILEAL GLUCOSE-STIMULATED WATER AND SODIUM ABSORPTION IN TROPICAL ENTEROPATHY: IMPLICATIONS FOR ORAL REHYDRATION THERAPY. Digestion, vol.46, 1990, pp.55-60.

Intestinal glucose and water absorption in response to glucose [was] studied in tropical enteropathy with a view to determine the optimum glucose concentration in oral rehydration solutions for use in the tropics...This study suggests that the optimal glucose concentration for oral rehydration solutions used in the tropics should be 80mM, as lower and higher concentrations result in diminished jejunal water absorption. [published abstract]

- 4541 Rovner, S. CHILDREN'S ORAL REHYDRATION METHOD MAY HELP THE ELDERLY. The Washington Post, January 22, 1991, np.

Diarrhea can be life-threatening in older people. This brief article notes that ORT could be used to treat diarrhea in the elderly. If administered early enough, ORT may reduce the need for hospitalization and IV therapy in older patients with diarrhea.

- 3926 Santosham, M.; Fayad, I.M.; Hashem, M. et al. A COMPARISON OF RICE-BASED ORAL REHYDRATION SOLUTION AND "EARLY FEEDING" FOR THE TREATMENT OF ACUTE DIARRHEA IN INFANTS. Journal of Pediatrics, vol.116 no.6, June 1990, pp.868-875.

To compare the use of rice-based oral rehydration solution (R-ORS), with the introduction of food immediately after rehydration ('early feeding'), using standard glucose-based oral rehydration solution (G-ORS) in the management of acute diarrhea, [the authors] conducted a four-cell randomized, controlled trial among 200 hospitalized Egyptian infants between 3 and 18 months of age...There were no statistically significant differences among the four groups in the mean duration of diarrhea. [The authors] conclude that (1) infants who were given R-ORS had reduced total stool output (by 35%) compared with the control group and (2) feeding of boiled rice or a rice-based formula immediately after rehydration therapy was as efficacious as treatment with R-ORS alone for 24 hours, followed by feeding with a soy-based, lactose-free formula. [published abstract]

- 4813 Santosham, M.; Greenough, W. B. ORAL REHYDRATION THERAPY: A GLOBAL PERSPECTIVE. Journal of Pediatrics, vol.118 no.4 part 2, 1991, pp.S44-S51.

This article provides an overview of oral rehydration therapy as it has been practiced since the 1970s. It begins with a history of the development of fluid therapy, moving on to cover clinical studies of various oral rehydration solutions, including cereal-based ORS. Finally, it provides recommendations for management of acute diarrhea.

- 3984 Schedl, H.P. SCIENTIFIC RATIONALE FOR ORAL REHYDRATION THERAPY. Clinical Therapeutics, vol.12 suppl.A, 1990, pp.14-21.

A scientific rationale for the use of ORT in treating severe diarrhea is presented...The composition of the ideal ORT solution -- one that maximizes absorption of water, electrolytes, and nutrients -- is discussed in relation to the digestive- absorptive mechanisms of the gut. [published abstract]

- 4108 SELECTION OF HOME FLUIDS. Dialogue on Diarrhoea, issue 41, June 1990, pp.2-3.

This article briefly discusses alternatives to packaged ORS, such as sugar-salt solutions and various food-based solutions. Guidelines are included for selecting home fluids. These include choosing ingredients that are readily

available and acceptable, adding proper amounts of salt, and using a recipe that is safe and familiar.

- 3914 Sloven, D.G.; Jirapinyo, P.; Lebenthal, E. HYDROLYSIS AND ABSORPTION OF GLUCOSE POLYMERS FROM RICE COMPARED WITH CORN IN CHRONIC DIARRHEA OF INFANCY. *Journal of Pediatrics*, vol.116 no.6, 1990, pp.876-881.

[This study] compared the in vitro hydrolysis and clinical tolerance of rice glucose polymer with those of corn glucose polymer...[Results indicate that] rice glucose polymers are more rapidly absorbed than are corn glucose polymers in children with chronic diarrhea. [published abstract]

- 4088 Snyder, J.D. ORAL THERAPY FOR ACUTE DIARRHEA--THE UNDERUSED SIMPLE SOLUTION. *New England Journal of Medicine*, vol.323 no.13, September 27, 1990, pp.891-894.

In this article, the authors review the history of oral rehydration therapy in the U.S. as well as discuss the current diarrhea treatment practices throughout the world. They suggest that ORT may be underused because it is a labor intensive and time consuming activity for child caretakers. They also state that more education is needed to promote ORT use in the United States in order to prevent dehydration and unnecessary hospitalization.

- 3963 Velasquez-Jones, L.; Becerra, F.C.; Faure, A. et al. CLINICAL EXPERIENCE IN MEXICO WITH A NEW ORAL REHYDRATION SOLUTION WITH LOWER OSMOLALITY. *Clinical Therapeutics*, vol.12 suppl.A, 1990, pp.95-103.

A clinical trial was conducted in Mexico to compare the efficacy and safety of a new oral rehydration solution (ORS) with that of the ORS recommended by the World Health Organization (WHO). The new solution, ORS-60, had a lower osmolality than the WHO formula (ORS-90). Results suggest that using a solution with lower osmolality than the WHO formula can have clinical advantages because of the lower incidence of treatment failures.

- 4812 Wapnir, R.A.; Lebenthal, E. DISCUSSION III. *Journal of Pediatrics*, vol.118 no.4 part 2, 1991, pp.S70-S71.

This discussion among several doctors touches on the sodium concentration of ORS, the danger of hypoglycemia, and the

use of rice syrup solids in infants less than 3 months old.

- 4278 Werner, D.; Hirschhorn, N.; Wilson, R. et al. ROUNDTABLE: THE POLITICS OF THE SOLUTION. Links, vol.7 nos.3 and 4, Fall/Winter 1990, pp.9-15.

In this roundtable discussion, leading figures in international health policy discuss a number of issues: (1) advantages and disadvantages of home-mix ORS versus ORS packets; (2) whether the social marketing of packets is at odds with community empowerment; (3) whether international organizations have been slow to accept cereal based ORS; and (4) how far are we from "Health for All by the Year 2000."

- 3910 ZAIRE: A THREE-PHASED OR STUDY INCREASES MOTHERS USE OF ORT. PRICOR Report, vol.3 no.1, 1990, pp.3-4.

An operations research study and two KAP surveys carried out in a rural area of Zaire showed that health worker involvement in education and counseling has a strong impact on mothers' knowledge and practices concerning ORT. Mothers' knowledge and use of ORT increased significantly following sessions with trained health workers.

DRUG THERAPY AND IV (Intravenous) THERAPY

- 4538 ACTION TO IMPROVE NATIONAL POLICIES ON ANTIDIARRHOEAL DRUGS: RESULTS FROM THE WHO EASTERN MEDITERRANEAN REGION. *Weekly Epidemiological Record*, no.51/52, December 21/28, 1990, pp.398-399.

This article briefly reviews the actions taken by countries in the WHO Eastern Mediterranean Region in terms of anti-diarrheal drug policies. Countries such as Iraq, Jordan, Pakistan, Yemen, and the Syrian Arab Republic have reviewed policies and initiated new regulations. An evaluation of Jordan's CDD program found that several anti-diarrheals had been deregistered, mass media campaigns were promoting ORT, and health workers were being trained in rational drug use.

- 4271 Alabi, A.A.; Tolu, O. ANTIMICROBIAL SUSCEPTIBILITY PATTERN OF AEROMONAS AND PLESIOMONAS STRAINS ISOLATED FROM PATIENTS WITH DIARRHOEA IN NIGERIA. *Central African Journal of Medicine*, vcl.36 no.7, July 1990, pp.174-176.

The susceptibilities of 53 isolates of *Aeromonas* species and 16 *Plesiomonas shigelloides* from patients with diarrhea to 15 commonly used antimicrobial agents were determined by the disk-agar diffusion technique. This article reports on the results.

- 3991 Alam, A.N.; Alam, N.H.; Ahmed, T. et al. RANDOMIZED DOUBLE BLIND TRIAL OF SINGLE DOSE DOXYCYCLINE FOR TREATING CHOLERA IN ADULTS. *British Medical Journal*, vol.300, June 23, 1990, pp.1619-1621.

This study aimed to compare the efficacy of a single, 200 or 300mg dose of doxycycline with the standard multiple doses of tetracycline in adult patients with cholera. It concluded that doxycycline is as effective as tetracycline treatment for cholera in terms of stool output, duration of diarrhea, vomiting, and requirement for ORS.

- 3855 ANTI-DIARRHOEAL WITHDRAWN. *Dialogue on Diarrhoea*, issue 40, March 1990, p.2.

This news brief reports on the Wellcome pharmaceutical company's suspension of its Anti-Diarrhoeal Mixture (ADM) following a UK documentary on inappropriate drug use.

- 4721 ANTIDIARRHOEALS IN LATIN AMERICA. HAI News, no.58, April 1991, p.5.

This news note reports on a survey carried out in several Latin American countries on the availability of anti-diarrheals. The findings indicated that 326 anti-diarrheals were marketed in the surveyed countries (Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Peru, Uruguay, and Venezuela). The data also showed that 63% of the drugs contained one or more antibiotics.

- 4524 ANTIMOTILITY DRUGS. Dialogue on Diarrhoea, issue 43, December 1990, pp.4-5.

Two anti-diarrheal drugs, loperamide and diphenoxylate hydrochloride, are described in terms of their formulation, pharmacology, efficacy and adverse effects. Neither drug is recommended for managing diarrhea in children under any circumstances.

- 4832 Arif, H.; Gani, L. TO FEED OR NOT TO FEED? Dialogue on Diarrhoea, no.44, March 1991, p.5.

The Atma Jaya Medical Faculty research group examined the beliefs and practices of physicians in Jakarta, Indonesia regarding treatment of acute childhood diarrhea. The study found significant differences between public and private practices. Antibiotics were recommended more often than ORS in both kinds of practices. Nutritional advice was given less frequently than antibiotics. The study showed a continuing need to educate physicians about appropriate use of ORS and antibiotics.

- 4641 Ashkenazi, S.; Cleary, T.G. ANTIBIOTIC TREATMENT OF BACTERIAL GASTROENTERITIS. Pediatric Infectious Disease Journal, vol.10 no.2, 1991, pp.140-148.

Fluid and electrolyte replacement is the mainstay in treatment of infectious diarrhea of any etiology. However, use of antibiotics is recommended to prevent the complications of certain bacterial diarrheal diseases, such as shigellosis, cholera, and Salmonella gastroenteritis. Here the authors provide guidelines for the proper use of antibiotics.

- 4202 Bala, K. NATIONAL FORUM FOR RATIONAL DRUGS. HAI News, no.54, August 1990, p.1+.

The proceedings of the National Workshop on Rational Use of Drugs held in Savar, Bangladesh, on June 9, 1990, are presented in this article. Participants discussed the reasons for overprescription and unnecessary use of drugs in Bangladesh. Their recommendations included increased education for prescribers and consumers, new legislative and regulatory measures, and the establishment of a drug information service.

- 3833 Balchin, C. ANTIDIARRHOEAL KILLER MEDICINES. *She*, June 1990, pp.56-59.

In this article the author comments on the uselessness and possible harmful effects of anti-diarrheal medications. She stresses that many anti-diarrheals distributed in developing countries for children are not recommended for their Western counterparts. The article also provides a list of commonly prescribed anti-diarrheals along with the names of the companies that distribute them.

- 4210 Bates, C.J.; Wilcox, M.H.; Spencer, R.C. et al. CIPROFLOXACIN AND CLOSTRIDIUM DIFFICILE INFECTION. *The Lancet*, vol.336 no.8724, November 10, 1990, p.1193, letter.

In this letter to the editor, the authors report on two cases in which the patients had *Clostridium difficile* infections following treatment with ciprofloxacin for enteric salmonellosis.

- 3813 Bhattacharya, S.K.; Bhattacharya, M.K.; Dutta, P. et al. DOUBLE-BLIND, RANDOMIZED, CONTROLLED CLINICAL TRIAL OF NORFLOXACIN FOR CHOLERA. *Antimicrobial Agents and Chemotherapy*, vol.34 no.5, May 1990, pp.939-940.

In a double-blind, randomized clinical trial with 78 adults with acute watery diarrhea and severe dehydration [in India], 37 subjects were positive for *Vibrio cholerae*. In conjunction with rehydration therapy, 13 patients received norfloxacin, 12 received trimethoprim-sulfamethoxazole (TMP-SMX), and 12 received a placebo. Norfloxacin was superior to TMP-SMX and to the placebo in reducing stool output, duration of diarrhea, fluid requirements, and vibrio excretion. TMP-SMX was no better than the placebo. [published abstract]

- 3864 Bhutta, T.I. ANTI-MOTILITY DRUGS FOR INFANTS. *The Lancet*, vol.336 no.8710, August 4, 1990, p.314, letter.

In this follow-up letter to the editor, the author comments on the withdrawal of loperamide drops from third world markets by the Johnson and Johnson pharmaceutical company. He also mentions other companies, such as Searle and Feroze Sons, which produce anti-diarrheals that have not been withdrawn.

- 4803 Botterweg, T.; Persson, H.; Rydell, U. LOCAL PRODUCTION OF ESSENTIAL DRUGS IN ZAMBIA. Lusaka, Zambia, DGIS/SIDA, March 1990, 36p.+app.

Due to the severe economic crisis in Zambia, efforts are being made to explore mechanisms for local production of essential drugs. This report reviews the possibilities for local production as well as the constraints. Despite the fact that production capacity is available, it would be difficult for the Zambian industry to compete with the international pharmaceutical industry since international prices tend to be very competitive. Based on their findings, the authors present a proposal for local production of essential drugs that would be feasible and cost efficient.

- 3840 Bryant, D.H. EVALUATION OF PHARMACARE RAMALLAH, WEST BANK. Arlington, VA, Management Sciences for Health, PRITECH, HSS 068-WB, January 9-20, 1990, 12p.

The consultant performed an assessment of the operations of the Pharmicare pharmaceutical plant in Ramallah based on the US Current Good Manufacturing Practice (GMP) regulations. Small deviations from GMP were detected, but none were serious enough to warrant halting production. Recommendations are made for improvements.

- 4270 Buckley, P.; Larkin, C.; O'Callaghan, E. PSYCHOSIS FOLLOWING USE OF PROPRIETARY ANTIDIARRHOEAL MEDICINES. British Journal of Psychiatry, vol.157, 1990, pp.758-759.

Anticholinergic psychosis was observed to follow ingestion of proprietary antidiarrheal preparations in a 63-year-old woman. The diagnosis was that of psychosis due to the belladonna in a preparation called Enterosan. Possible abuse or accidental overuse of such medicines in the acutely psychotic patient should always be considered.

- 4710 Carlini, E.A.; Herxheimer, A. BRAZIL: PHARMACEUTICAL INDUSTRY FEARS INFORMED CRITICISM. The Lancet, vol.337 no.8743, March 23, 1991, p.724.

This news note reports on a newly founded organization in Brazil, Sobravime (the Brazilian Society for the Surveillance of Medicines), which was formed to encourage rational drug use. The organization has already been criticized by the Brazilian Association of the Pharmaceutical Industry, which says that the new organization will only create public panic about drugs.

- 4666 Cassel-Beraud, A.M.; Coulanges, P.; Richard, C. et al. RESISTANCE AUX ANTIBIOTIQUES DE SOUCHES DE SHIGELLA DYSENTERIAE ET FLEXNERI ISOLEES A TANANARIVE ET SUR LA COTE-EST DE MADAGASCAR. Bulletin de la Societe de Pathologie Exotique, vol.83, 1990, pp.31-36.

From November 1988 to March 1989, 37 strains of Shigella were isolated from 804 Malagasy children in Madagascar. Five strains of S. dysenteriae serotype 1 were found to be resistant to several antibiotics including ampicillin, carbenicillin, streptomycin, chloramphenicol, tetracycline, sulphonamide and trimethoprim. Resistance to trimethoprim is a recent occurrence in Madagascar.

- 4647 Cimolai, N.; Carter, J.E. ANTIDIARRHEAL AGENTS: MORE TO THE APPLE SAUCE THAN YOU MIGHT THINK. Canadian Family Physician, vol.37, January 1991, pp.185-187.

The authors review the use of drugs such as adsorbents, opioids, anticholinergic agents and others in the treatment of infectious diarrheas. They caution that drugs can make the diarrhea worse.

- 4122 Cimolai, N.; Carter, J.E. ANTIMOTILITY AGENTS FOR PEDIATRIC USE. The Lancet, vol.336 no.8718, October 6, 1990, p.874, letter.

The authors of this letter to the editor comment on adverse effects of using antimotility drugs for children. They state that such medications can enhance toxin absorption and lead to worsening of some infectious conditions, such as haemolytic-uraemic syndrome.

- 4113 Claeson, M.; Clements, M.L. RIDDING THE WORLD OF HYDROXYQUINOLONES. British Medical Journal, vol.299, 1989, pp.527-528.

In this brief article the authors comment on the use of drugs containing hydroxyquinolones as anti-diarrheals. They cite evidence showing that these drugs are ineffective and

unsafe and recommend a worldwide ban of hydroxyquinolone-containing medicines.

- 4810 Desjeux, J.-F.; Mary, J.-Y.; Flori, Y.-A. et al. AGENTS FOR DIARRHOEA IN CHILDREN. *The Lancet*, vol.337 no.8746, April 13, 1991, pp.924-925, letter.

These letters to the editor address an earlier article in *The Lancet* about the WHO book on the rational use of drugs in the management of acute diarrhea in children. The first letter protests the fact that WHO failed to recommend the use of smectite for children with diarrhea. This drug reduces the duration of diarrhea, but not stool output. The second letter, by T.I. Bhutta, expresses the view that the WHO book will not help get dangerous and ineffective anti-diarrheal drugs off the market.

- 4068 Donowitz, M.; Levine, S.; Watson, A. NEW DRUG TREATMENTS FOR DIARRHOEA. *Journal of Internal Medicine*, vol.228 suppl.1, 1990, pp.155-163.

This paper reviews the scientific background to the development of new drugs for the treatment of diarrhoeal diseases, and it includes an update of three classes of drugs which may prove useful: gut specific alpha 2 - adrenergic agonists, intestinal Cl- channel blockers, and somatostatin analogues. [published abstract]

- 4258 DRUGS AND CHILDHOOD DIARRHOEA. *Dialogue on Diarrhoea*, no.42, September 1990, p.1.

This brief article discusses the problem of misuse of drugs in the treatment of childhood diarrhea. It includes a graph comparing use of ORS to use of drugs for diarrhea in 5 regions.

- 4257 DRUGS AND DIARRHOEA. *Dialogue on Diarrhoea*, no.42, September 1990, pp.2-4.

In most cases of childhood diarrhea, drugs are unnecessary and inappropriate. Based on a literature review by the WHO CDD Program this article reviews the information available on 3 types of antimicrobial agents: neomycin, streptomycin and hydroxyquinolines.

- 4833 DRUGS AND DIARRHOEA: ADSORBENTS AND SULPHONAMIDES. Dialogue on Diarrhoea, no.44, March 1991, pp.2-4.

Once widely recommended for treating diarrhea, adsorbents and sulphonamides are no longer considered appropriate drugs for diarrhea. Adsorbents such as kaolin and pectin do not appreciably reduce diarrhea duration, stool frequency, or stool losses. Their use may also detract from use of ORT and feeding. Sulphonamides have been shown to be ineffective and toxic, and many bacteria have become resistant to them.

- 3978 Dukes, G.E. OVER-THE-COUNTER ANTIDIARRHEAL MEDICATIONS USED FOR THE SELF-TREATMENT OF ACUTE NONSPECIFIC DIARRHEA. American Journal of Medicine, vol.88 suppl.6A, June 20, 1990, pp.6A-24S-6A-26S.

With more than 100 antidiarrheal products on the market, choosing the best product for the self-treatment of diarrhea is not an easy process...To determine which ingredients and products are safe and effective and, therefore, which should be maintained on the OTC market, the FDA is in the process of reviewing the ingredients of all OTC products.
[published abstract]

- 1970 DuPont, H.L.; Sanchez, J.F.; Ericsson, C.D. et al. COMPARATIVE EFFICACY OF LOPERAMIDE HYDROCHLORIDE AND BISMUTH SUBSALICYLATE IN THE MANAGEMENT OF ACUTE DIARRHEA. American Journal of Medicine, vol.88 suppl.6A, June 20, 1990, pp.6A-15S-6A-23S.

An open-label, parallel comparison of loperamide hydrochloride (Imodium A-D) and bismuth subsalicylate (Pepto-Bismol) was conducted using non-prescription dosages in adult students with acute diarrhea...It was concluded that loperamide is effective at a daily dosage limit of 8mg (40ml) for the treatment of acute nonspecific diarrhea and provides faster, more effective relief than bismuth subsalicylate. [published abstract]

- 969 DuPont, H.L.; Ericsson, C.D.; DuPont, M.W. et al. A RANDOMIZED, OPEN-LABEL COMPARISON OF NONPRESCRIPTION LOPERAMIDE AND ATTAPULGITE IN THE SYMPTOMATIC TREATMENT OF ACUTE DIARRHEA. American Journal of Medicine, vol.88 suppl.6A, June 20, 1990, pp.6A-20S-6A-23S.

The efficacy of nonprescription doses of loperamide hydrochloride (Imodium A-D) was compared with nonfibrous activated attapulgitite (Diasorb) in a randomized, parallel, open-label study of adult patients with acute diarrhea. The

results of the study showed loperamide to be more effective than attapulgit in the control of diarrhea. [published abstract]

- 173 DURG-AFRO. The Lancet, vol.336 no.8721, October 20, 1990, pp.999-1000.

This news note describes the formation of the group DURG-AFRO (African Drug Utilization Research Group), which was formally established in 1990 by eleven African countries with assistance from Italy and Norway. The group will conduct drug utilization studies, devise curricula that incorporate rational drug use components, and promote the adoption of national essential drug policies.

- 185 Edozien, L. DANGERS OF DRUGS ACROSS-THE-COUNTER. Africa Health, vol.12 no.6, September 1990, p.34.

The author discusses the dangers of having too many drugs available over the counter, especially in developing countries where knowledge of drug effects is limited and quality control is not rigorous enough. He uses examples from Nigeria, where many drugs are readily available at pharmacies without a prescription.

- 809 EVALUATION OF RATIONAL DRUG THERAPY IN YEMEN. Bulletin of the World Health Organization, vol.61, 1991, pp.129-130.

This brief article reports on the results of an evaluation of a national essential drugs program in Yemen. The evaluation found that patients in the program area received fewer antibiotics and fewer drugs per prescription than patients in the control area. Health workers in the program area also had higher levels of knowledge about rational drug therapy than workers in areas that were not yet included.

- 175 GERMAN AND SWISS DRUGS IN DEVELOPING COUNTRIES. The Lancet, vol.336 no.8720, October 13, 1990, p.934.

An assessment of the quality and appropriateness of German and Swiss drugs marketed in developing countries is described in this news note. The study found that almost half of exported drugs from both countries were unnecessary and that several drugs still marketed in developing countries had lost licenses in the home country for safety reasons.

- 4530 Gilbert, K. TRAINING PHARMACISTS. Dialogue on Diarrhoea, issue 43, December 1990, p.8, letter.

The author of this letter to the editor comments on the importance of teaching pharmacists about dehydration and use of ORT in order to reduce unnecessary drug prescriptions.

- 3844 Gussin, R.Z. WITHDRAWAL OF LOPERAMIDE DROPS. The Lancet, vol.335 no.8705, June 30, 1990, pp.1603-1604, letter.

In this letter to the editor, a representative of the Johnson and Johnson pharmaceutical company comments on the company's efforts to withdraw the anti-diarrheal, Imodium (loperamide) from the developing country market. The company initiated these efforts as a result of infant fatalities in Pakistan due to use of loperamide drops. The author states that the drug itself is not the problem, but rather the misuse of it in developing countries.

- 4523 Gutierrez, G. PHYSICIANS' BEHAVIOR. Dialogue on Diarrhoea, issue 43, December 1990, p.3.

A study in Mexico City examined the prescribing practices of 69 physicians before and after educational interventions that promoted ORT use and discouraged overuse of drug therapy. After the education sessions ORT prescriptions rose while drug prescriptions declined. The prescription patterns of physicians in the control group (those who received no education) did not change.

- 4730 Harnett, N.; McLeod, S.; Au Yong, Y. et al. INCREASING INCIDENCE OF RESISTANCE AMONG SHIGELLAE TO TRIMETHOPRIM. The Lancet, vol.337 no.8741, March 9, 1991, p.622, letter.

The authors of this letter to the editor discuss the increasing resistance of Shigella strains to trimethoprim, an antimicrobial. They suggest that this points to the need for more prudent use of antimicrobials in the treatment of shigellosis.

- 4526 Herxheimer, A. ESSENTIAL DRUGS IN DEVELOPING COUNTRIES. HAI News, no.57, February 1991, pp.1+.

In this article the author discusses the concept of essential drugs and how private volunteer agencies have been collaborating with WHO to promote rational drug use. He also briefly outlines the key elements of an effective national drug policy including legislation, procurement and

distribution, and information.

- 3888 Herxheimer, A. FRANCE: MEDICINES IN FRANCOPHONE AFRICA. The Lancet, vol.335 no.8705, June 16, 1990, pp.1449-1450.

This news note describes a study conducted in Tunisia, Algeria, Morocco, Burkina Faso, Congo, Ivory Coast, Mali, Senegal, and Zaire. The study focuses on the sale and distribution of drugs in these African countries and the involvement of the French pharmaceutical industry in such activities. The results indicated that pharmaceutical marketing practices often neglected the needs of African patients and that many unnecessary drugs were being promoted for sale.

- 4002 Hogerzeil, H.V.; Sallami, A.O.; Walker, G.J.A. et al. IMPACT OF AN ESSENTIAL DRUGS PROGRAMME ON AVAILABILITY AND RATIONAL USE OF DRUGS. The Lancet, vol.1 no.8630, January 21, 1989, pp.141-142.

Availability and rational use of drugs was assessed in a random sample of 19 peripheral health units in two governorates in Democratic Yemen in which an essential drugs programme has been operational in the past few years...Programme areas differed considerably from control areas in patterns of drug use, with fewer injections (24.8% vs 57.8% of prescriptions) and fewer antibiotics (46.3% vs 66.8%) being prescribed in programme areas, which also had fewer drugs per prescription (1.5 vs 2.4). [published abstract]

- 4570 Hooper, D.C.; Wolfson, J.S. FLUOROQUINOLONE ANTIMICROBIAL AGENTS. New England Journal of Medicine, vol.324 no.6, February 7, 1991, pp.384-394.

This review article evaluates fluoroquinolone antimicrobial agents in terms of their mechanisms of action and resistance, in vitro activity, pharmacokinetics, clinical efficacy, adverse effects, and clinical uses. Clinical efficacy was examined with respect to several conditions including urinary tract infections, gastrointestinal illnesses, sexually transmitted diseases, and respiratory tract infections.

- 4533 INDONESIA WITHDRAWS LOPERAMIDE. HAI News, no.57, February 1991, p.4.

This news note reports that the Indonesian government officially ordered the withdrawal of the anti-diarrheal loperamide from the drug market.

- 4521 Jacoby, G.A.; Archer, G.L. NEW MECHANISMS OF BACTERIAL RESISTANCE TO ANTIMICROBIAL AGENTS. *New England Journal of Medicine*, vol.324 no.9, February 28, 1991, pp.601-612.

In this article the authors focus on new bacterial resistance mechanisms that have appeared in response to the widespread use of newer, broad-spectrum antibiotics and the increased and often indiscriminate use of older agents. Only drugs currently available commercially in the U.S. are discussed, including methicillin, vancomycin, amikacin and fluoroquinolones.

- 3872 Kaya, I. S.; Dilmen, U.; Senses, D. A. DANGER OF ANTIBIOTIC RESISTANCE IN SHIGELLOSIS. *The Lancet*, vol.336 no.3708, July 21, 1990, p.186, letter.

The authors of this letter to the editor point out that shigellae have become resistant to most antimicrobial agents used in its treatment. Therefore, antimicrobials only should be used in severe *Shigella* dysentery.

- 3841 Kelso, J.H. ASSESSMENT OF THE MANUFACTURING AND PRODUCTION OPERATIONS OF THE BALSAM PHARMACEUTICAL MANUFACTURING PLANT IN RAMALLAH, WEST BANK. Arlington, VA, Management Sciences for Health, PRITECH, HSS 068-WB, November 28-December 16, 1989, 30p.

The consultant reports on his assessment of the manufacturing and production operations of the Balsam pharmaceutical plant in Ramallah, West Bank. The two major deficiencies noted are lack of management and lack of good manufacturing practices. Recommendations are given to correct these problems.

- 3981 Lamikanra, A.; Ako-Nai, A.K.; Ola, J.B. TRANSMISSIBLE TRIMETHOPRIM RESISTANCE IN STRAINS OF ESCHERICHIA COLI ISOLATED FROM CASES OF INFANTILE DIARRHOEA. *Journal of Medical Microbiology*, vol.32, 1990, pp.159-162.

Of 190 isolates of *Escherichia coli* from children aged up to 5 years with diarrhoea [in Ibadan, Nigeria], 72 (37.9%) were resistant to trimethoprim and of the 70 isolates tested, 38 transferred high level trimethoprim resistance into *E. coli* EC 1005. Of the enterotoxigenic isolates from which

trimethoprim resistance was transferred, 41.2% also contained transmissible toxigenic characteristics. All the trimethoprim-resistant isolates were resistant to other antibiotics. [published abstract]

- 3845 Lester, S.C.; Pla, M.D.P.; Wang, F. et al. THE CARRIAGE OF ESCHERICHIA COLI RESISTANT TO ANTIMICROBIAL AGENTS BY HEALTHY CHILDREN IN BOSTON, IN CARACAS, VENEZUELA, AND IN QIN PU, CHINA. *New England Journal of Medicine*, vol.323 no.5, August 2, 1990, pp.285-289.

This study compared the resistance of 8 agents of *Escherichia coli* in stool samples from untreated, healthy children in cities in 3 continents. It found that the bacteria that colonize healthy children may be resistant far more often in some regions than in others. A low rate of carriage of antimicrobial resistance should become a public health goal.

- 4037 Levy, S.B. STARTING LIFE RESISTANCE-FREE. *New England Journal of Medicine*, vol.323 no.5, August 12, 1990, pp.335-337.

This editorial describes the problem of bacterial resistance to antibiotics, focusing on the results of a recent study by Lester et al. of antibiotic resistance in Caracas, Venezuela; Qin Pu, China; and Boston, MA. Various means of reducing reservoirs of resistance genes are discussed.

- 3825 Levy, S.B. TOWARDS MORE PRUDENT USE OF ANTIBIOTICS. *Africa Health*, vol.12 no.4, May 1990, p.34.

This article describes the work of the Alliance for Prudent Use of Antibiotics (APUA). APUA is attempting to curb the unnecessary prescribing and use of antibiotics, especially in developing nations, which has led to increases in bacterial resistance.

- 3806 LOPERAMIDE POISONING IN CHILDREN. *The Lancet*, vol.335 no.8702, June 9, 1990, p.1394.

This news note reports on Professor Tariq Bhutta's letter to the Johnson and Johnson pharmaceutical company which asked the company to recall the anti-diarrheal imodium. Imodium was cited as the cause of death of six Pakistani children. Despite the company's agreement to withdraw the drug, a television team discovered that 2 months following the withdrawal, imodium drops could still be bought over the

counter in 60% of chemist shops visited.

- 3921 MALARIA CONTROL AND DRUG PRODUCTION IN BURKINA FASO. Africa Health, vol.12 no.5, July 1990, p.28.

This article briefly describes two projects in Burkina Faso which were undertaken to combat malaria and to improve the national production, distribution, and quality control of essential drugs. These projects were carried out with assistance from the Italian government.

- 4425 Mastro, T.D.; Ghafoor, A.; Nomani, N.K. et al. ANTIMICROBIAL RESISTANCE OF PNEUMOCOCCI IN CHILDREN WITH ACUTE LOWER RESPIRATORY TRACT INFECTION IN PAKISTAN. The Lancet, vol.337 no.8734, January 19, 1991, pp.156-159.

87 strains of Streptococcus pneumoniae isolated during three winter seasons (1986-1989) from the blood of children with acute lower respiratory tract infection (ALRI) in Pakistan were serotyped and tested for susceptibility to a range of antimicrobial agents. 97% of isolates were resistant to at least one antimicrobial drug...The findings highlight the need for surveillance of antimicrobial resistance and serotype distribution of S pneumoniae in developing countries as a guide both to the choice of agent for treatment of pneumococcal infections, especially ALRI, and to the formulation of new pneumococcal conjugate vaccines for use in young children. [published abstract]

- 4101 McGavock, H. HELPING FAMILY DOCTORS TO SELF-REGULATE THEIR PRESCRIBING (THE 13-YEAR NORTHERN IRELAND EXPERIENCE). Essential Drugs Monitor, no.9, 1990, pp.4-5.

For over 14 years, physicians in Northern Ireland have benefited by a prescribing feedback system, based on complete computerized records of all GP prescriptions. Two things maximize the system's impact: it needs to be interpreted for each group of doctors (practice), and it should be discussed with the doctors at a face-to-face meeting.

- 4055 Mitra, A.K.; Rabbani, G.H. A DOUBLE-BLIND CONTROLLED TRIAL OF BIOFLORIN (STREPTOCOCCUS FAECIUM AF68) IN ADULTS WITH ACUTE DIARRHEA DUE TO VIBRIO CHOLERAEE AND ENTEROTOXIGENIC ESCHERICHIA COLI. Gastroenterology, vol.99, 1990, pp.1149-1152.

The therapeutic efficacy of Bioflorin...in acute watery

diarrhea was evaluated in 183 Bangladeshi adults...It is concluded that Bioflorin has no demonstrable antidiarrheal property in adults with acute diarrhea due to V. cholerae or enterotoxigenic E. coli infection. [published abstract]

- 4053 Motala, C.; Hill, I.D.; Mann, M.D. et al. EFFECT OF LOPERAMIDE ON STOOL OUTPUT AND DURATION OF ACUTE INFECTIOUS DIARRHEA IN INFANTS. *Journal of Pediatrics*, vol.117 no.3, September 1990, pp.467-471.

This study was designed to assess the effect of loperamide, given to infants in higher than recommended doses, on the severity and duration of acute diarrhea [in South Africa]...Infants receiving loperamide had a shorter duration of diarrhea...and lower daily stool output than the control subjects had. The study confirmed the efficacy of loperamide in reducing the duration and severity of diarrhea but raised doubts regarding its safety in the treatment of young infants. [published abstract]

- 3898 NARROWING OF NIGERIA'S DRUG LIST CAUSING COMPLICATIONS. *Africa Health*, vol.12 no.5, July 1990, p.5.

This news note reports on Nigerian pharmacists' and drug manufacturers' protest regarding the banning of all pharmaceuticals not appearing on the official list of essential drugs.

- 3817 NIGERIAN PHARMACISTS RAGE AT NEW DRUG RULES FOR PUBLIC AND PRIVATE SECTOR. *Africa Health*, vol.12 no.4, May 1990, p.3.

This article reports on Nigerian pharmacists' reaction to a decree which banned public and private use or promotion of drugs not included in an essential drugs list. The government's attempt to regulate the private sector has led the pharmacists to protest the decree.

- 4749 Nwodo, O.F.C.; Alumanah, E.O. STUDIES ON ABRUS PRECATORIUS SEEDS. II: ANTIDIARRHOEAL ACTIVITY. *Journal of Ethnopharmacology*, vol.31, 1991, pp.395-398.

The antidiarrheal effects of a substance (BN) isolated from the seed of *Abrus precatorius* were examined in this study. Results showed that BN inhibited both the incidence and severity of diarrhea, thus supporting the use of the seed in traditional medicine as an antidiarrheal.

- 4657 Panthong, A.; Kanjanapothi, D.; Taesotikul, T. et al.
ETHNOBOTANICAL REVIEW OF MEDICINAL PLANTS FROM THAI
TRADITIONAL BOOKS, PART II: PLANTS WITH ANTIDIARRHEAL,
LAXATIVE AND CARMINATIVE PROPERTIES. *Journal of*
Ethnopharmacology, vol.31, 1991, pp.121-156.

A survey of medicinal plants used in Thailand has been made from Thai books on traditional herbal medicine. In this part of the survey, 326 plants with antidiarrheal, laxative and/or carminative properties are described. Information provided for each species includes plant part used, methods of preparation and administration and literature references to Thai books, together with indications of usage in other Southeast Asian countries and of phytochemical work which has been performed. [published abstract]

- 4740 PERU: A MAJOR DRIVE TO RATIONALIZE TREATMENT OF DIARRHOEA.
Essential Drugs Monitor, no.10, 1990, p.19.

National surveys in Peru showed that despite the government's endorsement of ORT, the majority of diarrheal episodes were treated with drugs, especially antibiotics and anti-diarrheals. A workshop was held in November 1989 by the Peruvian scientific community and the WHO/PAHO office in Lima to discuss the survey results and to consider options. As a result pediatric seminars on proper diarrhea management have been held as well as various forums for health professionals which encourage rational drug use.

- 4001 Pierce, N.F. THE ROLE OF DRUGS IN THE MANAGEMENT OF DIARRHOEA
IN CHILDREN. *European Journal of Pharmacology*, 1990,
pp.1580-1581.

This brief article describes WHO's position on the use of drugs to treat diarrheal disease.

- 1649 Pithie, A.D.; Wood, M.J. TREATMENT ON TYPHOID FEVER AND
INFECTIOUS DIARRHOEA WITH CIPROFLOXACIN. *Journal of*
Antimicrobial Chemotherapy, vol.26 supplement F, 1990,
pp.47-53.

Ciprofloxacin and other related fluorinated 4-quinolones have microbiological and pharmacokinetic properties that suggest they could be useful agents in the management of typhoid fever and bacterial gastroenteritis. This paper reviews the clinical experience with ciprofloxacin in typhoid fever and infectious diarrhea.

- 3956 QUINOLONES IN ACUTE NON-TRAVELLERS' DIARRHOEA. The Lancet, vol.336 no.8710, August 4, 1990, p.282.

This brief article discusses the role of the new quinolones in the treatment of non-travellers diarrhea. These agents are contraindicated in children.

- 4180 RATIONAL USE OF DRUGS. Africa Health, vol.12 no.6, September 1990, p.3.

This news note briefly describes the activities of INRUD (International Network for the Rational Use of Drugs), which include improving physician prescribing behavior and promoting essential drug policies.

- 4482 THE RATIONAL USE OF DRUGS IN THE MANAGEMENT OF ACUTE DIARRHOEA IN CHILDREN. Geneva, World Health Organization, 1990, 71p.

This document reviews the documented pharmacology, mechanism of action, efficacy, adverse effects and drug interactions of various types of antimotility drugs, antimicrobial agents and adsorbents used in the management of acute diarrhea in children. Conclusions are presented and recommendations made on the role and use of such drugs in treating childhood diarrhea. This information is intended primarily for CDD program managers, health professionals, educators of medical students, nurses, pharmacists and other health workers.

- 3873 Reina, J.; Alomar, P. FLUOROQUINOLONE-RESISTANCE IN THERMOPHILIC CAMPYLOBACTER SPP ISOLATED FROM STOOLS OF SPANISH PATIENTS. The Lancet, vol.336 no.8708, July 21, 1990, p.186, letter.

In this letter to the editor, the authors report on their findings of fluoroquinolone-resistant Campylobacter strains in Spanish patients with diarrhea.

- 4256 Saade, C.; Huff-Rousselle, M. PAKISTAN: SHOULD ORS BE MARKETED LIKE OTHER DRUGS? Dialogue on Diarrhoea, no.42, September 1990, p.6.

The relatively weak market position of ORS may be one reason why it is not used more often, as compared to anti-diarrheal drugs. The authors of this short article argue that understanding commercial sales techniques could help to increase the use of ORS.

- 4731 Saha, S.K.; Khan, W.A.; Hoq, M.S. et al. PENICILLIN-RESISTANT PNEUMOCOCCI IN BANGLADESHI CHILDREN. *The Lancet*, vol.337 no.8743, March 23, 1991, pp.734-735, letter.

In this letter to the editor the authors report on the incidence of penicillin-resistant strains of pneumococci in Bangladesh.

- 4728 Schorling, J.B.; De Souza, M.A.; Guerrant, R.L. ANTIBIOTIC USE AMONG CHILDREN IN AN URBAN BRAZILIAN SLUM: A RISK FACTOR FOR DIARRHEA? *American Journal of Public Health*, vol.81 no.1, January 1991, pp.99-100.

Among a cohort of children in a poor urban setting in Brazil, the relative risk for the occurrence of a new episode of diarrhea in the two weeks following antibiotic use vs all other weeks was 1.44...Among children never exposed to antibiotics, the odds ratio was 1.34...Further research is needed to confirm whether antibiotics are a risk factor for diarrhea in such settings. [published abstract]

- 3811 Shennak, M.M.; Beiruti, M.A.; Ghawi, S.S. DOUBLE-BLIND COMPARISON OF LOPERAMIDE AND PLACEBO AGAINST ACUTE DIARRHOEA IN ADULTS. *Saudi Medical Journal*, vol.11 no.3, 1990, pp.214-217.

In this trial the authors have investigated the antidiarrhoeal effect of loperamide and the drug's contribution to the correction of dehydration in adult patients presenting with acute diarrhoea at the Al-Bashir Hospital in Amman [Jordan]...[Results indicated that] loperamide significantly reduced the number of loose stools and the time until the first solid stool, but there was no significant effect on fluid requirements. [published abstract]

- 4572 Smith, D.F.; Smith, C.C.; Douglas, J.G. et al. SEVERE SALMONELLOSIS RELATED TO ORAL ADMINISTRATION OF ANTI-DIARRHOEAL DRUGS. *Scottish Medical Journal*, vol.35, 1990, pp.176-177.

The authors present four cases of severe illness associated with Salmonella infection in previously healthy patients with no recognized risk factors. Common to each patient was the pre-hospital oral administration of anti-diarrheal drugs. The authors conclude that antimotility drugs should be avoided in patients with diarrhea which may be due to gastrointestinal infection.

- 4854 Smith, F. MANAGEMENT OF CHILDHOOD DIARRHOEA. British Medical Journal, vol.302, March 30, 1991, p.788, letter.

This letter reports on the results of a study in Great Britain that recorded actual pharmacist-parent consultations about childhood diarrhea on audiotape. In all cases, ORS was supplied; no other product was recommended or sold. However, the pharmacists sometimes advised against offering food or milk products.

- 4579 Soriano-Brucher, H.; Avendano, P.; O'Ryan, M. et al. BISMUTH SUBSALICYLATE IN THE TREATMENT OF ACUTE DIARRHEA IN CHILDREN: A CLINICAL STUDY. Pediatrics, vol.87 no.1, January 1991, pp.18-27.

The authors conducted a clinical trial in 123 Chilean children with acute diarrhea to determine the effectiveness of bismuth subsalicylate when used in conjunction with rehydration therapy. Bismuth subsalicylate was well tolerated, produced no adverse effects, and reduced the duration of the hospital stay.

- 3874 Tan, M.L. THE PHILIPPINES' GENERICS ACT: THE FIRST THREE MONTHS. HAI News, no.53, June 1990, pp.1-2+.

Implementation of the Philippines' Generics Act went into full force in January 1990. This article reviews the first four months of implementation of the law based on monitoring by the Philippine Drug Action Network.

- 4801 Taylor, D.N.; Sanchez, J.L.; Thornton, S. et al. TREATMENT OF TRAVELERS' DIARRHEA: CIPROFLOXACIN PLUS LOPERAMIDE COMPARED WITH CIPROFLOXACIN ALONE. Annals of Internal Medicine, vol.114 no.9, May 1, 1991, pp.731-734.

A study was conducted among U.S. military personnel to compare the safety and efficacy of loperamide used in combination with ciprofloxacin or ciprofloxacin alone for the treatment of travelers diarrhea. The most common pathogen isolated from the patients was enterotoxigenic E. coli (ETEC). Results indicated that in an area where ETEC was the predominant cause of diarrhea, the combination of loperamide and ciprofloxacin was not better than ciprofloxacin alone. Both regimens were determined to be safe.

- 4118 TOWARDS A MORE RATIONAL USE OF ANTIBIOTICS IN ACUTE RESPIRATORY INFECTIONS IN CHILDREN. *Essential Drugs Monitor*, no.9, 1990, p:5.

This brief article describes training activities in Fiji and Vanuatu ARI programs that reduced the levels of unnecessary prescriptions for antibiotics.

- 4722 UPJOHN WITHDRAWS KAOMYCIN. *HAI News*, no.58, April 1991, p.4.

Following a letter from the Medical Lobby for Appropriate Marketing (MALAM), the producers of the anti-diarrheal Kaomycin (Upjohn) has decided to phase out marketing of the drug over the next eighteen months. This brief news note reports on Upjohn's reasons for this decision.

- 3876 Van der Geest, S.; Hardon, A.; Whyte, S.R. PLANNING FOR ESSENTIAL DRUGS: ARE WE MISSING THE CULTURAL DIMENSION? *Health Policy and Planning*, vol.5 no.2, June 1990, pp.182-185.

The authors suggest that the time has come to reorient essential drugs policies towards the improvement of drug use, rather than the improvement of drug supply. Based on studies in several developing countries, they show how social and cultural forces shape the distribution and use of drugs.

- 3944 Vogel, R.J.; Stephens, B. AVAILABILITY OF PHARMACEUTICALS IN SUB-SAHARAN AFRICA: ROLES OF THE PUBLIC, PRIVATE, AND CHURCH MISSION SECTORS. *Social Science and Medicine*, vol.29 no.4, 1989, pp.479-486.

This study looks at the historic roles of the public, church mission and private sectors in making drugs available and at their respective strengths and weaknesses. It discusses donor-supported strategies to improve pharmaceutical distribution, including the Bamako Initiative. The paper argues that the private sector is the most efficient distributor of pharmaceuticals.

- 4753 Waller, A.; Adunski, A.; Hershkowitz, M. TERMINAL DEHYDRATION AND INTRAVENOUS FLUIDS. *The Lancet*, vol.337 no.8743, March 23, 1991, p.745, letter.

This letter to the editor discusses the use of intravenous fluids for dehydration in terminally ill patients. The authors state that IV use should be based on the preference

of the patients and their families.

- 4286 Weil, J.; Bell, G.D.; Powell, K. et al. HELICOBACTER PYLORI AND METRONIDAZOLE RESISTANCE. The Lancet, vol.336 no.8728, December 8, 1990, p.1445, letter.

In this letter to the editor, the authors caution against unselective treatment for H. pylori with colloidal bismuth subcitrate or bismuth subsalicylate combined with tetracycline and metronidazole, as it can increase the incidence of metronidazole resistance.

- 3797 Williams, H.M.S.; Farber, B.F. SINGLE-DOSE CIPROFLOXACIN FOR SHIGELLOSIS. The Lancet, vol.335 no.8701, June 2, 1990, pp.1343-1344, letter.

The authors of this letter to the editor report on an outbreak of Shigella sonnei infection in the United Kingdom which was treated with ciprofloxacin.

- 3973 Willocks, L.J.; Thompson, C.; Emmanuel, F.X.X. et al. HOSPITAL OUTBREAK OF SALMONELLA ENTERITIDIS INFECTION TREATED WITH CIPROFLOXACIN. The Lancet, vol.35 no.8702, June 9, 1990, pp.1404-1405, letter.

This letter to the editor reports on an outbreak of salmonellosis in a British psychiatric hospital in October 1988, which was treated with ciprofloxacin.

- 3866 Woodford, N.; Payne, D.J.; Johnson, A.P. et al. TRANSFERABLE CEPHALOSPORIN RESISTANCE NOT INHIBITED BY CLAVULANATE IN ESCHERICHIA COLI. The Lancet, vol.336 no.8709, July 28, 1990, p.253, letter.

This letter to the editor reports on the isolation of a strain of E. coli resistant to penicillins and cephalosporins because of a plasmid-encoded beta-lactamase that was not inhibited by clavulanic acid.

- 3821 Yudkin, J.S. DISPENSING OF INAPPROPRIATE MEDICINES FOR DIARRHOEA. The Lancet, vol.335, March 31, 1990, p.803, letter.

The author of this letter to the editor describes a mini-study which he conducted in an African country to determine pharmacists' treatment advice for diarrhea. Of the 14

pharmacies visited, all recommended using drugs as the initial treatment. Only one pharmacist recommended ORT, but only as a second-line therapy.

DIETARY MANAGEMENT OF DIARRHEA

- 4225 Abiog-Castro, R.S. NUTRITIONAL THERAPY IN ACUTE DIARRHEA. ORT Newsletter, vol.3 no.1, January-March, 1990, p.3+.

In this article the author presents general guidelines for feeding children who have acute diarrhea. Guidelines are given for exclusively breastfed, partially breastfed, and non-breastfed children.

- 4816 Alarcon, P.; Montoya, R.; Perez, F. et al. CLINICAL TRIAL OF HOME AVAILABLE, MIXED DIETS VERSUS A LACTOSE-FREE, SOY-PROTEIN FORMULA FOR THE DIETARY MANAGEMENT OF ACUTE CHILDHOOD DIARRHEA. Journal of Pediatric Gastroenterology and Nutrition, vol.12, 1991, pp.224-232.

A randomized clinical trial was completed to study the severity, duration, and nutritional outcome of acute diarrhea in 85 Peruvian children aged 5-24 months, who received a soy-protein isolate, lactose-free formula or one of two mixtures of home-available foods. Children in all groups gained weight during hospitalization, and there were no significant differences by diet group in the change of anthropometric status during treatment.

- 4070 Almroth, S.; Bidinger, P.D. NO NEED FOR WATER SUPPLEMENTATION FOR EXCLUSIVELY BREAST-FED INFANTS UNDER HOT AND ARID CONDITIONS. Transactions of the Royal Society of Tropical Medicine and Hygiene, vol.84, 1990, pp.602-604.

This study was conducted in four villages in India during the hottest and driest season of the year to determine whether exclusively breast-fed infants need additional water under extremely hot and dry climate conditions...Even under hotter and drier climatic conditions than have previously been studied, healthy exclusively breast-fed infants do not require additional water. [published abstract]

- 4630 Bentley, M.E.; Stallings, R.V.; Fukumoto, M. et al. MATERNAL FEEDING BEHAVIOR AND CHILD ACCEPTANCE OF FOOD DURING DIARRHEA, CONVALESCENCE, AND HEALTH IN THE CENTRAL SIERRA OF PERU. American Journal of Public Health, vol.81 no.1, January 1991, pp.43-47.

Feeding patterns by mothers and child acceptance of food were measured in a Peruvian village to determine changes on days when children had diarrhea as compared to days of convalescence and health...[Results showed that] maternal

encouragement to eat decreased significantly during convalescence compared to diarrheal days...and health compared to diarrheal days...In contrast, child acceptance of food increased during health compared to diarrheal days...Results illustrate the importance of carefully examining the behavioral aspects of nutritional intake. Decreases in intake during diarrheal days are due to anorexia and not withdrawal of food by mothers. In response to reductions in child appetite during illness, mothers are more likely to encourage children to eat, while they tend to become more passive feeders after the diarrheal days have stopped. [published abstract]

- 4797 Brown, K.H.; Perez, F.; Gastanaduy, A.S. CLINICAL TRIAL OF MODIFIED WHOLE MILK, LACTOSE-HYDROLYZED WHOLE MILK, OR CEREAL-MILK MIXTURES FOR THE DIETARY MANAGEMENT OF ACUTE CHILDHOOD DIARRHEA. *Journal of Pediatric Gastroenterology and Nutrition*, vol.12, 1991, pp.340-350.

A randomized, double-masked clinical trial was completed to compare the effects of four dietary regimens for the nutritional management of 116 Peruvian children between 3 and 24 months of age with acute diarrheal days. Diets consisted of a modified whole milk formula (group M), a lactose-hydrolyzed milk formula (HM), wheat noodles and whole milk (N-M), or wheat noodles and lactose-hydrolyzed whole milk (N-HM)...In this group of patients, noodle-milk mixtures produced fewer treatment failures, lower fecal outputs, and shorter durations of diarrheal days than did milk alone, regardless of the lactose contents of the respective milks or mixed diets...Thus, the noodle-milk diets employed during this study were safer than the milk diets for the dietary management of children with acute diarrheal days. [published abstract]

- 3935 Brown, R.C. A SIMPLE SYSTEM OF NUTRITION SURVEILLANCE FOR AFRICAN COMMUNITIES. *Journal of Tropical Pediatrics*, vol.36 no.4, August 1990, pp.162-164.

Working in Zaire, the author...initiated a simple method of nutrition surveillance for African communities...This method...is designed to predict and show short-term trends of protein-energy malnutrition. It can be used to forecast and document famine, as well as modest variations in the nutritional status of the community. [published abstract]

- 4193 Cabellero, B.; Solomons, N.W. LACTOSE-REDUCED FORMULAS FOR THE TREATMENT OF PERSISTENT DIARRHEA. *Pediatrics*, vol.86 no.4, October 1990, pp.645-646, letter.

In this letter to the editor the authors comment on the efficacy of treating persistent diarrhea with lactose-reduced formulas.

- 4735 Ciampolini, M.; Becherucci, P.; Giommi, A. et al. DECREASE IN SERUM IGE ASSOCIATED LIMITED RESTRICTION IN ENERGY INTAKE TO TREAT TODDLER'S DIARRHEA. *Physiology and Behavior*, vol.49, 1991, pp.155-160.

In this study the authors modified the dietary intake of 16 children in a hospital in Italy to determine if limited restriction of energy intake would decrease serum IgE levels and chronic non-specific diarrhea (CNSD). The data indicated that a reduction in eating incentive could safely achieve lower energy intakes and thus could be useful in preventing overeating and IgE increase as well as in controlling symptoms of CNSD.

- 4169 Dickin, K.L.; Brown, K.H.; Fagbule, D. et al. EFFECT OF DIARRHOEA ON DIETARY INTAKE BY INFANTS AND YOUNG CHILDREN IN RURAL VILLAGES OF KWARA STATE, NIGERIA. *European Journal of Clinical Nutrition*, vol.44, 1990, pp.307-317.

Community-based, quantitative studies of dietary intake by 5- to 28-months-old Nigerian children were conducted during episodes of diarrhoea and subsequent convalescent and healthy periods. Energy intakes during diarrhoea...were slightly lower than during health...The magnitude of illness-associated differences in these children's daily intake was small relative to the deficit in their intakes, even on healthy days, when compared to the amounts recommended for this age group. [published abstract].

- 4534 Dijkhuizen, P. WEANING FOOD: A FORMULA FOR SUCCESS. *Development Journal*, 1990, pp.33-35.

In this article the author describes how the Royal Tropical Institute, a Dutch NGO, helps developing countries to produce culturally acceptable weaning foods which can be made locally. Several aspects of production, including storage, marketing, and packaging, are discussed specifically in terms of developing sustainable projects. Successful projects in Burundi, Sierra Leone, and Ghana are described.

- 4219 Ekanem, E.E.; Akitoye, C.O. CHILD FEEDING BY NIGERIAN MOTHERS DURING ACUTE DIARRHOEAL ILLNESS. *Journal of the Royal Society of Health*, 1990, pp.164-165.

A study was conducted among mothers in a suburban community in Lagos [Nigeria] to ascertain child feeding patterns during episodes of diarrhoea...The vast majority restricted the consumption of yams and sugar (>90%) and substantial numbers (40/ 50%) restricted bread and rice. On the other hand other carbohydrate foods were increased--plantain (73%), ogi maize pap (53%), amala (56%). Of protein foods the vast majority restricted beans (94%) and milk formula (69%) with 35% restricting meat but not fish. Few increased the intake of such foods. Beverages, fruit and vegetables were restricted by the majority; water intake was maintained. These dietary restrictions are apparently based on tradition but can have serious consequences. [published abstract]

- 4052 Fox, R.; Leen, C.L.S.; Dunbar, E.M. et al. ACUTE GASTROENTERITIS IN INFANTS UNDER 6 MONTHS OLD. *Archives of Disease in Childhood*, vol.65, 1990, pp.936-938.

Gradual versus abrupt refeeding following rehydration was studied in 62 babies with gastroenteritis who were admitted to a British hospital. The authors recommend rapid refeeding for babies with acute gastroenteritis who are well nourished and well hydrated. They also recommend a lactose-free, soy-based formula for those babies with recurring diarrhea due to lactose intolerance.

- 3857 Gallat, S. GERMINATED FLOURS. *Dialogue on Diarrhoea*, issue 40, March 1990, p.4.

Using germinated cereal flour in porridge is one possibility for adding energy to weaning food. The author describes attempts to develop such weaning foods in Tanzania and other countries. Such food may also be appropriate for dietary management of diarrhea.

- 4206 Heymann, S.J. MODELING THE IMPACT OF BREAST-FEEDING BY HIV-INFECTED WOMEN ON CHILD SURVIVAL. *American Journal of Public Health*, vol.80 no.11, November 1990, pp.1305-1309.

This study uses analytic techniques to evaluate the breastfeeding dilemma and estimate how high HIV transmission via breast milk would have to be before HIV-positive mothers should be counselled not to breastfeed. It also discusses

using wet nurses as a third alternative to breast and bottle feeding by the HIV-infected mother.

- 4110 HOW TO FEED A BABY WHO CANNOT BREASTFEED. Dialogue on Diarrhoea, issue 41, June 1990, pp.6-7.

This article provides guidelines on how to feed infants who cannot breastfeed. By using expressed breast milk, these babies can be fed safely and effectively from a cup. The article also strongly discourages bottle feeding, as it is often unsanitary.

- 3856 IMPROVED WEANING FOODS: PERU. Dialogue on Diarrhoea, issue 40, March 1990, p.2.

This brief article describes an improved weaning food developed by the Dietary Management of Diarrhea project (DMD) in Peru. The food consists of carrot, oil, sugar, wheat flour and bean flour.

- 3911 Isolauri, E.; Juntunen, M.; Wiren, S. et al. INTESTINAL PERMEABILITY CHANGES IN ACUTE GASTROENTERITIS: EFFECTS OF CLINICAL FACTORS AND NUTRITIONAL MANAGEMENT. Journal of Pediatric Gastroenterology and Nutrition, vol.8 no.4, 1989, pp.466-473.

The effects of early home management of acute diarrhea followed by rapid in-hospital realimentation on intestinal permeability were studied in 41 children aged 3-25 months with acute gastroenteritis...[in Finland]...The study indicated that fasting maintains the increased intestinal permeability associated with acute gastroenteritis whereas early feeding at home may promote reduction of permeability and hasten recovery. [published abstract]

- 4207 Jelliffe, E.F.P.; Jelliffe, D.B. IMPROVING NUTRITIONAL DIETARY DENSITY AND NUTRIENT BIOAVAILABILITY FOR YOUNG CHILDREN: LESS APPRECIATED CONSIDERATIONS. Journal of Tropical Pediatrics, vol.36 no.5, October 1990, pp.210-212.

This editorial addresses the methods that can be used to increase the caloric content of weaning foods, such as malting and adding oil, fat or sugar.

- 4475 Jirapinyo, P.; Young, C.; Srimaruta, N. et al. HIGH-FAT SEMIELEMENTAL DIET IN THE TREATMENT OF PROTRACTED DIARRHEA IN INFANCY. *Pediatrics*, vol.86 no.6, December 1990, pp.902-908.

Two studies were conducted to examine the capacity for greater fat absorption relative to carbohydrate absorption during infantile persistent diarrhea in children from a developed or developing country. Twenty children in Buffalo, New York and thirty in Bangkok, Thailand with persistent diarrhea received either a standard semielemental diet or a high-fat semielemental diet. Both diets were well tolerated in both studies and there was no difference observed in the coefficient of fat absorption between the groups receiving the two formulas. The authors conclude that a high-fat diet may be a good means of assuring proper caloric intake in children with carbohydrate intolerance.

- 3954 Ketsela, T.; Asfaw, M.; Kebede, D. PATTERNS OF BREAST FEEDING IN WESTERN ETHIOPIA AND THEIR RELATIONSHIP TO ACUTE DIARRHOEA IN INFANTS. *Journal of Tropical Pediatrics*, vol.36 no.4, August 1990, pp.180-183.

To determine the extent of protection from breast feeding against acute diarrhoea, a cross-sectional study was conducted in rural areas in a Western region of Ethiopia, Gamo-Gofa...When infants with partial breast feeding were contrasted with those on exclusive breast feeding, a relative risk of developing diarrhoea of 5.2...was obtained. [published abstract]

- 4170 Lifschitz, C.H.; Carrazza, F. EFFECT OF FORMULA CARBOHYDRATE CONCENTRATION ON TOLERANCE AND MACRONUTRIENT ABSORPTION IN INFANTS WITH SEVERE, CHRONIC DIARRHEA. *Journal of Pediatrics*, vol.117, 1990, pp.378-383.

The authors conducted a study of 12 Brazilian infants with severe diarrhea to assess the effect of the carbohydrate (CHO) content of a special infant formula on tolerance and macronutrient absorption. As indicated by lower daily stool output and lower total fecal energy, the low-CHO formula was better tolerated and resulted in better macronutrient absorption than the high-CHO formula.

- 4132 Lifschitz, C.H.; Shulman, R.J. NUTRITIONAL THERAPY FOR INFANTS WITH DIARRHEA. *Nutrition Reviews*, vol.48 no.9, September 1990, pp.329-338.

In this article [the authors] examine the current knowledge about, and trends in, feeding infants with diarrhea...[They] discuss treatments for the well-nourished infant with acute diarrhea, the infant with prolonged diarrhea, and the malnourished infant. Information regarding the use of local staples will also be provided. [published abstract]

- 3814 Lifshitz, F.; Fagundes-Neto, U.; Ferreira, V.C. et al. THE RESPONSE TO DIETARY TREATMENT OF PATIENTS WITH CHRONIC POST-INFECTIOUS DIARRHEA AND LACTOSE INTOLERANCE. *Journal of the American College of Nutrition*, vol.9 no.3, 1990, pp.231-240.

The authors studied 29 Brazilian infants with persistent post-infectious diarrhea and lactose intolerance in order to evaluate the efficacy of three formulas commonly used to treat this condition. Of the three formulas, Pregestimil seemed to be the most effective one for treating infants with persistent post-infectious diarrhea and lactose intolerance.

- 4291 Lucas, A.; Cole, T.J. BREAST MILK AND NEONATAL NECROTISING ENTEROCOLITIS. *The Lancet*, vol.336 no.8730, December 22/29, 1990, pp.1519-1523.

This prospective, randomized, multicenter study of dietary management of 926 preterm infants, the relation between early diet of feeding practice and the frequency of necrotising enterocolitis was explored. It concludes that with a decrease in the use of breast milk in British neonatal units, exclusive formula feeding could account for an estimated 500 extra cases of necrotising enterocolitis each year. About 100 of these infants would die.

- 4619 Lunn, P.G.; Northrop-Clewes, C.A.; Downes, R.M. RECENT DEVELOPMENTS IN THE NUTRITIONAL MANAGEMENT OF DIARRHOEA: 2. CHRONIC DIARRHOEA AND MALNUTRITION IN THE GAMBIA: STUDIES ON INTESTINAL PERMEABILITY. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, vol.85, 1991, pp.8-11.

This article discusses the chronic diarrhea-malnutrition syndrome and the subsequent intestinal lesions in Gambian children. It also assesses the ability of the dual sugar permeability test to determine these children's intestinal mucosal status. Because the test can be used frequently in a non-invasive way, the authors determined that it would be useful in studying the etiology of chronic diarrhea-malnutrition syndrome.

- 4204 Maffei, H.V.L.; Padula, N.N.A.M.; Annicchino, G.P. et al. NUTRITIONAL MANAGEMENT AND WEIGHT CHANGES DURING HOSPITALIZATION OF BRAZILIAN INFANTS WITH DIARRHOEA: PRIMARY RELIANCE ON ORAL FEEDING OR CONTINUOUS NASOGASTRIC DRIP WITH LOCALLY MADE, MODULATED MINCED CHICKEN FORMULA. *Journal of Tropical Pediatrics*, vol.36 no.5, October 1990, pp.240-246.

The nutritional management of infants admitted with diarrhoea to the University Hospital of Botucatu includes a change from bolus feeding of a modulated minced-chicken formula to a continuous nasogastric drip feeding, whenever the required calorie intake is not achieved or the diarrhoea does not subside. To evaluate this approach, the clinical course and weight changes of 63 children, aged 1-20 months, were reviewed. [published abstract]

- 4328 Mann, M.D.; Hill, I.D.; Bowie, M.D. ABSORPTION AND RETENTION IN ACUTE DIARRHOEA. *European Journal of Clinical Nutrition*, vol.44, 1990, pp.629-635.

This paper reports the protein absorption and nitrogen and fat balance of 21 infants in the first week after the onset of diarrhea. The results are compared with those of 22 infants who had severe diarrhea for 8 days. The infants were fed a cow's milk, soy-based, or low lactose formula. The smallest loss of nitrogen and fat was found in infants who had had diarrhea for four days and who were fed a soy-based formula.

- 4159 Mathur, G.P. DOCTOR'S DECLARATION FOR BREAST FEEDING. *Journal of Tropical Pediatrics*, vol.36 no.4, August 1990, p.199.

A group of concerned pediatricians and physicians recently met in Manila, Philippines, to reaffirm the 20-point declaration on breastfeeding originally drawn up in Thailand in 1986. This brief article enumerates the 20 points.

- 4237 McClean, P.; Lynch, A.B.; Dodge, J.A. COMPARISON OF THREE REGIMENS IN THE MANAGEMENT OF ACUTE GASTROENTERITIS IN INFANTS. *Alimentary Pharmacology and Therapeutics*, vol.4, 1990, pp.457-464.

In this study conducted in Ireland, three commonly used dietary regimens--low-lactose, low-fat formula, conventional formula, and hydrolyzed soya and collagen formula--were compared to determine their effect on the duration of loose stools and weight change in children with gastroenteritis.

Earliest recovery from gastroenteritis was observed when using the low-lactose, low-fat formula in the initial post-rehydration phase.

- 4040 Meftuh, A.B.; Tapsoba, L.; Lamounier, J.A. BREAST FEEDING DURATION OF ETHIOPIAN WOMEN IN SOUTHERN CALIFORNIA. *Journal of Tropical Pediatrics*, vol.36 no.4, August 1990, pp.203-204, letter.

This letter to the editor reports on a retrospective study on the duration of breastfeeding of Ethiopian refugee mothers in California. The study found that urban mothers breastfed less than 3 months and rural mothers less than 9 months.

- 4851 Melville, B.F. BREAST FEEDING DECLINE IN CHANGING SOCIO-ECONOMIC CONDITIONS: THE CASE OF JAMAICA, 1983-1989. *Journal of Tropical Pediatrics*, vol.37 no.2, April 1991, pp.93-94, letter.

Although the cost of artificial feeding increased during the 1980s in Jamaica, bottle-feeding continued to increase. The percentage of mothers breastfeeding at 6 weeks declined from 63% in 1983 to 46% in 1989. It appears that breastfeeding duration is not influenced by economic conditions in third world countries.

- 3864 Mensah, P.P.A.; Tomkins, A.M.; Drasar, B.S. et al. FERMENTATION OF CEREALS FOR REDUCTION OF BACTERIAL CONTAMINATION OF WEANING FOODS IN GHANA. *The Lancet*, vol.336 no.8708, July 21, 1990, pp.140-143.

Unfermented and fermented maize dough weaning foods prepared by mothers in a Ghanaian village were examined for gram-negative bacilli (GNB) immediately after preparation and during storage to assess the antimicrobial effect of fermentation...Fermentation of maize dough is an effective method to reduce contamination of maize dough weaning foods. [published abstract]

- 3854 Mensah, P.P.A.; Tomkins, A.; Drasar, B. REDUCING CONTAMINATION. *Dialogue on Diarrhoea*, issue 40, March 1990, p.3.

The authors conducted a study in Ghana to determine the levels of coliform bacteria in fermented and unfermented maize dough porridges. After 12 hours, the fermented porridge was found to be less contaminated than the

unfermented porridge; therefore, porridge may make a good weaning food.

- 4194 Penny, M.E.; Paredes, P.; Brown, K.H. LACTOSE-REDUCED FORMULAS FOR THE TREATMENT OF PERSISTENT DIARRHEA. *Pediatrics*, vol.86 no.4, October 1990, p.646, letter.

The authors of this letter to the editor respond to a letter by Cabellero and Solomons (*Pediatrics*, vol.86 no.4, pp.645-646) which discusses the use of lactose-reduced formulas in treating children with persistent diarrhea. They state that these formulas could speed up recovery in sick children, thus reducing expensive hospital stays.

- 4638 Rivera, J.; Martorell, R.; Lutter, C.K. INTERACCION DE LA INGESTA DIETICA Y LA ENFERMEDAD DIARRHEICA EN EL CRECIMIENTO DE LOS NINOS. *Archivos Latinoamericanos de Nutricion*, vol.39 no.3, September 1989, pp.292-307.

This study analyzes the relationship between the effects of diarrheal disease and food supplementation on the growth of children in a rural area of Guatemala. Diarrheal disease was found to have a negative effect on the growth of children aged 3 to 36 months with low dietary intake. The effect was not as negative when food supplements were given.

- 3819 Rohde, J.E. DIARRHOEA IS A NUTRITIONAL DISEASE--FURTHER THOUGHTS ON DIETARY MANAGEMENT. Paper prepared for the Asian Conference on Diarrhoeal Disease, Kathmandu, Nepal, September 23, 1989, 19p.

In this paper the author discusses the relationship between persistent diarrhea and malnutrition. He stresses the importance of continued feeding during diarrhea to prevent malnutrition and stunting. Other issues discussed include continuation of breastfeeding, use of cereal based ORS, and catch-up growth during convalescence.

- 4712 Sachdev, H.P.S.; Krishna, J.; Puri, R.K. et al. WATER SUPPLEMENTATION IN EXCLUSIVELY BREASTFED INFANTS DURING SUMMER IN THE TROPICS. *The Lancet*, vol.37 no.8747, April 20, 1991, pp.929-933.

In India, 45 healthy, exclusively breastfed infants were studied to determine the need for water supplementation to maintain water homeostasis in exclusively breastfed children during the hot season in a tropical country. The infants

were divided into two groups, one receiving only breast milk and the other breast milk plus supplementary fluids according to the mothers' usual practice. There were no significant differences between the groups in urine output, urine or serum osmolality, weight change, or rectal temperature. The authors concluded that exclusively breastfed infants do not need supplemental water and that, in fact, reduced breast milk intake is a potential disadvantage of this practice.

- 1174 Saha, K.; Dua, N.; Chopra, K. USE OF HUMAN COLOSTRUM IN THE MANAGEMENT OF CHRONIC INFANTILE DIARRHOEA DUE TO ENTEROPATHOGENIC E. COLI INFECTION WITH ASSOCIATED INTESTINAL PARASITE INFESTATIONS AND UNDERNUTRITION. *Journal of Tropical Pediatrics*, vol.36 no.5, October 1990, pp.247-250.

This study reports the management of 8 children from 9 months to 3 years of age with persistent diarrhea by colostrum feeding. Results showed effective anti-diarrheal action of colostrum in some patients with persistent diarrhea of infective origin.

- 1809 Schroeder, D.G.; Piwoz, E.G.; Black, R.E. et al. IMPROVING INFANT FEEDING PRACTICES TO PREVENT DIARRHEA AND REDUCE ITS SEVERITY: INTERVENTION RESEARCH PRIORITIES AND METHODOLOGIC CONSIDERATIONS. Baltimore, Maryland, Johns Hopkins University, Institute for International Programs, September 1989, 55p.+app.

Part I of this report explores the relationship between infant feeding practices and diarrhea...This first part will include a review of feeding patterns and practices that have been implicated in the risk of diarrhea and will give examples of prior experiences with interventions to improve infant feeding practices...Part II of the report will propose methodological approaches for carrying out intervention research. Included in this part will be discussion of intervention research designs and the methods of developing interventions to motivate behavioral change. [published abstract]

- 1646 Shahraban, A.; Abdulla, K.; Bjorksten, B. et al. PATTERNS OF BREAST FEEDING AND WEANING IN THE UNITED ARAB EMIRATE. *Journal of Tropical Pediatrics*, vol.37 no.1, February 1991, pp.13-16.

Two hundred urban mothers and 86 rural mothers in Dubai were interviewed to obtain baseline data about the duration of

breastfeeding and weaning patterns. The median duration of breastfeeding was 4.75 and 9 months in urban and rural groups, respectively. Results of the study call for a national program to promote breastfeeding.

- 4250 Singh, S.; Bhasin, S.K.; Ingle, G.K. et al. PATTERN OF BREAST FEEDING PRACTICES IN A RURAL COMMUNITY OF HARYANA. *Journal of Tropical Pediatrics*, vol.36, December 1990, pp.334-335, letter.

This letter describes the results of a survey of 700 mothers in Northern India regarding breastfeeding practices. All children were breastfed at birth; supplements were introduced at age 9-11 months by 87% of mothers. Breastfeeding was found to protect against diarrhea and against malnutrition, at least until 9-11 months of age.

- 4830 Taofik, S. MORE IDEAS FOR NUTRITIOUS WEANING FOODS. *Dialogue on Diarrhoea*, no.44, March 1991, p.8, letter.

This letter describes a weaning food developed and taught to Nigerian mothers by community health workers. The food consists of soy beans, porridge, palm oil and sugar. It is also given during diarrhea in addition to sugar-salt solution.

- 3871 Thomas, A.G.; Stanton, R.H.J.; Miller, V. NUTRITIONAL MANAGEMENT OF CHRONIC DIARRHOEA AND/OR MALABSORPTION. *Journal of Pediatric Gastroenterology and Nutrition*, vol.11 no.1, 1990, pp.142-143, letter.

In this letter to the editor, the authors describe a small study that showed that some patients with severe persistent diarrhea cannot tolerate any commercially available formula or human milk.

- 4618 Tomkins, A. RECENT DEVELOPMENTS IN THE NUTRITIONAL MANAGEMENT OF DIARRHOEA: 1. NUTRITIONAL STRATEGIES TO PREVENT DIARRHOEA AMONG CHILDREN IN DEVELOPING COUNTRIES. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, vol.85, 1991, pp.4-7.

This paper discusses various ways in which diarrhoea may be prevented from occurring in children living in developing countries...Possible strategies include promotion of breastfeeding, dietary supplementation with vitamin A, zinc and iron, the prevention of protein-energy malnutrition as

far as possible, and improvement in the standard of preparation and hygiene of available weaning foods, involving in particular the wider use of fermented foods.
[published abstract]

- 4616 Torun, B.; Chew, F. RECENT DEVELOPMENTS IN THE NUTRITIONAL MANAGEMENT OF DIARRHOEA: 3. PRACTICAL APPROACHES TOWARDS DIETARY MANAGEMENT OF ACUTE DIARRHOEA IN DEVELOPING COMMUNITIES. Transactions of the Royal Society of Tropical Medicine and Hygiene, vol.85, 1991, pp.12-17.

This article presents some practical recommendations for dietary management of diarrhea which take into account nutritional, physiological, cultural and economic considerations. Among the main points were continuing breastfeeding, using appropriate local staples, and avoiding dilution of cow's milk when it is used in place of breast milk.

- 4039 Uzogara, S.G.; Morton, I.D.; Daniel, J.W. et al. USE OF KANWA-COOKED COWPEA (VIGNA UNGUICULATA) IN INFANT FOOD FORMULATION: EFFECT ON PROTEIN UTILIZATION AND DIGESTIBILITY. Journal of Tropical Pediatrics, vol.36 no.4, August 1990, letter.

This letter to the editor reports on a study that suggests that kanwa-cooked cowpeas can be used in formulating an infant weaning food.

- 4149 Walker-Smith, J.A. MANAGEMENT OF INFANTILE GASTROENTERITIS. Archives of Disease in Childhood, vol.65, 1990, pp.917-918.

In this article the author discusses lactose intolerance during re-feeding of bottle-fed infants who are recovering from a diarrheal episode.

- 4814 Waterston, T.; Walker-Smith, J.; Jenkins, H.R. et al. MANAGEMENT OF GASTROENTERITIS. Archives of Disease in Childhood, vol.66, 1991, p.559, letters.

These letters to the editor discuss an earlier article by J. Walker-Smith on dietary management of infantile gastroenteritis. The lack of clear guidelines concerning cessation of milk feeds and solids during the first 24 hours of infantile diarrhea is discussed.

3853 Wilson, F. ADAPTING FOOD TECHNOLOGIES: BUT WHAT DO MOTHERS THINK? Dialogue on Diarrhoea, issue 40, March 1990, pp.6-7.

Mothers are often given advice about how to feed their children with diarrhea at home. Here the author describes two studies in Kenya and Tanzania where the views of mothers and health workers were sought. In both cases, fermented or germinated cereals were recommended for children but were often not adopted by mothers.

HEALTH ASPECTS (of Control and Prevention)

- 4311 Ahmad, W.; Bodeker, G.C. AYUR-VEDIC MEDICINE. The Lancet, vol.336 no.8725, November 17, 1990, p.1260, letter.

These two letters to the editor protest the interpretation of Ayur-Vedic medicine offered in an October 27, 1990 Lancet article. They point out that Ayur-Vedic medicine has been practiced for thousands of years on the Indian sub-continent and that it emphasizes maintaining a healthy lifestyle.

- 3784 Anand, R.K. RECOMMENDATIONS ON BREASTFEEDING PROMOTION AMONG PEDIATRICIANS. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.51-55.

This paper lists the obstacles that were encountered in breastfeeding promotion among pediatricians in India and gives 17 recommendations for overcoming them. The major obstacles included insufficient knowledge about breastfeeding physiology and management, absence of explicit policies, lack of commitment, and problems in getting proper information. Several educational measures are suggested to remedy the problems.

- 3850 Ayivi, B.; Rahimy, C.D. LE SEVRAGE: SIGNIFICATION ET RISQUES. Developpement et Sante, no.87, 1990, pp.25-26.

This brief article discusses the advantages of breastfeeding and the nutritional and psychological risks of weaning babies too early or abruptly.

- 4252 Babaniyi, O.A. A 10-YEAR REVIEW OF MORBIDITY FROM CHILDHOOD PREVENTABLE DISEASES IN NIGERIA: HOW SUCCESSFUL IS THE EXPANDED PROGRAMME ON IMMUNIZATION (EPI)? AN UPDATE. Journal of Tropical Pediatrics, vol.36, December 1990, pp.306-313.

This paper updates documented program achievements of the Nigerian EPI Program for the period 1974-1988. Data analysis shows a clear reduction in measles and whooping cough since 1986, and an increase in TB incidence since 1984. The minimal impact of the EPI Program is due mainly to an inability to achieve high coverage.

- 4246 Barber, M. BRAZIL: SYSTEM OF HEALTH CARE FOR THE POOR. The Lancet, vol.336 no.8727, December 1, 1990, p.1370.

The author describes an experiment in primary health care in Florestopolis, Brazil, designed to decrease the infant mortality rate. Volunteers from poor communities who were judged to have leadership qualities attended a one-week training course on child health. The IMR decreased by 50% and hospital admissions for diarrheal disease dropped by 70%.

- 3767 Barros, F.C.; Victora, C.G. BREASTFEEDING AND DIARRHEA IN BRAZILIAN CHILDREN. Columbia, Maryland, Institute for Resource Development/Macro Systems, DHS Project, and New York, The Population Council, March 1990, 25p.

This report presents the findings of a Demographic and Health Survey conducted in Brazil from May to August 1986. The survey focused on maternal and child health issues with emphasis on breastfeeding and diarrhea. Results indicated that prevalence and duration of breastfeeding were low in Brazil. Diarrheal episodes did not vary significantly between breastfed and non-breastfed children, which the authors attribute to confounding socio-economic variables. Several factors related to breastfeeding prevalence are discussed, including maternal education, type of delivery, smoking, and introduction of weaning foods.

- 4003 Barton, M.B.; Schoenbaum, S.C. IMPROVING INFLUENZA VACCINATION PERFORMANCE IN AN HMO SETTING: THE USE OF COMPUTER-GENERATED REMINDERS AND PEER COMPARISON FEEDBACK. American Journal of Public Health, vol.80 no.5, May 1990, pp.534-536.

In this article the authors evaluated a program for improving influenza vaccination in a health maintenance organization (HMO). The data indicated that immunization rates increased when HMO members received reminders and physicians received peer comparison feedback. The authors concluded that the reminder and feedback system can contribute to the effectiveness of ongoing influenza immunization programs.

- 3834 Bashir, A.; Mubasher, S.; Obaid, R. A STUDY OF EARLY BREAST FEEDING AND ITS ROLE IN ESTABLISHMENT OF LACTATION. Pakistan Pediatric Journal, vol.13 no.4, nd, pp.237-242.

The impact of starting breastfeeding immediately after delivery on establishment of lactation was studied in 100 cases in a Pakistani hospital. Pregnant women were counselled in proper breastfeeding practices prior to delivery and babies were started on the breast immediately

after birth. Study results indicated that 95% of studied women had established breastfeeding at the time of discharge.

- 4098 Berg, A.; Brems, S. A CASE FOR PROMOTING BREASTFEEDING IN PROJECTS TO LIMIT FERTILITY. Washington, D.C., The World Bank, 1989, 56p.

This document discusses the importance of including breastfeeding promotion in family planning programs. Breastfeeding's effect as a contraceptive method is examined as well as its compatibility with women's other roles. Several successful promotional programs are highlighted, including those in Jordan, Pakistan, Colombia, and Jamaica.

- 4293 Black, M. WORLD SUMMIT FOR CHILDREN. The Lancet, vol.336 no.8730, December 22/29, 1990, p.1586, letter.

The author of UNICEF's "Children and AIDS: An Impending Calamity" disputes Malcolm Potts's statement that UNICEF is reluctant to advocate family planning. The difficulties of implementing family planning programs, particularly in Africa, are described.

- 4254 Boerma, J.T.; Baya, M.S. MATERNAL AND CHILD HEALTH IN AN ETHNOMEDICAL PERSPECTIVE: TRADITIONAL AND MODERN MEDICINE IN COASTAL KENYA. Health Policy and Planning, vol.5 no.4, 1990, pp.347-357.

This paper presents the results of an operational research project on traditional medicine in coastal Kenya. Data were collected on health services utilization and traditional medicine. High levels of utilization of both modern and traditional medical services were observed for child illnesses. Large-scale training of TBAs and healers did not appear to be feasible, but focusing on the leading traditional practitioners may be worthwhile.

- 4707 Bossert, T.; Soebekti, R.; Rai, N.K. 'BOTTOM-UP' PLANNING IN INDONESIA: DECENTRALIZATION IN THE MINISTRY OF HEALTH. Health Policy and Planning, vol.6 no.1, 1991, pp.55-63.

In this article the authors examine the Comprehensive Health Improvement Program - Province Specific (CHIPPS), which achieved partial success in decentralizing the Indonesian ministry of health. The basic approach was to develop health officials' skills in data collection, management and analysis so that these officials could identify local

problems and address them with project activities. By implementing locally based solutions, provincial and local officials could effectively challenge central office decisions and, thus, achieve some decentralization objectives.

- 4287 Bradley, D. EAST AFRICA: THREE VIGNETTES. The Lancet, vol.336 no.8728, December 8, 1990, pp.1435-1436.

This brief article describes three UNICEF projects in the Great Rift Valley, Kenya, a slum area of Nairobi, and Kampala, Uganda that show how the capacity for essential national health research is being developed.

- 4446 Brandstetter, R.H.; Fishman, C. RAPID ETHNOGRAPHIC ASSESSMENT OF INFANT FEEDING--NIGER. Washington, D.C., The Academy for Educational Development, Nutrition Communication Project, January 1989, 32p.+app.

This document reports on the results of rapid ethnographic assessment focusing on infant feeding and nutrition practices in 14 Zarma-speaking villages in Niger. Among the areas for which data were gathered are breastfeeding, weaning, perceptions of health and illness, use of traditional healers, practices during pregnancy, and diet and food preparation. The implications of these findings on conducting nutrition education programs are also discussed.

- 3804 BREASTFEEDING AND FERTILITY. The Lancet, vol.335 no.8701, June 2, 1990, pp.1334-1335.

This news note focuses on reasons why breastfeeding has not been promoted extensively for its ability to limit fertility. Three reasons were cited in a World Bank report: (1) promotion is considered unnecessary; (2) breastfeeding decline is often associated with modernization and its impact may be negligible if the corresponding use of modern contraceptives increases; and (3) breastfeeding is not considered a completely reliable contraceptive.

- 4182 BREASTFEEDING CONFERENCE--FLORENCE, ITALY, JULY 30 -AUGUST 11, 1990. MCI Newsletter, no.15, September 1990, pp.6-7.

This news note briefly outlines the proceedings of the international breastfeeding conference in Florence, Italy, from July 30 to August 11, 1990. Participants reinforced the idea that breastfeeding is vital to child survival and

that it should be intensely promoted.

- 4104 BREASTFEEDING FOR CHILD SURVIVAL STRATEGY. Washington, D.C., Agency for International Development, May 1990, 67p.

This document describes AID's strategy to promote breastfeeding in conjunction with other child survival activities. The specific goals of the strategy are to increase the percentage of infants who are : (1) breastfed within one hour of delivery; (2) exclusively breastfed from birth through four to six months of age; (3) fed appropriate complementary foods in addition to breast milk by the end of six months of age; and (4) breastfed for one year or longer. A list of AID projects that will incorporate breastfeeding promotion into their activities is also provided.

- 4147 BREASTFEEDING IN KENYAN MATERNITY FACILITIES--A STUDY OF CHANGES IN KNOWLEDGE, ATTITUDES AND PRACTICES 1982-1989. Kenya, Ministry of Health and Kenya, UNICEF, March 1990, 95p.

A 1982 KAP study of infant feeding practices in Kenyan maternity wards found low levels of knowledge among health workers about proper breastfeeding. As a result, the Ministry of Health and several non-governmental organizations launched an educational campaign to improve feeding practices and promote breastfeeding. The follow-up study in 1989 found that in almost all areas of breastfeeding management, knowledge among health workers had improved since 1982. This report reviews and compares the data from both studies and presents recommendations for future improvements.

- 3974 BREASTFEEDING RATES INCREASE. IBFAN Africa News, no.29, June 1990, pp.1-2.

This article explores the reasons for the increase in breastfeeding rates in Kenya. The increase is credited to government health policies, training for health workers, increased funding, research, and publications.

- 3896 BREASTFEEDING: A REPORT ON A.I.D. PROGRAMS. Washington, D.C., The Agency for International Development, May 1990, 32p.

This report...highlights some of the major breastfeeding activities A.I.D. has supported over the past decade and discusses the opportunities A.I.D. sees for enhancing breastfeeding promotion and support in developing countries. [published abstract]

- 4296 Burns, J.J.; Franco, L.M.; Neuman, J.S. ORAL REHYDRATION THERAPY IN DIARRHEAL DISEASE CONTROL: A REVIEW OF EXPERIENCE IN EIGHT COUNTRIES. Bethesda, MD, Center for Human Services, PRICOR Project, September 1990, 41p.+app.

PRICOR has carried out 9 assessments of health worker performance in regard to ORT in 8 countries: Colombia, Niger, Pakistan, Peru, Philippines, Senegal, Thailand and Zaire. This report identifies areas of strength and weakness in the delivery of ORT services, and suggests ways in which the quality of some of the components might be improved.

- 4847 Cabral, A.J.R. MAINTAINING THE HEALTH-FOR-ALL MOMENTUM. World Health Forum, vol.11 no.4, 1990, pp.435-439.

The efficiency and effectiveness of the health-for-all strategy have been judged largely by the results achieved in developing countries. Assessments of progress have failed to take into account the slowness of advances previously made in developed countries. In most African countries the process has been hindered by worsening economic, social and legal conditions. This article argues against undue bias towards the profit motive, which could lead to many people having access to second-class services.

- 3779 Canahuati, J. ONE COUNTRY'S STORY: THE PROALMA PROGRAM IN HONDURAS. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.17-24.

This article describes PROALMA, a pilot project carried out in Honduras to develop hospital norms and procedures supportive of breastfeeding and to establish a national breastfeeding program and policy. Preliminary data indicated that the project had positive impacts on changing feeding practices in hospitals. By 1985 national norms had been adopted and PROALMA was extended in order to implement the expansion of the hospital model.

- 3949 Carnell, M.; Guyon, A.B. NUTRITIONAL STATUS, MIGRATION, MORTALITY, AND MEASLES VACCINE COVERAGE DURING THE 1983-1985 DROUGHT PERIOD: TIMBUKTU, MALI. Journal of Tropical Medicine, vol.36 no.3, June 1990, pp.109-113.

This study describes the demographic and nutritional status in the Timbuktu region during the drought of 1983-1985. Malnutrition rates are compared to two other drought-affected areas in the Sahel. Among children less than five,

28% had weight-for-height less than 2SD of the NCHS median. Measles vaccination coverage was 47% based on vaccination card and 60% based on history and card among children 12-60 months of age.

- 4183 THE CASE FOR ROUTINE VITAMIN A PROPHYLAXIS IN TREATMENT OF CHILDHOOD INFECTIONS IN DEVELOPING COUNTRIES. MCI Newsletter, no.15, September 1990, p.4.

This article briefly outlines two studies in Indonesia and South Africa which observed the role of vitamin A supplements in treating childhood infections. Both studies showed that morbidity and mortality rates among children receiving vitamin A supplements were far lower than in control groups who were given placebos.

- 4242 Chalmers, R.A.; Belok, S. MAHARISHI AYUR-VEDA. The Lancet, vol.336 no.8726, November 24, 1990, pp.1322-1323, letter.

These letters claim that a previous Lancet article on Ayur-Veda medicine attempted to discredit the system through inaccuracies and omissions. They discuss the proven benefits of transcendental meditation.

- 3839 Chapnick, B. PROSTHETIC PROJECT IN LAOS. Arlington, VA, Management Sciences for Health, PRITECH, HSS 067-LA, November 3-23, 1989, 3p.

The consultant evaluated a proposed prosthetic project in Laos to be managed by World Concern. He concludes: "The proposed prosthetics project in Laos is feasible, technically warranted, and politically welcome. Its principle problem will be the coordination and management of its several components in the absence of an AID mission." The major components of the project are outlined.

- 216 CHILD SURVIVAL REPORT PRESENTED TO CONGRESS. Frontlines, vol.30 no.5, July 1990, p.17.

This news note provides information on AID's fifth annual report to Congress. The report focuses on programs such as ORT, nutrition, breastfeeding, and immunization. Notable progress included the increased global use rates for ORT and improved measles vaccination coverage.

- 3928 Chorlton, R.; Moneti, F. IMPROVING CHILD SURVIVAL AND NUTRITION--THE JOINT WHO/UNICEF NUTRITION SUPPORT PROGRAMME IN IRINGA, TANZANIA. Dar es Salaam, UNICEF, 1989, 20p.

An evaluation of the Joint WHO/UNICEF Nutrition Support Programme (JNSP) being implemented in the Iringa Region of Tanzania was carried out between June and October 1988. This report describes the program's activities and outlines the key elements responsible for its success.

- 4235 Christensen, P.B.; Karlqvist, S. COMMUNITY HEALTH WORKERS IN A PERUVIAN SLUM AREA: AN EVALUATION OF THEIR IMPACT ON HEALTH BEHAVIOR. Bulletin of the Pan American Health Organization, vol.24 no.2, 1990, pp.183-196.

In 1986 the authors conducted a survey examining the performance of health promoters in Pucallpa, Peru, three years after an initial Danish project for training and supervising those promoters ended. The survey found that some two-fifths of the promoters were still active, that increased stress had been placed on curative tasks, and that the promoters appeared to have had their greatest impact in the areas of vaccination coverage and increased use of the available public health care service. No significant changes were found in the affected population's treatment of diarrhea or improvement of drinking water quality.
[published abstract]

- 4685 A COLLECTION OF ARTICLES ON BREASTFEEDING. Pakistan, The National Steering Committee on Breastfeeding, May 1990, 98p.

This document consists of several articles and research notes about breastfeeding in Pakistan, breastfeeding techniques, and other aspects such as prelacteal feeding and counselling for breastfeeding mothers. The benefits of breastfeeding are reviewed and practical guidelines provided for appropriate lactational management.

- 3893 COMMUNITY BASED DISTRIBUTION PROGRAMS. Alternatives, March 1990, p.10.

This article briefly outlines some lessons for family planning managers based on the experiences of various projects in Peru, Ecuador, and Bolivia. The CEMOPLAF project in Ecuador found that adding ORT to family planning negatively affected volunteer contraceptive distribution. Conversely, adding family planning to ORT projects reduced the distribution of ORS packages.

- 4527 Cruz, J.R.; Gil, L.; Cano, F. et al. PROTECTION BY BREAST-FEEDING AGAINST GASTROINTESTINAL INFECTION AND DISEASE IN INFANCY. In: BREASTFEEDING, NUTRITION, INFECTION AND INFANT GROWTH IN DEVELOPED AND EMERGING COUNTRIES, S.A. Atkinson, L.A. Hanson, R.K. Chandra, eds., ARTS Biomedical Publishers and Distributors, St. John's, Newfoundland, 1990, pp.185-194.

The authors conducted a prospective study in Colonia El Limon, a marginal urban area of Guatemala City, in order to explore the relationship between breastfeeding and diarrhea morbidity rates in underprivileged populations. They also sought to examine the possible role of anti-infective substances in breast milk. Results indicated that exclusive breastfeeding limits infant infections by enteropathogens, limits their expression in the gastrointestinal tract, reduces the risk of infantile diarrhea and, thus, promotes appropriate physical growth.

- 3977 Danko, R.A.; Selwyn, B.J.; Zamora-Romero, R. et al. A SIMPLIFIED METHODOLOGY FOR THE COMMUNITY-BASED ASSESSMENT OF BREAST-FEEDING AND AMENORRHEA IN MEXICO. Bulletin of the World Health Organization, vol.68 no.2, 1990, pp.223-230.

The present study...used a simplified method designed to assess population-level data on the duration of breast-feeding and amenorrhea, and on the patterns of postpartum contraceptive use among women in the State of Mexico. The study was conducted to gather information that could be used to make planning decisions about community health worker programmes, and offered the opportunity to evaluate the simplified methodology proposed by the WHO Maternal and Child Health (MCH) Working Group. [published abstract]

- 4294 Darwish, O.A. THE EFFECT OF BREAST-FEEDING AND NUTRITION ON LACTATIONAL AMENORRHOEA AND INCIDENCE OF PREGNANCY DURING LACTATION. EMR Health Services Journal, no.8, March 1990, pp.12-22.

This paper presents the major findings of a study on the effect of breastfeeding and nutritional status on the duration of postpartum lactational amenorrhoea and incidence of pregnancy among Egyptian women. The mean duration of lactational amenorrhoea was 8.8 and 11.4 months for urban and rural women, respectively.

- 4481 DEVELOPMENT GOALS AND STRATEGIES FOR CHILDREN IN THE 1990S. New York, UNICEF, August 1990, 61p.

This document reviews UNICEF's goals for children and development in the 1990s, specifically in areas such as maternal/child health, nutrition, water and sanitation, education, and literacy. Strategic priorities for reaching these goals are discussed, as well as key operational strategies and program approaches in different country situations.

- 4033 DIARRHEA MANAGEMENT RESULTS FROM SYSTEMS ANALYSIS STUDY IN PUNJAB. Bethesda, MD, PRICCR Child Survival Report, October 1989, 2p.

This report describes a systems analysis of service delivery activities at health centers and community health worker outreach activities in the Punjab, Pakistan. Interactions between supervisors and health workers were also observed. Finally, 1300 mothers were interviewed regarding their knowledge of diarrhea management practices.

- 3922 Djeddah, C. MENTAL HEALTH CARE IN MALI--THE MARRIAGE OF TWO MEDICINES. Africa Health, vol.12 no.5, July 1990, p.30.

The author of this article describes a project to develop a regional centre for traditional medicine in Mali and discusses its role in the treatment of neuropsychiatric patients.

- 4552 Dugdale, A.E.; Groenendaal, F.; Sauer, P.J.J. BREAST MILK AND NECROTISING ENTEROCOLITIS. The Lancet, vol.337 no.8738, February 16, 1991, pp.435-436, letter.

In this letter to the editor the authors discuss the protective effects of breast milk against necrotising enterocolitis.

- 3951 Ebrahim, G.J. LOOKING BEYOND CHILD SURVIVAL. Journal of Tropical Pediatrics, vol.36 no.4, August 1990, pp.146-147.

In this editorial, Ebrahim states that "it is now time to look beyond survival and ask about the quality of life that the survivors are likely to enjoy." He focuses on meeting children's developmental needs through programs such as Head Start in the U.S.

- 3838 Eckroad, K. SISTEMA DE INFORMACION DEL SERVICIO AMBULATORIO, ECUADOR. Arlington, VA, Management Sciences for Health, PRITECH, HSS 069-EC, December 7-20, 1989, 34p.

This report discusses the testing of data forms for outpatient clinics in Ecuador and makes recommendations for improvements. It also includes a schedule for implementing these changes.

- 3759 El Tom, A.R.; Lauro, D.; Farah, A.A. et al. FAMILY PLANNING IN THE SUDAN: A PILOT PROJECT SUCCESS STORY. World Health Forum, vol.10, 1989, pp.333-343.

This article describes a successful pilot project conducted in the Sudan from 1981 to 1983 which involved training village midwives to deliver maternal and child health and family planning services. In addition to educating mothers about family planning, the midwives were also trained to give information about ORT, nutrition, and immunization. A post-intervention survey in 1987 showed that 87% of mothers with children under 5 had used ORT for the last diarrheal episode. The survey also indicated that overall contraception use had increased from 10% prior to the project to 26% after the project.

- 4140 Enge, K.I.; Harrison, P.F. MATERNAL CHILD HEALTH PROVIDERS IN GUATEMALA--KNOWLEDGE, ATTITUDE, AND PRACTICES: RESEARCH FINDINGS AND SUGGESTIONS FOR APPLICATION. Arlington, VA, Management Sciences for Health, PRITECH, SS 249, January 1988, 186p.

In 1986, a national survey was carried out to better determine the knowledge, attitudes, and practices among health care providers in Guatemala in terms of five major interventions: immunization, control of diarrheal disease/ORT, breastfeeding and lactation management, growth monitoring, and acute respiratory infections. Also available in Spanish.

- 4255 Engelkes, E. PROCESS EVALUATION IN A COLOMBIAN PRIMARY HEALTH CARE PROGRAMME. Health Policy and Planning, vol.5 no.4, 1990, pp.327-335.

A comprehensive primary health care project in Choco, Colombia carried out an evaluation for decision-making purposes over a 5-year period. All information gathered by different methods was analyzed and ordered. Criteria for the analysis were reliability and validity, relevance, costs of obtaining the data, and use of the data. The most

relevant data were obtained by WHO protocols, external evaluations, and from participatory evaluation.

- 3851 Faivre, D. LE PERIMETRE BRACHIAL. *Developpement et Sante*, no.87, 1990, pp.12-14.

This article describes how to take an arm circumference measurement of a child for growth monitoring. It includes graphics that show exactly where and how to measure the arm.

- 4443 FEED THE MOTHER, FEED THE CHILD. *The Lancet*, vol.337 no.8732, January 5, 1991, p.41.

This news note reports that supplementary feeding of pregnant women and lactating mothers in Kenaba, the Gambia, often resulted in fewer low birth weight babies and an overall increase in the weight of village children. Although supplementation did not directly affect child growth, supplemented mothers were healthier and therefore could care better for their children.

- 3788 Ferreira Rea, M. THE BRAZILIAN NATIONAL BREASTFEEDING PROGRAM: A SUCCESS STORY. *International Journal of Gynecology and Obstetrics*, vol.31 suppl.1, 1990, pp.79-82.

This article reviews the 1987-1988 evaluation of the Brazilian National Breastfeeding Program. The Program used an integrated approach to protect, promote, and support breastfeeding including activities such as enacting employment legislation, controlling formula marketing, using mass media, and creating support groups. The evaluation indicated that the Program had a positive impact since breastfeeding duration increased in the survey areas of Sao Paulo and Recife.

- 4701 Fiedler, J. CHILD SURVIVAL AND THE ROLE OF THE MINISTRY OF HEALTH IN ECUADOR: PROGRESS, CONSTRAINTS AND REORGANIZATION. *Health Policy and Planning*, vol.6 no.1, 1991, pp.32-45.

Despite substantial progress in child survival rates in Ecuador in the 1980s, further advances have been hindered by problems within the ministry of health (MOH). Among the problems cited are lack of funding, the politicized nature of the MOH, and various structural and managerial inadequacies. The authors examine the problems and present recommendations for addressing them. In addition, the MOH's

current major initiative, the Regionalization Programme, is described in terms of how it can rectify the managerial and structural problems.

- 3783 Fisher, C. A MIDWIFE'S VIEW OF THE HISTORY OF MODERN BREASTFEEDING PRACTICES. *International Journal of Gynecology and Obstetrics*, vol.31 suppl.1, 1990, pp.47-50.

A British midwife comments on elements of successful breastfeeding: (1) the mother's desire to breastfeed; (2) correct positioning of the baby at the breast; and (3) allowing the baby to control time at the breast.

- 3837 Foster, S.O.; Sheppard, J.; Davis, J.H. et al. WORKING WITH AFRICAN NATIONS TO IMPROVE THE HEALTH OF THEIR CHILDREN. *Journal of the American Medical Association*, vol.263 no.24, June 27, 1990, pp.3303-3305.

This article describes 8 areas in which the Combatting Childhood Communicable Diseases Project provides assistance to African nations. These areas include immunization, diarrhea treatment, malaria treatment, health information, training health professionals, public health education, health care financing, and operational research.

- 4696 Freund, P.J. ECONOMIC DECLINE AND NUTRITION IN ZAMBIA. Harare, Zimbabwe, paper presented at the Economic Policy, Equity and Health Workshop, February 18-21, 1991, 22p.

This paper reviews the background factors contributing to malnutrition in Zambia (economic, demographic) and then addresses the major determinants of health and nutrition...The effect of economic decline on health/nutrition is presented from available data on disease trends, health service indicators, and malnutrition statistics. Some recommendations on what should be done to address the problem and finally some research priorities for the future are suggested. [published abstract]

- 4126 Gadomski, A.; Black, R.; Mosley, W.H. CONSTRAINTS TO THE POTENTIAL IMPACT OF CHILD SURVIVAL IN DEVELOPING COUNTRIES. *Health Policy and Planning*, vol.5 no.3, 1990, pp.235-245.

Child survival interventions such as ORT, immunizations, ARI, malaria control and nutrition programs have not had as great an impact on child mortality as was anticipated in the early 1980s. This article discusses constraints to implementing such interventions and suggests some changes in

implementation that are needed in the 1990s.

- 908 Gendrel, D.; Richard-Lenoble, D.; Kombila, M. et al. GIARDIASIS AND BREAST-FEEDING IN URBAN AFRICA. *Pediatric Infectious Disease Journal*, vol.8 no.1, January 1989, pp.58-59.

This study evaluated the possible protective role of breastfeeding against *Giardia lamblia* in 400 infants in Gabon. Results indicated that the rates of infection with *G. lamblia* was significantly lower in breastfed children than in non-breastfed children.

- 694 Gerein, N.M.; Ross, D.A. IS GROWTH MONITORING WORTHWHILE? AN EVALUATION OF ITS USE IN THREE CHILD HEALTH PROGRAMMES IN ZAIRE. *Social Science and Medicine*, vol.32 no.6, 1991, pp.667-675.

An evaluation of three child health programs in rural Zaire was carried out to determine if the health workers used growth monitoring to target health and nutrition interventions to children at risk of disease or malnutrition. None of the programs used growth monitoring as an educational or motivational tool to promote action by mothers or communities to improve children's health. The authors suggest that further research is needed to determine if growth monitoring should be a part of child health programs.

- 488 Gittelsohn, J. TECHNICAL CONSULTANT VISIT TO THE GAMBIAN FOOD AND NUTRITION ASSOCIATION (GAFNA). Arlington, VA, Management Sciences for Health, PRITECH Project, RAD 042-GA and ICP 044-GA, December 10, 1990, 40p.

During site visits in the Gambia, the consultant assisted GAFNA and PRITECH/West Africa staff in designing and conducting their respective ongoing qualitative research on infant feeding. The assistance included selection of appropriate qualitative data collection and analysis methods, training of data collectors in research methods, establishing systems for qualitative data management and analysis, training computer operators, and reviewing preliminary data in order to make decisions about continued research.

- 245 GLOBAL HEALTH IN THE '80S AND '90S. *The Lancet*, vol.336 no.8726, November 24, 1990, p.1309.

This brief article summarizes the contents of a recent UNICEF report, "Development Goals and Strategies for Children in the 1990s." The report states that health expenditures per person dropped in the 1980s in most developing countries, while infant mortality rates stopped declining and malnutrition incidence grew.

- 3782 Gonzalez, R.B. A LARGE SCALE ROOMING-IN PROGRAM IN A DEVELOPING COUNTRY: THE DR. JOSE FABELLA MEMORIAL HOSPITAL EXPERIENCE. *International Journal of Gynecology and Obstetrics*, vol.31 suppl.1, 1990, pp.31-34.

The success of Dr. Jose Fabella Memorial Hospital in the Philippines in expanding a pilot rooming-in project to rooming-in for all mothers, regardless of birthing method, is described in this article. Rooming-in would facilitate breastfeeding since mothers and newborns would be kept together.

- 4251 Gopaldas, T.; Christian, P.S.; Abbi, R.D. et al. DOES GROWTH MONITORING WORK AS IT OUGHT TO IN COUNTRIES OF LOW LITERACY? *Journal of Tropical Pediatrics*, vol.36, December 1990, pp.322-327.

This paper examines various aspects of the growth monitoring component of the Integrated Child Development Services program of India. Data from 3704 rural children, 0-6 years of age, revealed that growth of almost half the children had never been monitored, and had been monitored inadequately in another 25% of cases. Near universal illiteracy among mothers seems to be the most formidable obstacle to the effective implementation of growth monitoring programs.

- 4829 Gray, R.; Van Galen, A.M.; Voorhoeve, H.W.A. et al. LACTATIONAL AMENORRHOEA. *The Lancet*, vol.337 no.8751, May 18, 1991, pp.1232-1233, letter.

These three letters concern the relationship of lactational amenorrhea and child spacing. The first letter claims that women need to breastfeed very intensively to achieve prolonged protection from pregnancy. The second, reporting on a study in Malawi, found that lactational amenorrhea lasted 7.9 months. The third discusses use of lactational amenorrhea in developed countries.

- 3776 Greaves, J.P.; Hendrata, L. BREASTFEEDING AND GROWTH MONITORING. *International Journal of Gynecology and Obstetrics*, vol.31 suppl.1, 1990, pp.121-123.

Using growth monitoring to encourage and promote breastfeeding is discussed in this article. The authors suggest that if mothers see that their children grow properly during breastfeeding periods, they will gain confidence in their ability to produce an adequate milk supply. The problems as well as the benefits of using this tactic are outlined.

- 3975 Green, E.C.; Pederson, B.; Warren, D.M. STRATEGIES FOR THE ESTABLISHMENT OF COOPERATIVE PROGRAMS INVOLVING AFRICAN TRADITIONAL HEALERS IN THE CONTROL OF DIARRHEAL DISEASES OF CHILDREN. Paper prepared for the WHO Ad Hoc Group on Traditional Medicine and Diarrheal Disease, September 1989, 43p.

This paper discusses strategies for including African traditional healers in national CDD programs. It includes information on obstacles to including healers in CDD programs and strategies for overcoming these obstacles. It then presents a model system for incorporating healers into programs based on initiatives that have taken place in Nigeria.

- 4564 Grossi, J. MEXICAN DOCTORS SERVE RURAL AREAS. *Frontlines*, February 1991, p.10.

This brief article describes the Community Doctors Project in Mexico operated by the Mexico Foundation for Family Planning. The program enables doctors to set up offices in semi-urban areas and small towns with low income residents. The project's aim is to provide low-cost family planning services and maternal and child health care.

- 3907 Gunnlaugsson, G.; Smedman, L.; Da Silva, M.C. ROTAVIRUS SEROLOGY AND BREASTFEEDING IN YOUNG CHILDREN IN RURAL GUINEA-BISSAU. *Acta Paediatrica Scandinavica*, vol.78, 1989, pp.62-66.

One hundred and forty-four children aged 9-20 months living in 14 villages in a rural area of Guinea-Bissau were examined for circulating rotavirus antibodies twice in a 15 month period...The age-specific proportion of seropositivity increased from 4/40 (10%) at 9-11 months to 26/29 (90%) at 33-35 months of age. All the initially seropositive children retained detectable antibodies to rotavirus...Breastfeeding, decreasing sharply through the age interval covered by the follow-up (9-35 months), had no apparent influence on seroconversion at the ages concerned.

[published abstract]

- 436 HEALTH AND NUTRITIONAL STATUS OF LIBERIAN REFUGEE CHILDREN--GUINEA, 1990. Morbidity and Mortality Weekly Report, vol.40 no.1, January 11, 1991, pp.13-15.

This report summarizes the findings of the health and nutritional assessment of Liberian refugee children living in Guinea. Based on the findings, the assessment team recommended accelerated food distribution; strengthened surveillance systems for food availability, nutritional status, morbidity and mortality; improved PHC structure; intensified ORT promotion; and improved water supply.

- 788 HEALTH AND NUTRITIONAL STATUS OF LIBERIAN REFUGEE CHILDREN, 1990. Weekly Epidemiological Record, no.16, April 19, 1991, pp.112-115.

In May 1990 an assessment was conducted to determine the nutritional status and health needs of the thousands of Liberian refugee children living in Guinea. Based on their findings the team recommended increased food distribution and access to health care; improved surveillance systems for food availability, nutritional status, morbidity and mortality; improved water supplies; and intensified efforts to promote ORT. This article highlights the vulnerability of both host and refugee populations when local food reserves are depleted and stresses the necessity of prospective district health service planning.

- 966 HEALTH FACTORS WHICH MAY INTERFERE WITH BREAST-FEEDING. Bulletin of the World Health Organization, vol.67 suppl., 1989, pp.41-54.

[This article] discusses situations where breast-feeding is not possible, or is contraindicated, for reasons related to the physical health of the infant or the mother, and where breast-milk substitutes may therefore be needed for extended periods. Finally, there are also a number of situations which are frequently thought to be an impediment to breast-feeding but which in fact generally are not; these, too, are discussed. [published abstract]

- 789 Helsing, E. SUPPORTING BREASTFEEDING: WHAT GOVERNMENTS AND HEALTH WORKERS CAN DO--EUROPEAN EXPERIENCES. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.69-76.

In 1986 the WHO European Regional Office convened a meeting of health workers' organizations to draw up a strategy for breastfeeding promotion. This paper outlines the elements in the strategy, the reasons why some countries have seen increases in breastfeeding, and the possible ways international organizations can help.

- 3881 Hill, K.; Mosley, W.H. HEALTH INTERVENTION STRATEGIES IN ASIA AND THE NEAR EAST--PAST PERFORMANCE AND ITS IMPLICATIONS FOR THE FUTURE. Baltimore, MD, Johns Hopkins University, Institute for International Programs, August 1989, 27p.

This background paper will review mortality trends in the Asia and Near East (ANE) region over the last 25 years, and will examine the implications for health programs of different paths of mortality decline between now and the year 2000...[The authors] also consider the implications of mortality change for the implementation of health interventions, and particularly how to improve efficiency and effectiveness as mortality declines. [published abstract]

- 3760 Hogan, R.; Martinez, J. BREASTFEEDING AS AN INTERVENTION WITHIN DIARRHEAL DISEASES CONTROL PROGRAMS: WHO/CDD ACTIVITIES. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.115-119.

The authors discuss the activities of WHO's CDD program in terms of breastfeeding promotion. These activities include (1) studying the protective effects of breastfeeding; (2) identifying, testing, and implementing interventions to promote breastfeeding; and (3) including breastfeeding promotion information in management training courses.

- 4078 Hollis, C.; Seumo, E.; Bappa, A.M. et al. IMPROVING YOUNG CHILD FEEDING PRACTICES IN CAMEROON: PROJECT OVERVIEW. Washington, D.C., The Manoff Group Inc. for the Agency for International Development, October 1989, 31p.

This document reviews a project undertaken by the Manoff Group Inc. and CARE/Cameroon to improve feeding practices in Mayo Tsanaga and Mayo Sava, Cameroon. The authors describe the planning and implementation of the project, which used social marketing to convey messages about proper feeding. Finally, the results of a post-intervention survey conducted to evaluate the project are discussed. Data showed that mothers' knowledge about nutrition as well as their participation in nutrition-related activities had increased,

although there were minimal changes in feeding practices.

- 4263 Holmes, W. FAILURE TO THRIVE. The Lancet, vol.336 no.8722, October 27, 1990, p.1073, letter.

This letter to the editor advocates the use of parent-held growth cards in growth monitoring programs. Experiences with the Road to Health Card in Zimbabwe are described.

- 4479 Huffman, S. .; Steel, A. DO CHILD SURVIVAL INTERVENTIONS REDUCE MALNUTRITION? THE DARK SIDE OF CHILD SURVIVAL. Bethesda, MD, Center to Prevent Childhood Malnutrition, 1990, 40p.

This paper discusses the impact of child survival interventions on child growth and presents evidence that while programs such as ORT and immunization may avert death, the reduced mortality is not necessarily accompanied by increased growth or improved general morbidity. It suggests that the central focus of the child survival revolution should be the improvement of feeding of young children in addition to interventions to control infections.

- 3882 Huntington, D.; Berman, P.; Kendall, C. HEALTH INTERVIEW SURVEYS FOR CHILD SURVIVAL PROGRAMS--A REVIEW OF METHODS, INSTRUMENTS, AND PROPOSALS FOR THEIR IMPROVEMENT. Baltimore, MD, Johns Hopkins University, Institute for International Programs, June 1989, 51p.

This document provides a synthesis of published literature on the health interview survey (HIS) research method often used in child survival programs. Eight child survival HIS are compared in order to review what was done and the methodology for carrying it out. The three specific topic areas reviewed are problem formulation, measurement of variables, and design features. There is also a summary of the future implications of using this method in child survival programs in developing countries.

- 3942 THE INFANT AND YOUNG CHILD DURING PERIODS OF ACUTE INFECTION. Bulletin of the World Health Organization, vol.67 suppl., 1989, pp.85-95.

This article discusses the effect of infections on the nutritional status of young children. It describes the impact of various infections, such as diarrheal diseases and measles on a child's overall health. The effect of various dietary regimens, including exclusive breastfeeding and use of breast milk substitutes, on nutritional status are also

reviewed.

- 4563 INNOCENTI DECLARATION ON THE PROTECTION, PROMOTION AND SUPPORT OF BREASTFEEDING. Mothers and Children, vol.10 no.1, 1991, pp.6-7.

This article outlines the declaration which was produced and adopted by participants at the WHO/UNICEF policymakers' meeting, "Breast-Feeding in the 1990s: A Global Initiative," held in Florence, Italy from July 30-August 1, 1990. The declaration states why breastfeeding is essential and why obstacles to it in the health system, in the workplace, and in the community must be removed. There is also a listing of operational targets for governments in terms of breastfeeding promotion.

- 4233 Isenalumbe, A.E. INTEGRATION OF TRADITIONAL BIRTH ATTENDANTS INTO PRIMARY HEALTH CARE. World Health Forum, vol.11 no.2, 1990, pp.192-198.

An evaluation of domiciliary midwifery services in a suburban area of Benin City, Nigeria, revealed that mothers liked them mainly because of the provision for home delivery. The integration of traditional birth attendants into organized health care was considered desirable by both mothers and the midwifery staff. Domiciliary midwifery services are recommended as a means of integrating traditional birth attendants into primary health care. [published abstract]

- 4261 Jamison, D.T.; Mosley, W.H. DISEASE CONTROL PRIORITIES IN DEVELOPING COUNTRIES: HEALTH POLICY RESPONSES TO EPIDEMIOLOGICAL CHANGE. American Journal of Public Health, vol.81 no.1, January 1991, pp.15-22.

For over a decade the international health community has appropriately given priority to communicable childhood diseases. The rapid demographic transition that many developing countries are undergoing is now producing great epidemiological diversity among developing countries; however, this demands that health policymakers consider a broad range of options. Governments need to consider options beyond the direct provision of health services, such as regulation, legislation, subsidies, and mass communication.

- 3793 Jennings, V.H. BREASTFEEDING PROMOTION IN FAMILY PLANNING PROGRAMS. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp. 131-133.

[This paper presents] a discussion of the steps being taken by the Institute for International Studies at Georgetown University, in collaboration with the United States Agency for International Development (A.I.D.), to assist family planning organizations to increase their promotion and support of breastfeeding. [published abstract]

- 4306 Johnson, J.S. WORLD LEADERS FOCUS ON CHILDREN AT SUMMIT. Frontlines, November 1990, pp.2-3.

This brief article describes the position of the U.S. at the first World Summit for Children, held in New York City in September 1990.

- 4119 Jolly, R.; Seaman, J.; Poore, P. et al. OVERPOPULATION AND DEATH IN CHILDHOOD. The Lancet, vol.336 no.8720, October 13, 1990, pp.936-938, letter.

In these letters to the editor, the authors comment on the relationship between reducing child mortality and the population problem. They respond to Dr. King's argument (The Lancet, September 15, 1990) that reduced mortality without accompanying economic and social changes will only lead to increased population growth rates.

- 4633 KENYA'S AMREF TAKES AN INNOVATIVE APPROACH. Source, March 1991, pp.28-29.

This article briefly reviews the African Medical and Research Foundation's (AMREF's) current efforts to train Kenyan traditional healers in modern medical practices. The healers are being trained to promote ORT and immunization as well as to treat common illnesses such as diarrhea.

- 4059 Keusch, G.T. VITAMIN A SUPPLEMENTS--TOO GOOD NOT TO BE TRUE. New England Journal of Medicine, vol.323 no.14, October 4, 1990, pp.985-987.

In this editorial the author discusses the use of vitamin A supplements to reduce morbidity and mortality from malnutrition and related illnesses, such as measles and diarrhea. He cites two vitamin A supplementation studies from India and Africa which produced excellent results in terms of reduced morbidity and mortality related to diarrhea

and measles. He concludes that supplementation programs should not be substituted for immunization, primary health care and improved water supply and sanitation, but should be conducted in addition to these measures.

- 4559 King, M. THE DEMOGRAPHIC TRAP. The Lancet, vol.337 no.8736, February 2, 1991, pp.307-308, letter.

In this letter to the editor, Dr. Maurice King comments that child survival and world health in general are dependent upon the capacity of our ecosystem to support life in quantity and variety.

- 4042 King, M. HEALTH IS A SUSTAINABLE STATE. The Lancet, vol.336 no.8716, September 15, 1990, pp.664-667.

In this editorial, the author discusses "the terrifying spectre of human communities destroying their ecological support systems as the result of population growth." He proposes a new global health strategy for WHO based on an understanding of the demographic and ecological implications of public health measures.

- 4279 Klein, S. BIRTH, DEATH AND HOPE IN THE PHILIPPINES. Links, vol.7 nos.3 and 4, Fall/Winter 1990, pp.22-23.

A woman who taught midwifery to urban and rural midwives in the Philippines describes some of her experiences and impressions from the trip. She concludes that it is the uneven distribution of wealth and power that makes pregnancy difficult for Filipina women and their babies.

- 4105 Knippenberg, R.; Levy-Bruhl, D.; Osseni, R. et al. THE BAMAKO INITIATIVE: PRIMARY HEALTH CARE. Children in the Tropics, no.184 and 185, 1990, pp.1-94.

This issue of Children in the Tropics focuses on implementation of the Bamako Initiative in Benin and Guinea and the lessons learned from the experience. The authors conclude that such efforts can be effective and sustained as long as there is active participation of health workers and communities, some cost recovery mechanisms, and rationalization of the supply and management of essential resources.

1804 KNOWLEDGE PROVES STRENGTH. Grassroots, no.1, May 1991, p.1.

In this brief article, Andean Rural Health Care reports on the success of its child survival project in Carabuco, Bolivia. Since the project's inception 3 years ago, child mortality has dropped to one-third the previous level. The project involves vaccinations, growth monitoring, ORT and nutrition education.

1333 Koch-Weser, D.; Yankauer, A. WHAT MAKES INFANT MORTALITY RATES FALL IN DEVELOPING COUNTRIES? American Journal of Public Health, vol.81 no.1, January 1991, pp.12-13.

This brief article comments on the study by Sandiford et al. on the infant mortality rate in Nicaragua (American Journal of Public Health, January 1991). The two principal lessons to be learned from the study are: the infrastructure to deliver PHC must be in place; and the government must be committed to health as one of its priorities.

1063 Koenig, M.A.; Khan, M.A.; Wojtyniak, B. et al. IMPACT OF MEASLES VACCINATION ON CHILDHOOD MORTALITY IN RURAL BANGLADESH. Bulletin of the World Health Organization, vol.68 no.4, 1990, pp.441-447.

This study examines the impact of measles vaccination on childhood mortality, based on longitudinal data from the Matlab maternal and child health/family planning programme in rural Bangladesh. It analyzes the mortality experience of 8135 vaccinated and 8135 randomly matched nonvaccinated children ages 9-60 months...The results indicate that measles vaccination had a pronounced impact on both short- and long-term survival--the mortality rates for vaccinated children were as much as 46% less than those for nonvaccinated children. [published abstract]

1636 Kow, F.; Geissler, C.; Balasubramaniam, E. ARE INTERNATIONAL ANTHROPOMETRIC STANDARDS APPROPRIATE FOR DEVELOPING COUNTRIES? Journal of Tropical Pediatrics, vol.37 no.1, February 1991, pp.37-44.

To test the validity of using international standards as references for the assessment of nutritional status, investigations were carried out on preschool-aged children in Papua New Guinea. The findings show that any deviation below standard weight, height and arm circumference is associated with greater prevalence of disease. The use of international standards is therefore appropriate.

- 4315 Kuhn, L.; Zwarenstein, M. WEIGHT INFORMATION ON THE "ROAD TO HEALTH" CARD INADEQUATE FOR GROWTH MONITORING? South African Medical Journal, vol.78, October 20, 1990, pp.495-496, letter.

In this letter to the editor, the authors describe a study undertaken in a rural village in Ciskei, South Africa that suggests that the quality of weight information on the "Road to Health" growth charts may be inadequate for growth monitoring.

- 3967 LACTATION. Bulletin of the World Health Organization, vol.67 suppl., 1989, pp.19-40.

The physiological aspects of lactation are described in this article. The composition of breast milk and its immunological properties are reviewed. There is also a discussion of the effect of breastfeeding on mothers, especially with respect to the nutritional needs of lactating mothers and the relationship between lactation and contraception.

- 4223 LACTATION. Africa Health, vol.13 no.1, November 1990, pp.21-23.

This series of news notes on breastfeeding briefly reviews three topics: lactational amenorrhoea and fertility control; breastfeeding and deaths from diarrhea; and transmission of the HIV virus through breast milk.

- 4308 Lawrence, G.W.; Lehmann, D.; Anian, G. et al. IMPACT OF ACTIVE IMMUNISATION AGAINST ENTERITIS NECROTICANS IN PAPUA NEW GUINEA. The Lancet, vol.336 no.8724, November 10, 1990, pp.1165-1167.

Enteritis necroticans, known locally as pigbel, has been a major cause of illness and death among children in the highlands of Papua New Guinea. Effects of an immunization program on pigbel admissions in 3 of the 5 major hospitals were assessed. Admissions for pigbel were less than one-fifth of previous figures after immunization was well established.

- 4688 Leslie, J. WOMEN'S NUTRITION: THE KEY TO IMPROVING FAMILY HEALTH IN DEVELOPING COUNTRIES? Health Policy and Planning, vol.6 no.1, 1991, pp.1-19.

In this paper the author contends that insufficient

attention has been paid to the extent, causes, and consequences of malnutrition among women. The author argues that women's malnutrition must be addressed in order to promote the overall health and welfare of developing country families. The causes and prevalence of women's malnutrition are described and suggestions for improving the situation are presented. Two suggested approaches are school-based supplementation programs for adolescent girls and the development of programs designed to reduce the extreme demands on adult women's time and energy.

- 4700 Lindenberg, C.S.; Artola, R.F.; Jimenez, V. THE EFFECT OF EARLY POST-PARTUM MOTHER-INFANT CONTACT AND BREAST-FEEDING PROMOTION ON THE INCIDENCE AND CONTINUATION OF BREAST-FEEDING. *International Journal of Nursing Studies*, vol.27 no.3, 1990, pp.179-186.

This article reports on a study of 375 Nicaraguan women with newborns which attempted to determine the factors that promote the initiation and continuation of breastfeeding. 87% of all the cases initiated breastfeeding but only 54% continued breastfeeding for at least four months. The findings suggest that in populations where most women initiate breastfeeding, post-partum mother-infant contact practices combined with standardized breastfeeding promotion can influence the initial choice to breastfeed. However, these practices alone are not sufficient to prolong breastfeeding.

- 3940 THE LOW-BIRTH-WEIGHT INFANT. *Bulletin of the World Health Organization*, vol.67 suppl., 1989, pp.68-84.

This article discusses the specific nutritional needs of low-birth-weight infants as well as dietary intakes for such babies. Based on current studies, it is suggested that breast milk is the optimal food for low-birth-weight children.

- 1086 Malek-Afzali, H.; Chamsa, M.; Sanei Mehri, S.H. et al. SURVEY OF BREAST-FEEDING, WEANING CONDUCT, IMMUNIZATION AND DIARRHOEA IN CHILDREN 12-23 MONTHS, ISLAMIC REPUBLIC OF IRAN. *EMR Health Services Journal*, no.6, 1989, pp.20-27.

A survey was conducted throughout Iran of infant nutrition and status of the EPI and CDD programs. Information was gathered on breastfeeding, weaning, immunization, incidence of diarrhea, and treatment of diarrhea.

- 3792 Marchione, T.J. FOOD SUPPLEMENTATION PROGRAMS AND BREASTFEEDING PRACTICES. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.125-131.

The author examines the possible impact of food supplementation programs on breastfeeding practices. Because supplementation may be substituted for breast milk, the author states that such programs should include quality nutrition education that is culturally appropriate to targeted populations. Supplementation programs, if properly managed, could also be used as a vehicle for breastfeeding promotion.

- 4452 Marcotte, J.; Casterline, J.B. INTERRELATIONS AMONG CHILD MORTALITY, BREASTFEEDING, AND FERTILITY IN EGYPT, 1975-80. Washington, D.C., The World Bank, August 1990, 52p.

In this paper the authors examine the relationships among reproductive behavior, fertility, and child survival with particular emphasis on the effects of breastfeeding and weaning on fertility and child mortality. Data from Egypt from 1975-1980 were used to study these relationships. The authors conclude that in areas where modern contraceptive use is low, as in Egypt, breastfeeding could be the single most important proximate determinant of fertility and child survival.

- 4114 Martorell, R.; Mason, J.; Rasmussen, K. et al. CHILD FEEDING PRACTICES: KNOWLEDGE, RESEARCH NEEDS AND POLICY IMPLICATIONS. Unpublished report, nd, 72p.

This document deals with the determinants of child feeding practices in developing countries and with the implications these practices have for the health and nutritional status of young children. The authors review the determinants, provide a framework to identify intervention points, identify useful indicators for the surveillance of nutritional problems during weaning, and suggest areas where more research is needed.

- 4081 Martorell, R.; Rivera, J.; Lutter, C.K. INTERACTION OF DIET AND DISEASE IN CHILD GROWTH. In: BREASTFEEDING, NUTRITION, INFECTION AND INFANT GROWTH IN DEVELOPED AND EMERGING COUNTRIES. S.A. Atkinson, L.A. Hanson, and R.K. Chandra, eds., St. John's, Canada, ARTS Biomedical Publishers and Distributors, 1990, pp.307-321.

In this study 397 Guatemalan children were given either a

high-energy, high-protein drink (atole) or a low-energy drink (fresco) in order to assess the effect of food supplementation and diarrheal diseases on growth. Results indicated that diarrheal disease prevalence was similar in both atole and fresco groups; however, diarrheal disease was negatively related to growth in only the fresco group, since the atole seemed to attenuate the relationship between growth and diarrhea.

- 4715 MATERNAL AND CHILD HEALTH IN BOLIVIA. DHS Newsletter, vol.4 no.1, 1991, pp.9-10.

In Bolivia a Demographic Health Survey was carried out in 1989 which included an extra section about maternal and child health. The main findings about MCH are briefly outlined in this article. Data showed that almost half of all deaths after the neonatal period among children under five were diarrhea related and that one in five deaths was associated with respiratory illness. There were also marked differences in the treatment rates of these diseases based on socioeconomic status. For example, children whose mothers had some education were more likely to receive treatment than those whose mothers were uneducated.

- 4806 MEASLES VACCINATION ENHANCES LONG-TERM SURVIVAL POSSIBILITIES. Glimpse, vol.13 no.1, January - February 1991, p.1+.

In 1982, the ICDDR,B Matlab Health and Research Centre began a measles vaccination program. A study was undertaken to assess the impact of measles vaccination on child mortality over a 3 1/2 year period. Findings showed a 40% reduction in mortality, indicating a positive effect of vaccination on both short- and long-term child survival.

- 4686 Melville, B. IS BREASTFEEDING STILL IN DECLINE? THE NEED TO REINFORCE EXISTING POLICIES. Health Policy and Planning, vol.6 no.1, 1991, pp.78-81.

In this article the author addresses the problem of breastfeeding declines in developing countries and identifies factors responsible, such as infant formula promotion and inadequate social support systems. The implications of such declines are discussed as well as strategies to increase breastfeeding.

- 4305 Meyers, A. THE CHILD SURVIVAL COUNTERREVOLUTION. Links, vol.7 nos.3 and 4, Fall/Winter 1990, pp.6-8.

This essay argues that the way child survival technologies are implemented not only dooms them to failure, but may even exacerbate hunger and disease. It claims that UNICEF chose to abandon the community participation goals of Alma Ata in favor of selective PHC. A.I.D.'s ORT programs are attacked because they failed to empower third world people.

- 4745 Millard, A.V. THE PLACE OF THE CLOCK IN PEDIATRIC ADVICE: RATIONALES, CULTURAL THEMES, AND IMPEDIMENTS TO BREASTFEEDING. *Social Science and Medicine*, vol.31 no.2, 1990, pp.211-221.

In this article the author states that although breastfeeding may be advised in the U.S., the recommended techniques often undermine the practice. In particular, she focuses on the rigidity of feeding schedules which can impede proper breastfeeding. She also discusses how various cultural themes affect feeding practices and the mother-child relationship in general.

- 3785 Musoke, R.N. BREASTFEEDING PROMOTION: FEEDING THE LOW BIRTH WEIGHT INFANT. *International Journal of Gynecology and Obstetrics*, vol.31 suppl.1, 1990, pp.57-59.

This article discusses feeding low birthweight infants exclusively with breast milk. Breast milk can be expressed and fed to these infants by cup when mothers do not directly breastfeed. The feeding practices for low birthweight babies at the Kenyatta National Hospital's newborn unit are described as an example.

- 4125 Nitayarumphong, S. EVOLUTION OF PRIMARY HEALTH CARE IN THAILAND: WHAT POLICIES WORKED? *Health Policy and Planning*, vol.5 no.3, 1990, pp.246-254.

This article discusses the evolution of primary health care activities in Thailand since 1978. It concludes that PHC has been successful because of community involvement in health, collaboration between government and NGOs, the integration of the PHC program, the decentralization of planning and management, and resource allocation to PHC, among other factors.

- 4134 NOTHING IS UNTHINKABLE. *The Lancet*, vol.336 no.8716, September 15, 1990, pp.659-661.

In this editorial the author refers to Maurice King's

article (The Lancet, September 15, 1990) in discussing the necessity of controlling fertility in developing countries as well as conducting child survival interventions. He states that more funding should be directed to family planning efforts in order to curb runaway population growth. This, in turn, would lead to a better health situation in the long-term for developing country people.

- 3802 NUTRITIONAL AND HEALTH STATUS OF DISPLACED PERSONS, SUDAN, 1988-1989. Weekly Epidemiological Record, no.21, May 25, 1990, pp.162-164.

This article provides statistics from 71 surveys which assessed the nutritional status of 17,639 children living in Khartoum, Sudan. The surveys, which were conducted from September 1988 to February 1989, showed decreases in the prevalence of severely malnourished children and in numbers of children dying from measles. Supplementary feeding campaigns and mass immunization programs are cited as possible reasons for these decreases.

- 4062 Pabst, H.F.; Spady, D.W. EFFECT OF BREAST-FEEDING ON ANTIBODY RESPONSE TO CONJUGATE VACCINE. The Lancet, vol.336 no.8710, August 4, 1990, pp.269-270.

Infants [in Edmonton, Canada] were immunised at the ages of 2, 4, 6 months with conjugate Haemophilus influenza type B vaccine, and their responses to the vaccine were evaluated by feeding method (breast or formula). There were no significant differences between the groups in antibody levels at early ages. However, the antibody levels were significantly higher in the breast-fed (57 infants) than the formula-fed group (24 infants) at 7 months...and at 12 months. [published abstract]

- 3899 PHARMACISTS STRESS PHC ACTIVITIES. Africa Health, vol.12 no.5, July 1990, p.4.

This news note reports on the West African Pharmaceutical Federation's meeting. The participants recommended strengthening West African primary health care activities and emphasized the need to involve pharmacists in the policy and decision-making levels in the PHC system.

- 4683 PHC/EPI REVIEW: GHANA. Ghana, Ministry of Health, World Health Organization, and UNICEF, February 1989, 145p.

From January 31 to February 17, 1989, a review was conducted

of the primary health care (PHC) program in Ghana with emphasis on the Expanded Programme on Immunization (EPI). A separate survey was also carried out to determine the knowledge, attitudes and practices about control of diarrheal diseases as well as the accessibility of ORS. The reviewers found that significant progress has been made in EPI, mainly due to increased government commitment to immunization. PHC efforts seemed fairly well integrated, although various regions needed more specific targets for disease reduction. The diarrheal disease survey results indicated that the majority of mothers had heard about ORS (mostly from health workers), but most could not prepare it correctly. Health education that emphasizes feeding and correct ORS preparation is recommended.

- 3941 PHYSIOLOGICAL DEVELOPMENT OF THE INFANT AND ITS IMPLICATIONS FOR COMPLEMENTARY FEEDING. Bulletin of the World Health Organization, vol.67 suppl., 1989, pp.55-67.

[This article] reviews the development of the gastrointestinal tract and renal functions [of infants] during early extra-uterine life and the corresponding nutritional needs. It also considers infant-feeding practices, particularly complementary feeding. [published abstract]

- 4480 Popkin, B.M.; Adair, L.; Akin, J.S. et al. BREAST-FEEDING AND DIARRHEAL MORBIDITY. Pediatrics, vol.86 no.6, December 1990, pp.874-882.

In order to study the relationship between breastfeeding and diarrhea, the authors conducted a longitudinal study of 3000 mother-infant pairs from pregnancy through infancy in the Cebu region of the Philippines. Results indicated that any supplementation of breastfeeding, with either non-nutritive or nutritive foods, increased the risk of diarrhea. Breastfeeding benefits were most evident in the earlier part of infancy and were slightly greater in urban environments.

- 4240 Potts, M. WORLD SUMMIT ON CHILDREN: MERE SURVIVAL OR A WORLD WORTH LIVING IN? The Lancet, vol.336 no.8718, October 6, 1990, pp.866-868.

The author summarizes some of the discussions at the World Summit on Children held in New York City in September 1990. He makes the point that efforts need to be made not just to ensure survival but to develop the full potential of children.

- 4304 Potts, M. THE FIFTH FREEDOM REVISITED: II. THE WAY FORWARD. The Lancet, vol.336 no.8726, November 24, 1990, pp.1293-1295.

This article suggests that a realistic goal for the 1990s is to ensure universal access to family planning by the year 2000. Certain key policies, however, would have to be implemented first in regard to contraceptives, abortion, breastfeeding management, and AIDS.

- 3968 THE PRENATAL AND IMMEDIATE POSTPARTUM PERIODS. Bulletin of the World Health Organization, vol.67 suppl., 1989, pp.9-18.

This article focuses on aspects of maternal and child nutrition during the prenatal and immediate post-partum periods. The specific nutritional requirements of pregnant women and newborn infants are reviewed and the importance of immediate mother/ child contact after birth is stressed.

- 4000 Putney, P. QUETZALTENANGO MATERNAL NEONATAL HEALTH PROJECT, INCAP. Arlington, VA, Management Sciences for Health, PRITECH, HSS 074-GU, February 1990, 27p.

Traditional birth attendants (TBAs) are a key element in any successful strategy to reduce maternal and infant mortality in Guatemala. This report reviews the proposed INCAP "Quetzaltenango Maternal and Neonatal Health Project" which will focus on improving TBAs' knowledge, skills, and relationship to the formal health system as well as on the system's capacity to respond appropriately to cases which are referred.

- 3995 Putney, P.J.; Smith, B. GUATEMALAN HIGH RISK BIRTH STRATEGY SEMINAR AND FOLLOW-UP. Arlington, VA, Management Sciences for Health, PRITECH, HSS 083-GU, March 1990, 41p.

As follow-up to a high risk birth strategy seminar held in Guatemala City in March 1990, two further sessions succeeded in producing a plan of action and a set of recommendations for presentation to the Ministry of Health. A key recommendation was the establishment of a Technical Advisory Group to monitor, advise, and carry forward the process of designing and implementing a national traditional birth attendant program.

- 4056 Rahmathullah, L.; Underwood, B.A.; Thulasiraj, R.D. et al. REDUCED MORTALITY AMONG CHILDREN IN SOUTHERN INDIA RECEIVING A SMALL WEEKLY DOSE OF VITAMIN A. *New England Journal of Medicine*, vol.323 no.14, October 4, 1990, pp.929-935.

The authors conducted a randomized, controlled, masked clinical trial with 15,419 south Indian pre-school children to study the effect of vitamin A supplementation on mortality. Results showed that with regular supplements of vitamin A, mortality was reduced on the average by 54%, thus indicating that supplementation can have a significant impact on child survival in areas where deficiency and malnutrition are recognized public health problems.

- 4089 Rea, M.F.; Berquo, E.S. IMPACT OF THE BRAZILIAN NATIONAL BREAST-FEEDING PROGRAMME ON MOTHERS IN GREATER SAO PAULO. *Bulletin of the World Health Organization*, vol.68 no.3, 1990, pp.365-371.

A broad-based national breast-feeding programme was launched in Brazil in 1981 that was preceded by an evaluation of infant feeding habits in two metropolitan areas of the country. This paper reports on the initial findings of an evaluation of the programme in Greater Sao Paulo that was carried out in 1987...As a result of the programme, the mean duration of breast-feeding rose from 89.4 days to 127.5 days and of feeding only breast-milk from 43.2 days to 66.6 days. The proportion of previous children who were breast-fed for more than 6 months rose from 18.9% for those born in 1981-82 to 37.7% for those born in 1984, when programme activities were at their highest, and slipped back again to 27.6% in 1985-86. [published abstract]

- 4635 Reis, T.; Elder, J.; Satoto, et al. AN EXAMINATION OF THE PERFORMANCE AND MOTIVATION OF INDONESIAN VILLAGE HEALTH VOLUNTEERS. *International Quarterly of Community Health Education*, vol.11 no.1, 1990-1991, pp.19-27.

A study was conducted to evaluate the performance of Indonesian village health workers (kader) and to examine which motivating factors were related to performance. The observations showed that while kader performed immunization, growth monitoring and other clinic activities adequately, they failed to take advantage of opportunities to educate mothers about nutrition, ORT, and other important areas. In turn, interviews with kader indicated that although money for services was a motivator, they valued expressions of appreciation even more.

- 3766 REPORT OF THE FIFTH INTERNATIONAL CONFERENCE OF THE INTERNATIONAL NUTRITION PLANNERS FORUM: CRUCIAL ELEMENTS OF SUCCESSFUL COMMUNITY NUTRITION PROGRAMS. Seoul, Korea, Agency for International Development, Office of Nutrition, and Washington, D.C., The Academy for Educational Development, Nutrition Communication Project, August 15-18, 1989, 24p.

This publication summarizes the case studies and discussions of the Fifth International Conference of the International Nutrition Planners Forum (INPF), that was held in Seoul, Korea, August 15-18, 1989...the participants reviewed and analyzed six major cross-cutting issues: political commitment; community mobilization and participation; human resources development; targeting; monitoring, evaluation, and management information systems; and replicability and sustainability. [published abstract]

- 4231 Righard, L.; Alade, M.O. EFFECT OF DELIVERY ROOM ROUTINES ON SUCCESS OF FIRST BREAST-FEED. The Lancet, vol.336 no.8723, November 3, 1990, pp.1105-1107.

In a study in Sweden 72 normally delivered infants were observed for two hours after birth in order to determine the effects of two different ward routines and of pethidine administration to mothers on babies' sucking technique. Results suggested that mother-infant contact should not be interrupted during the first hour after birth or until the first successful breastfeed had been accomplished. Use of drugs such as pethidine should be restricted as they can interfere with the infant's ability to suck shortly after birth.

- 4444 Rijpma, S.; Barnes, J.; Meegan, M.K. et al. THE "DEMOGRAPHIC TRAP". The Lancet, vol.337 no.8732, January 5, 1991, pp.50-51, letter.

These letters to the editor respond to Dr. Maurice King's assertion that child survival programs without accompanying social and political changes are harmful because they only increase human misery and could contribute to runaway population growth.

- 4329 Robinson, S.A.; Larsen, D.E. THE RELATIVE INFLUENCE OF THE COMMUNITY AND THE HEALTH SYSTEM ON WORK PERFORMANCE: A CASE STUDY OF COMMUNITY HEALTH WORKERS IN COLOMBIA. Social Science and Medicine, vol.30 no.10, 1990, pp.1041-1048.

The research reported in this paper examines the relative

influence of reward and feedback factors associated with the community compared to those associated with the health system on the performance of community health workers. The findings indicated that feedback and rewards from the community have greater influence on work performance than do those stemming from the health system. The authors suggest a model that would focus management support on the worker-community interface rather than the worker-health service interface.

- 3852 Rogeaux, O.; Fassin, D.; Bichon, L. et al. L'EVALUATION DES ACTIONS DE SANTE: 2. EVALUER UN PROGRAMME DE PROTECTION MATERNO-INFANTILE. *Developpement et Sante*, no.87, 1990, pp.18-21.

The authors explain how to evaluate village MCH programs. They offer indicators for gauging the effectiveness of such services in reducing childhood malnutrition and increasing vaccination levels. They also offer criteria for judging the overall impact of MCH services.

- 3765 Ruiz-Palacios, G.M.; Calva, J.J.; Pickering, L.K. et al. PROTECTION OF BREAST-FED INFANTS AGAINST CAMPYLOBACTER DIARRHEA BY ANTIBODIES IN HUMAN MILK. *Journal of Pediatrics*, vol.116 no.5, May 1990, pp.707-713.

To investigate the role of breast-feeding in preventing diarrhea caused by campylobacter jejuni, we followed 98 Mexican children prospectively for 2 years beginning at their birth. Attack rates of diarrhea in children less than 6 months of age who were not fed human milk were 2.3 times greater than those in children of the same age who were fed human milk. Breast-fed children remained free of diarrhea for a longer time than non-breast-fed children...The diarrhea attack rate caused by C. jejuni for non-breast-fed infants was significantly greater...than that in the breast-fed group. [published abstract]

- 4435 Saadeh, R.; Benbouzid, E. BREAST-FEEDING AND CHILD-SPACING: IMPORTANCE OF INFORMATION COLLECTION FOR PUBLIC HEALTH POLICY. *Bulletin of the World Health Organization*, vol.68 no.5, 1990, pp.625-631.

The authors discuss the use of breastfeeding as a child spacing method and describe the mechanisms used to assess lactational amenorrhea. They also review how breastfeeding can be used effectively with other contraceptive methods and

when such methods should be introduced. Finally, there is a brief discussion of the health policy implications associated with lactation associated infertility.

- 4712 Sachdev, H.P.S.; Krishna, J.; Puri, R.K. et al. WATER SUPPLEMENTATION IN EXCLUSIVELY BREASTFED INFANTS DURING SUMMER IN THE TROPICS. *The Lancet*, vol.37 no.8747, April 20, 1991, pp.929-933.

In India, 45 healthy, exclusively breastfed infants were studied to determine the need for water supplementation to maintain water homeostasis in exclusively breastfed children during the hot season in a tropical country. The infants were divided into two groups, one receiving only breast milk and the other breast milk plus supplementary fluids according to the mothers' usual practice. There were no significant differences between the groups in urine output, urine or serum osmolality, weight change, or rectal temperature. The authors concluded that exclusively breastfed infants do not need supplemental water and that, in fact, reduced breast milk intake is a potential disadvantage of this practice.

- 4262 Sandiford, P.; Morales, P.; Gorter, A. et al. WHY DO CHILD MORTALITY RATES FALL? AN ANALYSIS OF THE NICARAGUAN EXPERIENCE. *American Journal of Public Health*, vol.81 no.1, January 1991, pp.30-37.

A comprehensive review of available sources of mortality data was undertaken to document the changes that have occurred in infant mortality in Nicaragua over the last 3 decades. It was found that a rapid fall in infant mortality began in the early 1970s and has continued steadily since. Improved access to health services seems to have been the most important factor.

- 4691 Sanusi, M. SIERRA LEONE: WHY DO SO MANY CHILDREN DIE? *Africa Health*, vol.13 no.3, March 1991, p.35.

Despite escaping war and drought, Sierra Leone's mortality rate for children under five is still one of the world's highest. The most common causes include tetanus, respiratory illness and diarrheal diseases. In this brief article the author cites unequal wealth distribution and a poor national economy as the main reasons for high mortality.

- 3794 Savage, F. THE NEED FOR ACTION. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.11-15.

The author examines some reasons why mothers choose to bottle feed or only partially breastfeed. Health education was cited as crucial to promotion, with special emphasis on training health workers to teach mothers proper breastfeeding techniques. Making breastfeeding information more readily accessible was also noted as a necessary part of promotion.

- 3818 Schieber, B.; Delgado, H.; Bartlett, A. HIGH RISK OBSTETRIC AND NEONATAL MANAGEMENT IN THE RURAL HIGHLANDS OF GUATEMALA. Guatemala City, Guatemala, INCAP, January 1990, 25p.+app.

This document presents the results of a study which attempted to detect the major problems regarding the management of high risk obstetric and neonatal cases at the level of families, traditional birth attendants (TBAs), community health services, and hospitals in the Quetzaltenango area of Guatemala. The findings are discussed in terms of assisting health personnel to develop and implement problem-solving interventions and to evaluate the impact of such interventions.

- 4211 Schlossman, N.P. BREASTFEEDING PROMOTED FOR IMPROVED INFANT NUTRITION. Frontlines, October 1990, pp.4-5.

This article describes the activities of WELLSTART, an organization which promotes breastfeeding through educational programs for doctors, nurses, nutritionists, and hospital administrators from developing countries. Examples from Indonesia and Honduras show that increased breastfeeding resulted in lower infant morbidity and cost reductions in a hospital setting.

- 4300 Scott, G.M. INFECTION CONTROL WITH LIMITED RESOURCES. Africa Health, vol.13 no.1, November 1990, pp.42-43+.

After investigating a high rate of wound infections in a West African hospital, the author describes the problems he found and recommends steps to prevent further nosocomial infection.

- 4285 Shoo, R.; King, M. OVERPOPULATION AND DEATH IN CHILDHOOD. The Lancet, vol.336 no.8726, November 24, 1990, pp.1312-1313, letter.

Commenting on an earlier article by Maurice King on overpopulation, Dr. Rumishael Shoo argues that the answer is not to abandon the selective PHC interventions but to run them more cost-effectively and to explore ways in which local communities can participate. King's reply follows.

- 744 Short, R.; Lewis, P.R.; Renfree, M.B. et al. CONTRACEPTIVE EFFECTS OF EXTENDED LACTATIONAL AMENORRHOEA: BEYOND THE BELLAGIO CONSENSUS. *The Lancet*, vol.337 no.8743, March 23, 1991, pp.715-717.

In Australia a study was conducted among breastfeeding women to investigate the contraceptive effects of lactational amenorrhea. The study concludes that lactational amenorrhea can provide excellent contraception during the first six post-partum months and that it can offer good protection even up to twelve months. However, once menstruation resumes, it is essential to use other forms of contraception to avoid pregnancy.

- 3933 Shrestha, R.M.; Tyson, S.; Selenje, L. ASSOCIATION BETWEEN WEIGHT FOR AGE AND MID-UPPER ARM CIRCUMFERENCE MEASUREMENT: FINDINGS FROM MALAWI. *Journal of Tropical Pediatrics*, vol.36 no.4, August 1990, pp.192-195.

In the present study, confined to the four urban areas of Malawi, a comparison was made between the weight-for-age (W/A) and mid-upper arm circumference (MUAC) measurements...Correct use of MUAC was found to be as effective as W/A in detecting undernutrition. [published abstract]

- 3822 Siddique, A.K.; Mutsuddy, P.; Islam, Q. et al. MAKESHIFT TREATMENT CENTRE DURING A CHOLERA EPIDEMIC IN BANGLADESH. *Tropical Doctor*, vol.20, April 1990, pp.83-85.

The authors describe the use of makeshift treatment centers which were erected during cholera outbreaks in Bangladesh to increase rural patients' accessibility to health facilities. In this article they present the data collected at one such center and discuss its efficacy as a way to deliver emergency care in rural areas of Bangladesh.

- 4137 Smith, B. FAMILY PLANNING STRATEGY SEMINAR, GUATEMALA CITY, GUATEMALA. Arlington, VA, Management Sciences for Health, PRITECH, HSS 083-GU, March 1990, 8p.

A Family Planning Strategy Seminar was held on March 29, 1990, to begin work on expanding family planning programs as part of the solution to Guatemala's high risk birth problem. A summary of the proceedings, conclusions reached, and recommendations for further action are presented. Also available in Spanish.

- 4203 Specter, M.; Devroy, A. A CAMPAIGN TO SAVE CHILDREN. Washington Post, October 1, 1990, p.A1+.

This article provides an overview of the first World Summit for Children which was held at the UN on September 30, 1990. Leaders of more than 70 nations met to discuss child survival issues such as poverty, illiteracy, hunger, and disease. Their goals for this decade included reduction of infant mortality by one-third and malnutrition by 50%, and the eradication of polio.

- 3775 STATEMENT ON BREASTFEEDING AND DIARRHEA PREVENTION AND TREATMENT. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, P.159.

This article outlines the statement on breastfeeding and diarrhea prevention made by the Interagency Workshop on Health Care Practices Related to Breastfeeding held from December 7-9, 1988, in Washington, D.C. The statement emphasizes the importance of exclusive breastfeeding in terms of preventing diarrhea.

- 4099 Stembera, Z. PROSPECTS FOR HIGHER INFANT SURVIVAL. World Health Forum, vol.11 no.1, 1990, pp.78-84.

This article examines the decrease of infant mortality rates in developed and in some developing countries. The decreases are attributed to improved infant care, better primary health care, healthier life-styles, and better social and cultural development. Data from developed and developing countries are compared and ways to make further progress are discussed.

- 3786 Stokamer, C.L. BREASTFEEDING PROMOTION EFFORTS: WHY SOME DO NOT WORK. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.61-65.

This paper discusses some of the factors that can make a difference between successful and unsuccessful breastfeeding programs in hospitals and the experience of a nurse educator

who tried to promote breastfeeding in a large inner city teaching hospital [in New York]. It will show how a well-intentioned program was unsuccessful and that one obvious reason for failure was the lack of administrative support and supervision. [published abstract]

- 4653 STRATEGIES FOR PREVENTION OF DIARRHOEAL DISEASES. Glimpse, vol.12 no.6, November-December 1990, pp.1+.

This article briefly highlights several studies which focused on strategies for the prevention of diarrheal diseases. The studies discussed include weaning education, hygiene education, vitamin A supplementation, and breastfeeding promotion.

- 4097 STRATEGY FOR IMPROVED NUTRITION OF CHILDREN AND WOMEN IN DEVELOPING COUNTRIES. New York, UNICEF, 1990, 36p.

This [UNICEF] strategy, based on previous nutrition-oriented programmes, proposes to reduce and ultimately eliminate malnutrition in developing countries. It proposes a methodology for the identification of appropriate actions in a given context through situation assessment and analysis...Important strategy components include the promotion of breast-feeding and attention to outreach and urbanization. [published abstract]

- 4123 Streefland, P.; Chowdhury, M. THE LONG-TERM ROLE OF NATIONAL NON-GOVERNMENT DEVELOPMENT ORGANIZATIONS IN PRIMARY HEALTH CARE: LESSONS FROM BANGLADESH. Health Policy and Planning, vol.5 no.3, 1990, pp.261-266.

This paper discusses the future role of national non-government development organizations in health development. Taking the case of Bangladesh it is shown how some NGOs have developed into large professional organizations and how their position relates both to foreign donor support and the state. It is argued that the future contribution of national NGOs to the development of primary health care may be considerable.

- 4323 Tan, J.Z.G. URBAN ACCELERATED STRATEGY IN THE PHILIPPINES. Urban Examples, no.16, February 1990, pp.9-12.

Realizing that EPI coverage was lower in urban Filipino areas than in rural areas, the Department of Health adopted a 3-year plan of action designed to increase coverage in urban areas. The plan included identification of priority

areas within each city, development of service delivery plans, social mobilization efforts, and creation of an IEC plan.

- 3936 Teller, C.H.; Zerfas, A.; Rutstein, S. GROWING UP BEYOND CHILD SURVIVAL: SOCIODEMOGRAPHIC CONSIDERATIONS ON INFANT/CHILD MORTALITY, CHRONIC UNDERNUTRITION AND COMMUNITY/HOUSEHOLD FOOD INSECURITY IN THE THIRD WORLD. Paper presented at the Third Annual Hunger Research Briefing and Exchange, Providence, RI, April 4-6, 1990, 15p.+app.

In this paper the authors present recent data with indicators that attempt to address some of the major policy-relevant nutrition issues. They analyze recent (1986-89) Demographic and Health Survey (DHS) survey data on mortality, anthropometry, breastfeeding, feeding and illness, plus existing data from the UN system to address the food-nutrition GAP and the mortality-nutrition LAG. Data from Guatemala, Uganda, and Sri Lanka are examined in-depth. Research and policy and program recommendations are suggested to address the issue of reducing hunger in the 1990s.

- 4112 Teran, E.I. APRENDIENDO A CUIDAR LA SALUD DE NUESTROS NINOS. La Paz, Instituto de Desarrollo y Educacion Para El Campesino and La Paz, Asociacion de Organizaciones Non Gubernamentales En Salud, 1990, 179p.

This document presents simple guidelines for the care of children, both well babies and those who are ill. It reviews basic anatomy as well as discussing pregnancy, nutrition, and immunization. Among the types of diseases covered are diarrhea, respiratory infections, tuberculosis, hepatitis, and typhoid.

- 3962 Thaver, I.H.; Ebrahim, G.J.; Richardson, R. INFANT MORTALITY AND UNDERNUTRITION IN THE SQUATTER SETTLEMENTS OF KARACHI. Journal of Tropical Pediatrics, vol.36 no.3, June 1990, pp.135-140.

The socio-demographic and biological processes contributing to infant mortality and undernourishment were studied in five urban squatter settlements of Karachi [Pakistan]...Forty-one per cent of all deaths were in the neonatal period...Age, duration of breastfeeding, birth interval, and live/dead status of the previous sibling were significant biological variables accounting for 23 per cent of the variance for survival. Socio-economic status

accounted for 22 per cent of the variance and health-seeking behavior...for 28 per cent. [These variables were also important determinants of malnutrition among this population.] [published abstract]

- 3836 Toole, M.J.; Waldman, R.J. PREVENTION OF EXCESS MORTALITY IN REFUGEE AND DISPLACED POPULATIONS IN DEVELOPING COUNTRIES. *Journal of the American Medical Association*, vol.263 no.24, June 27, 1990, pp.3296-3302.

This article reviews the health profiles of refugee and internally displaced populations during the emergency and post-emergency phases. The major causes of mortality have been measles, diarrheal diseases, respiratory infections, and malaria. Strategies for provision of food rations, clean water, and immunization for children are discussed as ways to decrease excessive mortality.

- 4711 TRADITIONAL PATTERNS OF BREASTFEEDING STILL STRONG IN DEVELOPING COUNTRIES. *DHS Newsletter*, vol.4 no.1, 1991, p.8.

This brief article reports on the findings of a study done by the Institute of International Studies in Natural Family Planning (Georgetown University) about breastfeeding trends in developing countries. The study showed that breastfeeding was still prevalent in developing countries and that no country showed a significant decrease.

- 3778 Traore, B.; Traore, M.; Campbell, O. ETUDE DES EFFETS DE L'ALLAITEMENT SUR LA MORBIDITE DIARRHEIQUE, L'ETAT NUTRITIONNEL ET LA MORTALITE DES ENFANTS AU MALI. London, London School of Hygiene and Tropical Medicine; Columbia, Maryland, DHS Project; and New York, The Population Council, April 1990, 96p.

This document outlines a study which sought to determine the effects of breastfeeding on diarrheal morbidity, nutritional status, and mortality of children in Mali. Results indicated that exclusive breastfeeding was associated with lower diarrheal morbidity and better nutritional status. It was also suggested that children who were weaned before 12 months of age ran the risk of dying earlier than those weaned between 12 and 18 months.

- 4181 Underwood, B.A. VITAMIN A NUTRITION IS IMPORTANT TO CHILD SURVIVAL. *Vital News*, vol.1 no.1, Spring 1990, pp.7-8.

The author briefly reviews the vitamin A study conducted in

India by Rahmathullah et al. which indicated that regular supplements could decrease child morbidity and mortality. She then discusses options for integrating supplement programs into other development programs such as diarrheal disease control and family planning.

- 4152 UPDATE: HEALTH AND NUTRITIONAL PROFILE OF REFUGEES--ETHIOPIA, 1989-1990. Morbidity and Mortality Weekly Report, vol.39 no.4, October 12, 1990, pp.707-718.

This article reviews the health and nutritional status of Somali and Sudanese refugees living in Ethiopia and discusses how various interventions, such as supplementary feeding programs and immunization surveillance, affected morbidity and mortality in these populations.

- 4045 URBAN PHC PROGRAMME IN ADDIS ABABA, ETHIOPIA--A MODEL FOR THIRD WORLD CITIES. Urban Examples, no.10, February 1990, pp.18-19.

This article briefly describes a program designed to improve the health and hygiene of urban dwellers in Addis Ababa, Ethiopia. The program focuses on immunization of the under 5 population.

- 4539 USAID: BUILDING A BETTER FUTURE FOR CHILDREN. USAID Highlights, vol.7 no.2, Fall 1990, pp.1+.

This article provides an overview of AID's efforts to improve child survival in developing countries. Among the programs discussed are ORT, immunization, AIDS, breastfeeding, maternal health, and education. ORT is cited as one of AID's greatest success stories.

- 3781 Williamson, N.E. BREASTFEEDING TRENDS AND THE BREASTFEEDING PROMOTION PROGRAMS IN THE PHILIPPINES. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.35-41.

Breastfeeding trends in the Philippines in terms of duration and incidence are discussed in this article. Due to declining duration and incidence rates since 1973, the National Movement for the Promotion of Breastfeeding is attempting to reverse the trends by encouraging various promotion activities. The activities include improving hospital practices and implementing a 5 year plan for breastfeeding promotion.

- 3835 Winikoff, B.; Semeraro, P.; Zimmerman, M. et al.
CONTRACEPTION DURING BREASTFEEDING: A CLINICIAN'S
SOURCEBOOK. New York, The Population Council, 1989, 36p.

This book was developed for clinicians who work with postpartum and breastfeeding women. It is designed as a quick reference guide for health workers so that they can provide accurate information to women about the contraceptive effects of breastfeeding. It also provides information on other forms of contraception which can be used while breastfeeding.

- 4718 Wolfers, I. PRIMARY HEALTH CARE IN DEVELOPING COUNTRIES. The Lancet, vol.337 no.8743, March 23, 1991, p.739, letter.

In this letter to the editor the author advocates comprehensive primary health care programs for developing countries. He states that selective programs can conflict with the needs and priorities of patients.

- 4146 Zerfas, A. BREASTFEEDING AND INFANT FEEDING GRAPHS BASED ON DATA FROM THE DEMOGRAPHIC HEALTH SURVEYS. Washington, D.C., Nutrition Communication Project, The Academy for Educational Development, June 1990, 44p.+app.

This document presents data on breastfeeding and infant feeding practices in 18 developing countries. The data are presented in the form of graphs and were taken from the results of demographic health surveys. Topics reviewed include percentages of breastfed and bottle-fed children, age at introduction of solid foods, nutritional status, risk of infection, and the link between growth and feeding practices.

ENVIRONMENTAL ASPECTS (of Control and Prevention)

- 3824 Adebayo, C.; Sridhar, M.K.C.; Hussain, M.A. TRADITIONAL FOOD WRAPPING PRACTICES AND THE PROBLEM OF REFUSE DISPOSAL. *Africa Health*, vol.12 no.4, May 1990, pp.26-27.

This article describes the problem of using leaves to wrap foods in Nigeria. The discarded leaves cause a refuse problem as well as being vehicles for disease transmission. Health education measures have been undertaken to encourage people to use polythene bags instead of the leaves.

- 4164 Aziz, K.M.A.; Bilqis; Hoque, A. et al. REDUCTION IN DIARRHOEAL DISEASES IN CHILDREN IN RURAL BANGLADESH BY ENVIRONMENTAL AND BEHAVIOURAL MODIFICATIONS. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, vol.84, 1990, pp.433-438.

The impact of a water, sanitation and hygiene education intervention project on diarrhoeal morbidity in children under 5 years old was evaluated in a rural area of Bangladesh...By the end of the study period, children in the intervention area were experiencing 25% fewer episodes of diarrhoea than those in the control area...These results suggest that an integrated approach to environmental interventions can have a significant impact on diarrhoeal morbidity. [published abstract]

- 4424 Bisset, A.; MacDonald, L.; Cresswell, J.P. et al. BIRDS, MILK, AND CAMPYLOBACTER. *The Lancet*, vol.337 no.8734, January 19, 1991, p.176, letter.

In this letter to the editor the authors comment on the relationship between bird attacks of milk bottles and *Campylobacter* infection in Great Britain.

- 4467 Black, M. FROM HANDPUMPS TO HEALTH: THE EVOLUTION OF WATER AND SANITATION PROGRAMMES IN BANGLADESH, INDIA AND NIGERIA. New York, UNICEF, July 1990, 133p.

This document reviews the water and sanitation programs in Bangladesh, India and Nigeria in terms of the technological, managerial, and social aspects which were critical to progress. It discusses such issues as community participation, women's roles, and linking water and sanitation to improvements in the health situation.

- 4525 Blackett, I. LOW COST SANITATION. Dialogue on Diarrhoea, issue 43, December 1990, p.7.

This brief article outlines how the government of Lesotho is promoting the introduction of a latrine into every household by providing the design for an affordable, desirable pit latrine, by using extensive hygiene education, and by providing a loan scheme to finance latrine building.

- 4433 Bukenya, G.B.; Kaser, R.; Nwokolo, N. THE RELATIONSHIP OF MOTHERS' PERCEPTION OF BABIES' FAECES AND OTHER FACTORS TO CHILDHOOD DIARRHOEA IN AN URBAN SETTLEMENT OF PAPUA NEW GUINEA. Annals of Tropical Paediatrics, vol.10, 1990, pp.185-189.

This study investigated mothers' perception of the importance of babies' feces and other factors in the etiology of diarrhea in Papua New Guinea. Children whose mothers did not perceive babies' feces to be important in causing diarrhea had a 7.4 times greater risk of getting diarrhea than those whose mothers recognized the relationship. The risk for contaminated food was 6.8 times greater for those children whose mothers did not recognize its importance.

- 4529 Bundy, D.A.P.; Cooper, E.S. WORMS AND COMMUNITY HEALTH. Dialogue on Diarrhoea, issue 43, December 1990, p.6.

This article briefly describes diarrhea caused by worm infections, especially trichuris dysentery, and discusses the impact of such infections on community health.

- 4760 Cohen, D.; Green, M.; Block, C. et al. REDUCTION OF TRANSMISSION OF SHIGELLOSIS BY CONTROL OF HOUSEFLIES (MUSCA DOMESTICA). The Lancet, vol.337 no.8748, April 27, 1991, pp.993-997.

The effect of housefly control on the incidence of diarrhea and shigellosis was evaluated in a prospective crossover intervention study at two military bases. Overall, fly counts were 64% lower on the bases exposed to fly control measures. Clinic visits dropped by 42% for diarrheal diseases and by 85% for shigellosis.

- 4144 Cooke, E.M. EPIDEMIOLOGY OF FOODBORNE ILLNESS: UK. The Lancet, vol.336 no.8718, September 29, 1990, pp.790-793.

This article reports on organisms that cause gastrointestinal disease as well as organisms that may be foodborne but produce other infections. It includes data on bacterial foodborne agents such as Salmonella, Campylobacters, listeria and E. coli, as well as viral foodborne disease and foodborne intoxications.

- 1309 Cousens, S.N.; Mertens, T.E.; Fernando, M.A. THE ANTHROPOMETRIC STATUS OF CHILDREN IN KURUNEGALA DISTRICT IN SRI LANKA: ITS RELATION TO WATER SUPPLY, SANITATION AND HYGIENE PRACTICE. Tropical Medicine and Parasitology, vol.41, 1990, pp.105-114.

Anthropometric data were collected for 1295 children in Sri Lanka to examine the relationship between anthropometric status and a range of water, sanitation and hygiene exposures. Some evidence was found that boiling of water was associated with improved height-for-age. Water source was not associated with anthropometric status. The authors conclude that CDD interventions may have no detectable impact on anthropometric status.

- 1058 Daniels, D.L.; Cousens, S.N.; Makoae, L.N. et al. A CASE-CONTROL STUDY OF THE IMPACT OF IMPROVED SANITATION ON DIARRHOEA MORBIDITY IN LESOTHO. Bulletin of the World Health Organization, vol.68 no.4, 1990, pp.455-463.

A health impact evaluation of the Rural Sanitation Pilot Project in Mohale's Hoek district, Lesotho, was conducted from October 1987 to September 1988...The results indicate that under-5-year-olds from households with a latrine may experience 24% fewer episodes of diarrhoea than such children from households without a latrine...The impact of latrines on diarrhoea was greater in those households that used more water, practiced better personal hygiene, and where mothers had a higher level of education or worked outside the home. [published abstract]

- 692 DODOTA WATER SUPPLY PROJECT, ETHIOPIA. Development Journal, issue 3, 1990, pp.39-43.

The Dodota Water Supply Project (DWSP) was implemented between 1982 and 1986 to provide a sub-district in Ethiopia with piped drinking water. When an evaluation was conducted, 40,000 of the 56,000 targeted people were receiving water from the project. This article outlines the project's operational features and the findings of the evaluation. The main conclusion was that the target community's responsibility and concern is vital to project

success. Therefore, project implementers should encourage community members to set their own priorities and to shoulder the responsibility for activities once they are started.

- 4043 Esrey, S.A.; Potash, J.B.; Roberts, L. et al. HEALTH BENEFITS FROM IMPROVEMENTS IN WATER SUPPLY AND SANITATION: SURVEY AND ANALYSIS OF THE LITERATURE ON SELECTED DISEASES. Arlington, VA, Water and Sanitation for Health Project for the Agency for International Development, Technical Report No.66, July 1990, 73p.

This report reviews and analyzes the findings of a number of studies of the impact of improved water supply and sanitation facilities on six diseases: diarrheal diseases, ascariasis, dracunculiasis (guinea worm), hookworm, schistosomiasis, and trachoma. Study results show that water supply and sanitation have a significant impact on morbidity. Median reductions in morbidity ranged from 26 percent for diarrheal diseases to 78 percent for guinea worm.

- 4272 Han, A.M.; Moe, K. HOUSEHOLD FAECAL CONTAMINATION AND DIARRHOEA RISK. *Journal of Tropical Medicine and Hygiene*, vol.93, 1990, pp.333-336.

A study in a low-income community in Yangon, Myanmar was conducted to determine the source of household fecal contamination, devise an index, and associate this index with diarrheal incidence in children. The risk of diarrhea significantly increased when the household fecal contamination index increased. Important risk factors were (1) going without footwear; (2) unsanitary or no latrine; and (3) indiscriminate defecation near or under the house.

- 4310 Han, A.M.; Hlaing, T. PREVENTION OF DIARRHOEA AND DYSENTERY BY HAND WASHING. *Transactions of the Royal Society of Tropical Medicine and Hygiene*, vol.83, 1989, pp.128-131.

This study was conducted to determine if proper hand washing by children and their mothers with plain bar soap after defecation and before preparing and eating meals could reduce the incidence of acute diarrhea and dysentery in children. Diarrheal incidence among the children in the hand washing households was found to be significantly lower than that among those in the control group.

- 4734 "HAPPINESS WATER" FOR WOMEN REPORTED IN CHINA. IRC Newsletter, no.198, January 1991, pp.1-2.

This article reports on projects in Chaozhou City, China which involved women in creating water supply and sanitation systems. Water supply systems decreased women's workload, thus allowing them to participate more in community enterprises. In addition, improved sanitation facilities significantly decreased the incidence of infectious diseases such as dysentery, typhoid, and viral hepatitis.

- 4654 Hart, C. CLASSY "CONDO" SEWERS FOR BRAZIL'S URBAN POOR. Source, March 1991, pp.16-20.

This article describes a low-cost sewage system being used in the poorer areas of Brazil. The system is based on communal consent and participation since a common sewage pipe connects neighbors and each family is responsible for maintaining the section on its property. The initial programs were publicized through a television soap opera and were very successful. Plans have been made to expand the system to many more disadvantaged areas.

- 4556 Hayes, A. HEALTH DOWN THE DRAIN? Africa Health, vol.13 no.2, January 1991, pp.12-13.

In this article the author discusses appropriate means of drainage and sanitation for medical facilities, from small health centers to large hospitals. Two relatively simple sanitation systems--septic tanks and waste stabilization ponds--are described.

- 4822 Hurst, C.J. PRESENCE OF ENTERIC VIRUSES IN FRESHWATER AND THEIR REMOVAL BY THE CONVENTIONAL DRINKING WATER TREATMENT PROCESS. Bulletin of the World Health Organization, vol.69 no.1, 1991, pp.113-119.

A review of results published in English or French between 1980 and 1990 was carried out to determine the levels of indigenous human enteric viruses in untreated surface and subsurface freshwaters and in water that had undergone "conventional treatment." Also reviewed was the stepwise efficiency of virus removal at different stages of the conventional drinking water treatment process, as practiced by full-scale plants.

- 4280 Huttly, C.R.A. THE IMPACT OF INADEQUATE SANITARY CONDITIONS ON HEALTH IN DEVELOPING COUNTRIES. World Health Statistics Quarterly, vol.43 no.3, 1990, pp.118-126.

This article reviews current knowledge of the major water- and sanitation-related diseases and the potential impact of improved sanitary facilities on health. Four health indicators are considered: diarrheal diseases, soil-transmitted nematode infections, dracunculiasis, and nutritional status.

- 4047 Johnston, A.M. FOODBORNE ILLNESS: VETERINARY SOURCES OF FOODBORNE ILLNESS. The Lancet, vol.336 no.8718, October 6, 1990, pp.856-858.

The author discusses animal enteric pathogens, pathogens affecting the udder (which may get into milk), and the problems of animal feed, transport and control of pathogens.

- 4828 Lawson, H.W.; Braun, M.M.; Glass, R.I.M. et al. WATERBORNE OUTBREAK OF NORWALK VIRUS GASTROENTERITIS AT A SOUTHWEST US RESORT: ROLE OF GEOLOGICAL FORMATIONS IN CONTAMINATION OF WELL WATER. The Lancet, vol.337 no.8751, May 18, 1991, pp.1200-1204.

This article reports on an outbreak of Norwalk virus gastroenteritis at a southwest US resort traced to a contaminated private deep water well. Although the latest technology was used to design the resort's water sewage treatment plants, the region's unique geological conditions posed unexpected problems that may trouble developers faced with similar subsurface geological formations and arid climate conditions in many parts of the world.

- 4690 Lightfoot, N.F.; Hudson, S.J.; Coulson, J.S. BIRDS, BEAKS, AND CAMPYLOBACTER. The Lancet, vol.337 no.8743, March 23, 1991, pp.734, letter.

In this letter to the editor the authors comment on the transmission of Campylobacter in England by infected birds that peck milk bottle caps. Birds that were tested were Campylobacter-positive, thus confirming their role in transmitting the infection.

- 4049 Lund, B.M. FOODBORNE DISEASE DUE TO BACILLUS AND CLOSTRIDIUM SPECIES. The Lancet, vol.336 no.8721, October 20, 1990, pp.982-986.

Outbreaks of food poisoning due to *Bacillus* and *Clostridium* species are reviewed in this article. Properties of each pathogen are discussed, as well as symptoms and control measures.

- 3807 MAJOR CHOLERA OUTBREAK HITS LUSAKA AFTER RAINS BURST SEWERS. Africa Health, vol.12 no.4, May 1990, p.5.

This news note reports on a cholera epidemic in Lusaka, Zambia, which occurred in February, 1990. Deterioration in sanitation was blamed for starting the outbreak.

- 4577 Mertens, T.E.; Cousens, S.N.; Fernando, M.A. et al. HEALTH IMPACT EVALUATION OF IMPROVED WATER SUPPLIES AND HYGIENE PRACTICES IN SRI LANKA: BACKGROUND AND METHODOLOGY. Tropical Medicine and Parasitology, vol.41, 1990, pp.79-88.

This article reviews a health impact evaluation of the Rural Water Supply and Sanitation Project conducted from January 1987 to March 1988 in the Kurunegala District of Sri Lanka. The seasonality of diarrhea cases as well as the sociodemographic characteristics and health-related behaviors of the study populations are examined. The authors also discuss the study design in terms of validity and potential sources of bias.

- 4720 Millson, M.; Bokhout, M.; Carlson, J. et al. AN OUTBREAK OF CAMPYLOBACTER JEJUNI GASTROENTERITIS LINKED TO MELTWATER CONTAMINATION OF A MUNICIPAL WELL. Canadian Journal of Public Health, vol.182, January/February 1991, pp.27-31.

A large outbreak of *Campylobacter jejuni* gastroenteritis attributed to contamination of an unchlorinated municipal water system [in a town in Ontario, Canada] was investigated. Unlike most previous summer outbreaks, this one began in early spring and was attributed to meltwater entering one or more municipal wells...It is concluded that intensive surveillance of water quality during periods of spring runoff is essential, and that timely reporting of disease outbreak patterns in emergency department settings is necessary to protect the public's health. [published abstract]

- 4426 MORE THOUGHT FOR FOOD--RICHMOND II. The Lancet, vol.337 no.8734, January 19, 1991, pp.144-146.

This article discusses a two-part report done by the Committee on the Microbiological Safety of Food in Great

Britain which focused on reducing foodborne illnesses. The measures outlined to control these illnesses include new government regulations, public education about food hygiene, and enlisting the cooperation of the food industry. Part two of the report reviews the progress to date and makes recommendations for the future.

- 4167 Murthy, G.V.S.; Goswami, A.; Narayanan, S. et al. EFFECT OF EDUCATIONAL INTERVENTION ON DEFAECATION HABITS IN AN INDIAN SLUM. *Journal of Tropical Medicine and Hygiene*, vol.93, 1990, pp.189-193.

A study was carried out to assess the effect of hygiene education and new latrines on the defecation habits of 172 adults in a New Delhi slum following a cholera epidemic. Results showed that females used the latrines more often than males. Study participants cited cost, distance, and problems in using the latrine itself as the main reasons for non-utilization.

- 4414 Narayan-Parker, D. SELF-HELP IN A RURAL WATER PROJECT. *World Health Forum*, vol.11 no.3, 1990, pp.327-331.

In 1985 a rural water project was undertaken in four Indonesian villages. Community participation was encouraged with women playing a leading role in project implementation. Among the gains resulting from the endeavor were better health, increased vegetable production, and increased confidence on the part of the women in undertaking such projects.

- 4428 Nurmi, E.V.; Hirn, J.A.; Nuotio, L.O. SALMONELLA IN POULTRY. *The Lancet*, vol.337 no.8733, January 12, 1991, pp.118-119, letter.

In this letter to the editor the authors comment on the competitive exclusion technique which is used to limit the spread of Salmonella in poultry.

- 3906 Olaiz-Fernandez, G.; Barragan de Olaiz, C. CONDICIONES DE VIDA Y GASTROENTERITIS EN LA POBLACION DE BAJO INGRESO EN TIJUANA, MEXICO. *Salud Publica de Mexico*, vol.31 no.1, January-February 1989, pp.46-53.

A cross-sectional study was carried out in the low income population of certain areas of the city of Tijuana, Mexico. Data collected showed that these suburban areas are

inhabited by people from rural areas of Mexico...General hygienic conditions were poor and the services insufficient. The prevalence of diarrheas among the population was extremely high in the two weeks previous to the study, being highest for children less than one year old, in which the proportion with at least one episode of diarrhea was 47 per cent. [published abstract]

- 4758 OUTSTANDING LESSONS FROM LESOTHO'S RURAL SANITATION PROGRAMME. IRC Newsletter, no.198, January 1991, pp.2-3.

The National Rural Sanitation Programme (NRSP) in Lesotho started in 1983 as a single district project and slowly expanded to a national level program. The program provides on-site sanitary facilities for rural households by employing a user cost recovery fee scheme. Health impact studies showed that diarrhea incidence decreased in areas with improved facilities.

- 4555 Potts, E.R. WATER AS A HEALTH INTERVENTION. Africa Health, vol.13 no.2, January 1991, pp.9-10.

The author discusses the importance of integrating water supply and sanitation programs into primary health care initiatives. The progress made by the UN International Drinking Water Supply and Sanitation Decade is briefly reviewed as well as the relationship between public health and improved water quality.

- 4121 Ramsay, C.N.; Marsh, J. GIARDIASIS DUE TO DELIBERATE CONTAMINATION OF WATER SUPPLY. The Lancet, vol.336 no.8718, October 6, 1990, pp.880-881, letter.

The authors of this letter to the editor report on several cases of giardiasis in Scotland due to a contaminated water tank.

- 4064 Roark, P. EVALUATION GUIDELINES FOR COMMUNITY-BASED WATER AND SANITATION PROGRAMS. Arlington, VA, Water and Sanitation for Health Project for the Agency for International Development, May 1990, 80p.

This document serves as a model for evaluating water supply and sanitation projects. It provides guidelines for evaluating the key components of such projects: water supply, sanitation, health education, and community participation. The model can be adapted to review both urban and rural projects.

- 4048 Roberts, D. SOURCES OF INFECTION: FOOD. The Lancet, vol.336 no.8718, October 6, 1990, pp.859-861.

There are three main routes by which microorganisms reach fresh food: raw food and ingredients, the foodhandler, and the environment. Here the author reviews what is known about each route and provides recommendations for proper food handling.

- 3880 Robson, E. LIFTING THE BURDEN OF INDIA'S WASTE. Source, June 1990, pp.6-8.

This article describes a low-cost latrine system which the government of India is incorporating into the country's water supply and sanitation program.

- 3826 SWIMMING-ASSOCIATED CRYPTOSPORIDIOSIS--LOS ANGELES COUNTY. Morbidity and Mortality Weekly Report, vol.39 no.20, May 25, 1990, pp.343-345.

An outbreak of gastroenteritis due to *Cryptosporidium* infection in Los Angeles county is reported in this article. The vehicle of transmission was a swimming pool contaminated with *Cryptosporidium*. Improved filtration systems are cited as a strategy to reduce risk of infections.

- 4083 Waites, W.M.; Arbuthnott, J.P. *FOODBORNE ILLNESS: AN OVERVIEW.* The Lancet, vol.336 no.8717, September 22, 1990, pp.722-725.

In this review article, the authors discuss surveillance of foodborne diseases, current eating habits and the associated risks of foodborne disease, methods for improved control, and prospects for the future.

- 4554 WATER AND SANITATION FUNDING STILL NOT ENOUGH. Africa Health, vol.13 no.2, January 1991, p.8.

This article briefly describes the accomplishments made during the International Drinking Water Supply and Sanitation Decade which began in 1981. Over the decade over 1.3 billion people in developing countries gained access to safe drinking water and improved sanitation services have been provided for almost 750 million. Goals for the future include increased funding, better environmental management, and greater private sector participation.

- 4447 THE WHO GOLDEN RULES FOR SAFE FOOD PREPARATION. EMR
Epidemiological Bulletin, no.15, October 1989, pp.3-5.

This brief article outlines several basic rules of safe food preparation. They include thoroughly cooking food; storing carefully; reheating properly; hand washing; keeping the kitchen clean; avoiding contact between raw and cooked foods; and using clean water.

- 4434 Yasuf, M.; Zakir Hussain, A.M. SANITATION IN RURAL COMMUNITIES IN BANGLADESH. Bulletin of the World Health Organization, vol.68 no.5, 1990, pp.619-624.

This study collected data on the sanitary conditions in the rural areas of Bangladesh where 85% of the population live. Data indicated that even where a safe water supply and sanitary latrines were provided, people did not always use them. The authors conclude that socioeconomic conditions and education levels need to be improved, since they both can influence the level of sanitation.

- 4815 Zeitlin, S.; Islam, F. THE USE OF SOAP AND WATER IN TWO BANGLADESHI COMMUNITIES : IMPLICATIONS FOR THE TRANSMISSION OF DIARRHEA. Reviews of Infectious Diseases, vol.13 suppl.4, 1991, pp.S259-S264.

The authors studied perceptions of cleanliness and the role of soap and handwashing in two poor Bangladeshi communities, one rural and one urban. Ideas of cleanliness generally were not based on germ theory; cleanliness was viewed in a larger context of purity vs. impurity. Washing served both physical and spiritual needs, while soap was regarded as a cosmetic rather than as an agent for removal of microorganisms.

SOCIAL ASPECTS (of Control and Prevention)

- 4836 Al-Mazroa, Y.; Al-Sahmmari, S. COMMUNITY PARTICIPATION AND ATTITUDES OF DECISION-MAKERS TOWARDS COMMUNITY INVOLVEMENT IN HEALTH DEVELOPMENT IN SAUDI ARABIA. Bulletin of the World Health Organization, vol.69 no.1, 1991, pp.43-50.

A survey of decision makers and community leaders in Saudi Arabia indicated that most adequately recognized the importance of community involvement in health development. A survey of residents in Ha'il and Qasim regions, however, showed that community participation in health activities was just beginning. Considerable effort is needed at the central, regional and peripheral levels to achieve meaningful community involvement in health.

- 3950 Bac, D.J.; Ferrinho, P.D.L. AN EVALUATION OF THE IMPACT OF CARE GROUPS ON KNOWLEDGE ABOUT ORAL FLUID THERAPY. South African Medical Journal, vol.76, November 4, 1989, pp.500-502.

This article reports on a survey carried out in the northern Transvaal, South Africa, to identify to what extent diarrhea was a problem, to determine the degree of knowledge of ORT in the population, and to find out whether care givers, or volunteer community health workers, have an impact on the use of ORS for home therapy of diarrhea in children.

- 3919 Bhattacharji, S. COMMUNITY BELIEFS AND RECOGNITION. ARI News, issue 16, April 1990. p.3.

In this article the author briefly describes the traditional beliefs about pertussis in a community in South India. Based on the research about these beliefs, health educators were able to plan appropriate programs to inform the people about proper immunization against the disease. The educators also involved local traditional healers in the programs.

- 4297 Bicego, G.T.; Boerma, J.T. MATERNAL EDUCATION, USE OF HEALTH SERVICES, AND CHILD SURVIVAL: AN ANALYSIS OF DATA FROM THE BOLIVIA DHS SURVEY. Columbia, MD, IRD/Macro Systems, Demographic and Health Surveys Program, December 1990, 29p.

This paper asks the question, "does formal education increase a mother's propensity to use modern child health services?" Multivariate methods are used to isolate the effect of maternal education on service utilization. The paper also focuses on maternal education as a determinant of

early childhood mortality. Finally, it centers on whether education per se and health behaviors conditioned by maternal education operate to decrease disease prevalence or to diminish case fatality.

- 4332 Brieger, W.R. JEDI JEDI, A YORUBA CULTURAL DISEASE WITH IMPLICATIONS FOR HOME MANAGEMENT OF DIARRHOEA. Health Education and Research: Theory and Practice, vol.5 no.3, 1990, pp.337-342.

In western Nigeria some mothers are suspicious of sugar-salt solution because sugar is known to cause a more serious ethnomedical condition known as jedi jedi. A survey was conducted to learn more about local perceptions of jedi jedi. As a result, health education efforts will emphasize the need to taste the solution before giving it to a sick child, so parents know the drink does not contain too much sugar.

- 4605 Brownlee, A. BREASTFEEDING, WEANING AND NUTRITION: THE BEHAVIORAL ISSUES. Malibu, CA, International Health and Development Associates for the Agency for International Development, July 1990, 93p.

This review of behavioral aspects of breastfeeding, weaning and nutrition concentrates on several major issues. First, beliefs, practices and other important factors affecting feeding practices, nutrition and child survival are examined. Then results from infant and child nutrition interventions both at the community level and in health institutions are reviewed. The...issue of sustaining and expanding nutrition programs is then discussed. Finally, qualitative research methods of particular value in examining behavioral aspects of infant and child feeding are presented. [published abstract]

- 4604 Brownlee, A. GROWTH MONITORING AND PROMOTION: THE BEHAVIORAL ISSUES. Malibu, CA, International Health and Development Associates for the Agency for International Development, July 1990, 94p.

In this review the author presents the major behavioral issues related to growth monitoring, such as traditional beliefs about child growth and promotion of community participation. She then reviews significant findings and discusses them in terms of project design and implementation. Finally, programmatic recommendations are outlined on the basis of the conclusions drawn from the

review.

- 4607 Che, T.J. THE KNOWLEDGE AND PRACTICES OF MOTHERS CONCERNING THE CONTROL OF DIARRHOEAL DISEASES IN CHILDREN 0-5 YEARS OLD. Yaounde, Cameroon, Unpublished report presented to the Department of Advanced Nursing Education, University of Yaounde, July 1990, 116p.

A study of 60 mothers in Cameroon was conducted to assess their knowledge and practices concerning treatment of diarrhea in 0-5 year olds. The majority of mothers (85%) considered diarrhea a serious illness and all of them fed their children during a diarrheal episode. Sugar-salt solution was familiar to 55% of them, although none of them could prepare it correctly. Health education about diarrhea prevention and treatment was recommended.

- 4838 Chowdhury, A.M.R.; Kabir, Z.N. FOLK TERMINOLOGY FOR DIARRHEA IN RURAL BANGLADESH. Reviews of Infectious Diseases, vol.13 suppl.4, 1991, pp.S252-S254.

In Bangladesh, 4 types of illnesses with names derived from folk terminology have been identified for which the clinical symptoms resemble diarrhea. Use of the word "diarrhea" in epidemiologic evaluations was problematic; people confused this term with "daeria," which accounted for only 5% of all diarrhea episodes. The implications of such information for a large-scale ORT program are discussed.

- 3777 Diame, E.M.; Ndiaye, S.; Airey, P. DIARRHOEAL MORBIDITY AMONG YOUNG CHILDREN: FINDINGS FROM THE DEMOGRAPHIC AND HEALTH SURVEY OF SENEGAL 1986. London, London School of Hygiene and Tropical Medicine; Columbia, Maryland, DHS Project; and New York, The Population Council, April 1990, 72p.

This document reports on the results of a demographic and health survey conducted in Senegal in 1986. The study focused on diarrheal morbidity among young children and the socioeconomic and environmental factors which affected it. Despite high diarrheal morbidity levels, no conclusive relationship between morbidity and any one socioeconomic or environmental factor was found.

- 4095 Etkin, N.; Ross, P.J.; Muazzamu, I. THE INDIGENIZATION OF PHARMACEUTICALS: THERAPEUTIC TRANSITIONS IN RURAL HAUSALAND. Social Science and Medicine, vol.30 no.8, 1990, pp.919-928.

The authors of this article use data from a study conducted in rural Nigeria to describe how some pharmaceuticals are being used as indigenous medicines, as opposed to being used as alternatives to traditional remedies. They then examine the biological implications of this behavior and discuss how indigenous understandings of disease and therapeutics may influence the utilization of biomedicines.

- 4199 Griffiths, M. HOW TO IMPROVE A CHILD'S WELL-BEING? FIRST, INCREASE MOTHERS' SELF-CONFIDENCE. Development Communication Report, no.70, 1990, p.7+.

In this article the author addresses the issue of mothers' self-confidence as a critical aspect of family health promotion. She points out that self-confident mothers feel more in control of their children's lives and therefore are more willing to try new health measures. Thus, mothers' self-perceptions should be considered when designing new health interventions.

- 4226 Hoedojo, L.G.P. MOBILIZING WOMEN FOR HEALTH. World Health, September-October 1990, pp.11-13.

Mobilization of women in Indonesian villages resulted in improved health care, particularly for mothers and children. This article describes women's involvement in the health care system, including volunteering at village health service posts (posyandu), participating in the Family Welfare Movement, and starting neighborhood nutrition clubs.

- 4639 Hurtado, E. LA LACTANCIA MATERNA EN LA ETIOLOGY DE LA DIARREA. Archivos Latinoamericanos de Nutricion, vol.39 no.3, September 1989, pp.278-291.

Anthropological studies carried out in Guatemala reveal that, according to popular beliefs, maternal milk plays a role in the etiology of diarrheal diseases. This paper presents information on the popular classification of diarrheal diseases, including the concept of "hot-cold" that is common in Latin American medical beliefs.

- 3983 Johnston, M. MAWAS DIRI: A TOOL TO STIMULATE COMMUNITY PARTICIPATION. Health Policy and Planning, vol.5 no.2, June 1990, pp.161-166.

This article reports on the development of Mawas Diri, a problem-solving tool, by an Indonesian NGO. The tool is

used by village health workers (VHWs) to evaluate the healthiness of homes and the neighborhood. The tool has also proved to be an effective motivational tool for stimulating people to initiate a wide variety of activities aimed at creating a healthier environment and lifestyle.

- 415 Kapil, I. WHEN DOCTORS SELL MEDICATIONS... World Health Forum, vol.11 no.3, 1990, pp.318-322.

In traditional communities, the relationship between patients and traditional healers differs from that of patients and modern doctors. Traditional healers often have deeper personal and social relationships with their patients upon which their fees are based. Modern doctors in traditional communities often sell drugs as opposed to charging a consultation fee in order not to invalidate the personal nature of the consultation. The author discusses how this practice can hinder the rational use of drugs as well as possible ways to address the problem.

- 085 Leal, M.D.C.; Silva, R.I.D.; Gama, S.G.N.D. PERCEPCAO MATERNA DE DESIDRATAÇÃO EM CRIANÇAS COM DIARREIA: ESTUDIO DE CONCORDANCIA COM DIAGNOSTICO MEDICO. Revista de Saude Publica, vol.24 no.3, 1990, pp.196-203.

Mothers' perception of the signs and symptoms of dehydration in children under 3 years of age was studied and compared to the medical classification in a children's hospital in Rio de Janeiro. Mothers with low educational level tended to underestimate the severity of dehydration, while mothers with more education overestimated the degree of dehydration.

- 801 Lomas, J.; Anderson, G.M.; Domnick-Pierre, K. et al. DO PRACTICE GUIDELINES GUIDE PRACTICE? THE EFFECT OF A CONSENSUS STATEMENT ON THE PRACTICE OF PHYSICIANS. New England Journal of Medicine, vol.321 no.19, November 9, 1989, pp.1306-1311.

In order to assess the effect of medical practice guidelines on actual practice, the authors surveyed hospitals and obstetricians in Ontario before and after the release of a widely distributed and nationally endorsed consensus statement which recommended decreased use of cesarean sections. They concluded that guidelines for practice may predispose physicians to consider changing their behavior, but unless there are other incentives or the removal of disincentives, guidelines may be unlikely to effect rapid change in actual practice.

- 4288 McGuire, J.S.; Popkin, B.M. HELPING WOMEN IMPROVE NUTRITION IN THE DEVELOPING WORLD: BEATING THE ZERO-SUM GAME. Washington, D.C., The World Bank, Technical Paper no.115, 1990, 94p.

The purpose of this paper is to link together the existing knowledge about women's work, reproductive roles, and household production to highlight opportunities for helping women improve nutrition. The authors point out the linkages and competition among women's life roles. They highlight the need to give women access to the necessary productive, intellectual and nutritional resources to solve their own problems.

- 4839 Nichter, M. USE OF SOCIAL SCIENCE RESEARCH TO IMPROVE EPIDEMIOLOGIC STUDIES OF AND INTERVENTIONS FOR DIARRHEA AND DYSENTERY. Reviews of Infectious Diseases, vol.13 suppl.4, 1991, pp.S265-S271.

The significance of dysentery has not been recognized in community-based programs for the management of diarrhea. Culturally sensitive methods of classification and algorithms for treatment must be developed. This article considers how ethnographic studies of diarrhea can contribute to descriptive epidemiologic data on diarrhea and dysentery and to procedures of health education and evaluation of interventions for the diseases.

- 4450 Olango, P.; Aboud, F. DETERMINANTS OF MOTHERS' TREATMENT OF DIARRHEA IN RURAL ETHIOPIA. Social Science and Medicine, vol.31 no.1, 1990, pp.1245-1249.

A total of 6414 mothers in a rural Ethiopian district were sampled and interviewed about the presence of under-5 yr children and the prevalence of diarrhea in the previous 2 weeks...A structured questionnaire on home and professional treatment as well as knowledge about diarrhea was completed by the mothers of 619 of these cases. Over 50% of the mothers restricted the child's fluid intake and 70% stopped or decreased food intake; only 20% used ORS or cereal based ORT. The major factor associated with adequate home treatment was the mother's knowledge about the causes and treatment of diarrhea. Only 26.8% of the mothers had sufficient knowledge. [published abstract]

- 4837 Pelto, G. THE ROLE OF BEHAVIORAL RESEARCH IN THE PREVENTION AND MANAGEMENT OF INVASIVE DIARRHEAS. Reviews of Infectious Diseases, vol.13 suppl.4, 1991, pp.S255-S258.

This paper identified areas of research on behavioral factors that would contribute critical information for use in the management and prevention of invasive diarrheas. These include behaviors and associated beliefs and attitudes as they influence treatment in the home; use of health care providers; compliance with treatment regimens; treatment practices of health care providers; and relations between health care providers and patients.

- 4582 Rivero, R.M. LA ENFERMEDAD DE LA DIARREA EN EL AREA ANDINA DOS ESTUDIOS DE CASO: PUYTUCUNI Y PAMPA SOICO. La Paz, Bolivia, CARE/Bolivia, February 1990, 41p.

This anthropological study of two Andean communities focused on perceptions of childhood diseases, especially diarrhea. People believed that diseases were caused by either natural or supernatural forces. Diarrhea believed to be caused naturally was treated in terms of the "hot/cold" aspects of natural phenomena. Diarrhea, a "cold" disease, could be treated by using a "hot" remedy such as tea. Diarrhea caused by supernatural forces had to be treated with rituals that would re-establish the balance between body and soul.

- 4215 Robson, E. MEXICO TAPS COMMUNITY SPIRIT TO EXPAND WATER SUPPLIES. Source, September 1990, pp.4-7.

In Oaxaca State, Mexico, the "tequio" system, an ancient tradition of communal labor, was used to mobilize villagers to expand much needed water supplies and generally revitalize the state's economy. Organization of villagers has resulted in initiating public works projects, increased farming capabilities, and advancement of local businesses.

- 4154 Roy, K.J. LOCAL BELIEFS. Dialogue on Diarrhoea, issue 41, June 1990, p.8, letter.

In this letter to the editor the author comments on local beliefs about the causes of diarrhea in Kerala State, India. He also states that home fluids seem more acceptable in this area than packaged ORS.

- 4827 Scheper-Hughes, N. SOCIAL INDIFFERENCE TO CHILD DEATH. The Lancet, vol.337 no.8750, May 11, 1991, pp.1144-1147.

This article begins with a vignette from northeast Brazil that illustrates the absence of public outrage about the death of children. The author points out that the child survival interventions are sensible, but do nothing to alter

the underlying structural causes of child death. Medicine alone cannot solve the questions posed by child hunger and death.

- 4080 Senturius, E. KANAK--THE PEOPLE OF NEW CALEDONIA STRUGGLE TO HOLD ON TO THEIR CULTURE...AND TO THEIR HEALING TRADITION. Contact, no.115, July 1990, pp.1-11.

The author describes the Kanak people of New Caledonia and their history of traditional healing. The Kanak traditional healing system is described as well as the impact of Western medical practices on this culture. The author also discusses how the Kanak healing tradition is blending with modern methods of disease control and treatment.

- 4606 Sukkary-Stolba, S. ORAL REHYDRATION THERAPY: THE BEHAVIORAL ISSUES. Malibu, CA, International Health and Development Associates for the Agency for International Development, July 1990, 88p.

This monograph synthesizes the qualitative literature about behavioral issues related to ORT use in developing countries. It also attempts to clarify the constraints and opportunities associated with ORT use in various cultural settings and makes recommendations in terms of project design and implementation.

- 4212 Vlassoff, C. BREAKING NEW GROUND. World Health, June-July-August 1990, pp.20-22.

In this article the author gives four examples of tropical disease research and control measures in Tanzania, Venezuela, Burkina Faso, and Brazil where certain techniques were modified to be more locally adaptable. The author points out the importance of considering local perceptions and capabilities when planning health interventions or research activities for a particular community.

EDUCATION AND COMMUNICATIONS

- 1420 Alderslade, R. PUBLIC HEALTH MANAGEMENT IN THE HEALTH-FOR-ALL ERA. World Health Forum, vol.11 no.3, 1990, pp.269-273.

The author discusses public health management in terms of the basic disciplines involved and the types of training required to produce qualified health managers. He states that an increased emphasis on the multidisciplinary approach is needed because currently there is too much focus on efficiency and cost effectiveness without an understanding of how health services affect the total health experience of defined populations.

- 1790 Armstrong, H.C. BREASTFEEDING PROMOTION: TRAINING OF MID-LEVEL AND OUTREACH HEALTH WORKERS. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.91-103.

The International Baby Food Action Network Africa Regional Office (IBFAN Africa) has given thirteen courses in lactation management to subSaharan health workers. The aims of training, the process of running national courses in collaboration with local organizers, and the content of one- to two-week courses are described...Obstacles to training are listed and solutions recommended. [published abstract]

- 1096 Bagchi, K. GUIDELINES FOR THE MANAGEMENT OF NUTRITION PROGRAMMES: A MANUAL FOR NUTRITION OFFICERS. Alexandria, Egypt, World Health Organization, 1990, 165p.

This manual provides guidelines for nutrition program managers in order to assist them with program development, implementation, monitoring, and evaluation. Each chapter focuses on a specific nutrition intervention responsibility and then addresses the related management issues, with emphasis on providing implementation guidelines.

- 1783 Bastien, J.W. THE MAKING OF A COMMUNITY HEALTH WORKER. World Health Forum, vol.11 no.4, 1990, pp.368-372.

In this article the author describes the experiences of a community health worker (CHW) in Sora Sora, Bolivia. The CHW's training as well as his activities in his community, such as providing basic health services and working to improve food production, are discussed. The author concludes that CHWs must be actively involved with the people they serve and share their values in order to successfully integrate modern and traditional methods of

health care and agriculture.

- 4584 Baume, C. THE HEALTHCOM RESURVEY OF ORAL REHYDRATION THERAPY PRACTICES IN HONDURAS. Menlo Park, CA, Applied Communication Technology for The Academy for Educational Development and The Ministry of Health, Honduras, August 1990, 168p.

In this report the author documents the major findings of a resurvey of ORT practices in Honduras following the ORT communications campaigns carried out by the Mass Media and Health Practices Project and the Communication for Child Survival Project. The campaigns achieved high ORS awareness and use rates. Of the children who had diarrhea two weeks prior to the resurvey, 45% were treated with ORS, although many mothers did not prepare the solution correctly. Breastfeeding was also continued in 98% of cases; however, only about one third of children were given increased fluids and normal amounts of food during diarrhea. Also, a large number of cases were treated with drugs (67%). Based on these results several recommendations are outlined to correct these problems and to continue to increase awareness of ORS.

- 4441 Branco, H.C. BREASTFEEDING ON PRIME-TIME IN BRAZIL. Development Communication Report, vol.4 no.71, 1990, pp.4+.

The author describes how mass media, especially prime-time television commercials, were used to educate women about breastfeeding in Brazil during the launching of the National Breastfeeding Program. Radio, print materials, lotteries, competitions, and street animations were also used as part of the campaign.

- 4542 CHILD TO CHILD IN ZAMBIA. Child to Child, 1990, p.3.

This brief article describes the child-to-child programs currently underway in Zambia. Attempts are being made to integrate health education more effectively into school curricula and teachers are being trained to spread the child-to-child approach.

- 4421 Doctor, V.S. ORT IN THE MEDICAL SCHOOLS II. ORT Newsletter, vol.3 no.2, April-June 1990, p.6.

This article briefly discusses the Enhancing the Teaching of ORT in the Medical Schools Project in the Philippines, which

is integrating ORT education into medical school curricula. Although only six schools were involved originally in the project, all the medical schools will be using ORT education in the near future.

- 4506 Dondi, N. KENYA CDD PROGRAMME: FINAL REPORT OF THE COMMUNICATION RESOURCE PERSON. Arlington, VA, Management Sciences for Health, PRITECH Project, ICP 003-KE, October 10, 1990, 12p.

PRITECH's communications consultant in Kenya discusses progress made under the three main objectives of the consultancy from 1987-1989: 1) to generate a plan to integrate communications into the ongoing CDD program; 2) to integrate communications into the program and transfer responsibility for implementation to the districts; and 3) to produce basic materials to support the communications effort. The report also presents planned activities for 1990.

- 3808 Dowling, M.A.C. ASSESSMENT OF NEEDS AND RESOURCES: A FIRST STEP IN PLANNING A NATIONAL HEALTH LEARNING MATERIALS PROJECT. World Health Organization, 1990, 17p.+app.

This document outlines the first two steps in developing health learning materials for use in developing countries. The first step involves identifying the needs of a target population so as to develop culturally relevant materials. The second step focuses on identifying the resources necessary for producing the materials.

- 4330 Emmanuel, M. COMMUNICATING INFORMATION ON HEALTH AND DRUGS. HAI News, no.55, October 1990, pp.1-2+.

This article describes the proceedings of the International Workshop on Consumer Health and Drug Information and Education, which took place in Malaysia in August 1990. The workshop's purpose was to examine how the media could be used to communicate information to parents on child health and the rational use of drugs.

- 3722 Eng, E.; Glik, D.; Parker, K. FOCUS-GROUP METHODS: EFFECTS ON VILLAGE AGENCY COLLABORATION FOR CHILD SURVIVAL. Health Policy and Planning, vol.5 no.1, 1990, pp.67-76.

This paper focuses on the experiences of the Africa Child Survival Initiative--Combating Childhood Communicable Diseases (ASCI-CCCD) project in training Togolese health

workers in focus group research methods. The authors suggest that using the focus group method encourages community competence, which then promotes collaborative program planning by health workers and target villages.

- 4273 Evian, C.R.; Ijsselmuiden, C.B.; Padayachee, G.N. et al. QUANTITATIVE EVALUATION OF AN AIDS EDUCATION POSTER: A RAPID ASSESSMENT METHOD FOR HEALTH EDUCATION MATERIALS. South African Medical Journal, vol.78, November 3, 1990, pp.517-520.

In 1989, the Johannesburg City Health Department developed an AIDS education poster. The poster was formally evaluated before its final production. The methodology used in the evaluation is outlined here. This study highlights the importance of formative evaluation of printed health educational media by a sample of the target audience before production.

- 4116 EXEMPLES DE MATERIELS EDUCATIFS POUR LA LUTTE CONTRE LES MALADIES DIARRHEIQUES EN AFRIQUE. Dakar, ORANA and Dakar, PRITECH/Sahel, January 1990, 79p.

This document contains examples of educational materials on diarrheal diseases and related topics, such as ORT and nutrition, which are being used in Africa. Each illustration is accompanied by a description and source information. There is also a section which discusses the development, testing, and evaluation of new materials.

- 4418 Ferron, C.; Boutonnat, M.; Deschamps, J.P. FILMS ON AIDS. World Health Forum, vol.11 no.3, 1990, pp.293-296.

In 1988 and 1989 approximately 180 people in health, social work, teaching and other related professions assessed 16 French films about AIDS. Their observations are outlined and the elements required in such material are discussed. Among the most important components are providing clear information, precisely targeting an audience, and giving prominence to human and social dimensions.

- 4208 FIGHTING DIARRHOEAL DISEASES. HAI News, no.54, August 1990, p.4.

This news note reports on a one-day workshop, the Role of Mass Media in the Control of Diarrhoeal Disease, which took place in Karachi, Pakistan, in June, 1990. Participants

explored ways to use mass media in educating the public about diarrheal diseases and proper treatment measures.

- 4746 Fryer, M.L. HEALTH EDUCATION THROUGH INTERACTIVE RADIO: A CHILD-TO-CHILD PROJECT IN BOLIVIA. Health Education Quarterly, vol.18 no.1, Spring 1991, pp.65-77.

A radio health education program in Cochabamba, Bolivia targeted fourth and fifth graders to teach them about sanitation, hygiene, ORT and nutrition. Based on the "child-to-child" approach, older children were targeted since many of them care for younger siblings. Teachers reinforced the lessons after each broadcast. An evaluation of the program showed that students achieved significant knowledge gains although greater attention to teacher training was needed.

- 4442 Gleason, G. HOW NIGERIA BUILT CHILD SURVIVAL THEMES INTO NATIONAL TELEVISION. Development Communication Report, vol.4 no.71, 1990, pp.6-7.

In this article the author briefly outlines how the Nigerian Ministry of Health, the Nigerian Television Authority, UNICEF, and the Federal Radio Corporation of Nigeria collaborated to increase the use of mass media to support national primary health care and generate public demand for PHC services.

- 4205 Goodburn, E.; Ebrahim, G.J.; Senapati, S. STRATEGIES EDUCATED MOTHERS USE TO ENSURE THE HEALTH OF THEIR CHILDREN. Journal of Tropical Pediatrics, vol.36 no.5, October 1990, pp.235-239.

This study examines whether educated mothers have different strategies for protecting the health of themselves and their children than uneducated mothers in rural West Bengal. It concludes that educated mothers used strategies significantly more appropriate than uneducated mothers in regard to pregnancy and childbirth, diarrhea, immunization, family planning, and source of treatment.

- 4073 GUIDELINES FOR TRAINING COMMUNITY HEALTH WORKERS IN NUTRITION-- SECOND EDITION. Geneva, The World Health Organization, 1986, 121p.

This document serves as a set of guidelines for trainers who will be teaching community health workers to carry out nutrition activities. It includes a section on improving

trainers' teaching skills as well as modules on assessment of community needs, malnutrition, and diarrhea and nutrition. This manual is meant to be a model upon which local training programs can build.

- 4319 Hopp, J.W. A PERSPECTIVE ON INTERNATIONAL SCHOOL HEALTH EDUCATION RESEARCH. *Journal of School Health*, vol.60 no.7, September 1990, pp.379-382.

School health education stimulates research, either to ascertain the base for curriculum development or to evaluate educational outcomes. In 1987, members of the American School Health Association's Council on International Health explored the scope and content of school health education being conducted outside the U.S. The results of that exploration are reported here.

- 4610 Huffman, S.L.; Combest, C. PROMOTION OF BREASTFEEDING: YES, IT WORKS! Bethesda, MD, Center to Prevent Childhood Malnutrition, nd, 39p.

This document discusses the results of projects in Honduras, Panama, Brazil, Indonesia, and Thailand that promoted breastfeeding. Promotional activities focused on educating health professionals and mothers about the benefits of breastfeeding. The authors also discuss the role of breastfeeding support groups in influencing policy changes, conducting educational efforts, and supporting breastfeeding mothers.

- 4209 THE HUSBAND'S QUESTIONNAIRE IN GHANA AND KENYA. *DHS Newsletter*, vol.3 no.2, Summer 1990, p.9.

This article briefly describes a family planning questionnaire specifically designed for husbands, which was used in demographic health surveys in Ghana and Kenya. The article states that interviewing both men and women permits a more accurate assessment of family planning issues.

- 4150 Kamlongera, C.; Kalipeni, E. A DYNAMIC THEATRICAL GROUP. *African Kora*, vol.2 nos.4-5, July/October 1990, pp.4-5.

This article briefly describes how the Theatre for Development popular theater group educates villagers about common health problems in Malawi.

- 3998 Kane, M. UTILISATION MATERIEL EDUCATIF PAR AGENTS DE SANTE, MALI. Arlington, VA, Management Sciences for Health, PRITECH, RAD 024-SA, December 1989 - May 1990, 22p.

Two previous studies (1988 and 1989) showed that educational materials produced by the PNLMD (National Control of Diarrheal Diseases Program) were being under-utilized by health personnel. This study looks at the reasons behind this under-utilization in terms of health education materials produced by the various programs of the Family Health Division, Ministry of Health.

- 4412 Kannapiran, C. DOCUMENTATION FOR CHANGE. World Health Forum, vol.11, 1990, pp.313-317.

The author discusses the role of health documentation centers, based on experience gained when the Voluntary Health Association of India set up such a center. Suggestions are given for establishing acquisition, cataloging and dissemination policies. A checklist of materials needed is also provided.

- 4486 Kindervatter, S. MAKING TRAINING EFFECTIVE AND EMPOWERING FOR WOMEN. Development Communication Report, no.70, 1990, pp.9-11+.

Based on program experience in Asia, Latin America and Africa, this article discusses what training strategies work particularly well for women, and what factors enable training to make a significant difference in women's lives.

- 3787 Kyenkya-Isabirye, M.; Magalheas, R. THE MOTHERS' SUPPORT GROUP ROLE IN THE HEALTH CARE SYSTEM. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.85-90.

This article describes how mothers' support groups can promote breastfeeding by giving practical information and moral support to new mothers. Such groups can be incorporated into health care systems to fill the need for one-to-one support for breastfeeding mothers. Several operating groups, such as La Leche League International and the Nursing Mothers Association of Australia, are also described.

- 1451 THE LACTATION MANAGEMENT EDUCATION PROGRAM FOR THE PHILIPPINES: ITS CONTRIBUTION TO NATIONAL BREASTFEEDING PROMOTION. San Diego, CA, Wellstart/The San Diego Lactation Program, nd, 17p.+app.

This document describes the Lactation Management Education (LME) Program in the Philippines, which is a component of the national breastfeeding promotion program. The initial phase of the program, administered by Wellstart, sought to train key decision-makers and provider teams in lactation management so that they in turn could promote LME in their own institutions. To date, the LME program has achieved considerable success in national breastfeeding promotion by assisting participating teams to develop training programs and by aiding in development of national breastfeeding promotion plans.

- 4615 Loevinsohn, B.P. HEALTH EDUCATION INTERVENTIONS IN DEVELOPING COUNTRIES: A METHODOLOGICAL REVIEW OF PUBLISHED ARTICLES. International Journal of Epidemiology, vol.19 no.4, 1990, pp.788-794.

Two independent reviewers examined approximately 67 journal articles that described and evaluated health education interventions in developing countries. Of the articles reviewed, 47% provided a sufficiently detailed description of the intervention to allow replication. Based on their findings, the reviewers concluded that successful health education interventions depend on using a few messages of proven benefit and on presenting those messages repeatedly in many forums. The reviewers also make recommendations about how the methodological quality of health education research can be improved.

- 4603 McDowell, J.; McDivitt, J. THE HEALTHCOM RESURVEY OF ORAL REHYDRATION THERAPY PRACTICES IN THE GAMBIA. Menlo Park, CA, Applied Communication Technology for the Academy for Educational Development, December 7, 1990, 80p.

A follow-up survey of knowledge of water-sugar-salt solution (WSS) in the Gambia was conducted in 1987, three years after the end of the Mass Media and Health Practices Project. The overall findings indicated that knowledge gains (i.e., knowledge about how to mix and administer WSS) were somewhat more sustainable than behavior gains (i.e., using WSS at home to treat diarrhea). Reduced access to mixing materials seems to have contributed to the decline in use. The major lessons learned from this project were that WSS use will not automatically become self-propagating and that sustainability cannot be achieved unless local program management is financially and technically supported.

- 4151 Mda, Z. WHEN PEOPLE PLAY PEOPLE. African Kora, vol.2 nos.4-5, July/October 1990, pp.3-4.

The author describes how the Marolothi Travelling Theater group of Lesotho incorporates village health workers into their health education performances in order to encourage community participation.

- 4528 Mirza, N.; Mutie, D. DIARRHOEAL DISEASES CURRICULUM GUIDELINES FOR UNDERGRADUATE MEDICAL STUDENTS AND POST-GRADUATE PAEDIATRIC RESIDENTS. Arlington, VA, Management Sciences for Health, PRITECH Project, SUP 126-KE, December 1990, 44p.

This curriculum was developed for undergraduate physicians in Kenya, as well as for resident pediatric specialists. The aim was to prepare physicians to manage diarrhea cases more effectively. It contains lectures on: management of CDD programs, epidemiology and pathophysiology of diarrheal diseases, clinical syndromes of acute diarrheal diseases, clinical management of acute watery diarrhea, and prevention of diarrhea.

- 4416 Moore, M.B.; Sorensen, M.; Adebajo, C.F. ILLUSTRATED PRINT MATERIALS FOR HEALTH AND FAMILY PLANNING EDUCATION. World Health Forum, vol.11 no.3, 1990, pp.302-307.

Printed materials meant to convey health messages are apt to make a striking and lasting impression on their audience if they are well illustrated...This article will briefly discuss some of [the Program for Appropriate Technology in Health's] experiences in working with local organizations around the world...to develop well-illustrated communication materials that are appropriate for the cultures in which they will be used...PATH found that the best way of ensuring that illustrations will be understood and accepted is to develop them with the help of representatives of the target audience. [published abstract]

- 3780 Naylor, A. PROFESSIONAL EDUCATION AND TRAINING FOR TRAINERS. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.25-27.

The author describes the Wellstart education program which trains physician-nurse teams from teaching hospitals in developing countries in lactation physiology and breastfeeding management. To date the program has trained 64 teams who have in turn taught others in their own countries.

- 4072 NUTRITION LEARNING PACKAGES. Geneva, The World Health Organization, 1989, 170p.

This document consists of materials designed to help community health workers develop the skills needed to teach nutrition at the community level. It is designed for use with the publication "Guidelines for Training Community Health Workers in Nutrition" (WHO, 1986, 2nd edition). The materials include, for example, information sheets on various nutrition-related topics, question-and-answer sheets, and ideas for role-plays and demonstrations.

- 3791 Parlato, M.B. THE USE OF MASS MEDIA TO PROMOTE BREASTFEEDING. International Journal of Gynecology and Obstetrics, vol.31 suppl.1, 1990, pp.105-110.

The author discusses four major problems which currently hinder breastfeeding promotion: (1) the decline in funding for campaigns; (2) failure to use mass media; (3) lack of program evaluation; and (4) vague messages. Use of social marketing to make promotion more consumer oriented and incorporation of breastfeeding messages into other health programs, such as family planning and ORT, are presented as ways to address the problems.

- 4178 Parlato, R.; Rosenbaum, J.; Mora, J. SAVE THE CHILDREN CHILD SURVIVAL PROJECT: COMMUNICATION NEEDS ASSESSMENT. Washington, D.C., Nutrition Communication Project, The Academy for Educational Development, September 5-15, 1989, 11p.+app.

This report presents the results of a communications needs assessment for the Dominican Republic's child survival activities coordinated by Save the Children Federation. CARE's activities within this structure are also reviewed. The authors make recommendations for developing a communications strategy and discuss the technical assistance required to execute a communication program.

- 4609 PATH/Jakarta. COMMERCIAL SECTOR ORS PROJECT: KEY RESEARCH FINDINGS AND RECOMMENDATIONS FOR DEVELOPMENT OF A STRATEGY FOR SOCIAL MARKETING OF CHILD SURVIVAL CONCEPTS IN INDONESIA. Arlington, VA, Management Sciences for Health, PRITECH, SUP 014-IN, January 1991, 18p.+app.

After conducting a knowledge-attitudes-practices survey of Indonesian mothers of under-fives on ORT, PATH/Jakarta concluded that a large gap exists between knowledge of ORT

and actual use. This report identifies the reasons for low ORT usage and recommends a communications strategy for the future.

- 1999 Plopper, S. ASSISTANCE TO THE FAMILY HEALTH DIVISION WITH TRAINING OF TRAINERS\SUPERVISION AND EVALUATION WORKSHOPS, MALI. Arlington, VA, Management Sciences for Health, PRITECH, HSS 084-MA, March 5 - April 21, 1990, 10p.

The consultant and three Malian co-trainers conducted two workshops for central and regional level Division of Family Health personnel. The first was a three-week training designed to prepare personnel to train MCH\FP (Maternal and Child Health\Family Planning) staff at the "cercle" and "arrondissement" levels. The second was a two-week training which prepared personnel to supervise and evaluate MCH\FP services at the regional, "cercle," and "arrondissement" levels.

- 4586 PRE-TEST OF TELEVISION SPOTS ABOUT ORAL REHYDRATION THERAPY. Arlington, VA, Management Sciences for Health, PRITECH Project, LCP 020-PA, January 1991, 39p.+app.

The Pakistan National Institute of Health requested assistance from the PRITECH Project in the production and pre-testing of TV spots for the CDD program. Results of two rounds of pre-testing are reported on in this document. The methodology used was qualitative pre-testing with the purpose of incorporating feedback from representatives of the target audience.

- 4660 QUICK BIBLIOGRAPHIC SEARCH THROUGH CD-ROMS AT ICDDR,B. Glimpse, vol.12 no.6, November-December 1990, pp.1+.

With assistance from the Swiss Development Cooperation, the Information Services Centre at the International Centre for Diarrhoeal Diseases Research, Bangladesh (ICDDR,B) has been equipped with CD-ROM technology. This article briefly reports on how this technology works and how ICDDR,B has been using it for quicker, easier literature searches.

- 4627 Rasmuson, M. SUSTAINING EPI: WHAT CAN COMMUNICATION DO? Paper prepared for the 1990 Global Advisory Group Meeting of the WHO Expanded Programme on Immunization, Cairo, Egypt, October 14-18, 1990, 12p.+app.

In this paper the author discusses how health communications can contribute to the sustainability of EPI programs and

makes recommendations to EPI managers in terms of strengthening and sustaining their communication capacity. The emphasis of the paper is on moving beyond consumer demand creation to using communication to sustain appropriate immunization behavior among both consumers and providers.

- 4643 Robson, E. THE CURATIVE POWER OF EGYPTIAN TV. Source, March 1991, pp.6-8.

In 1983, the Ministry of Health began airing messages about ORT on Egyptian TV. Results were stunning: surveys conducted in 1987 showed that 80% of Egyptian mothers could explain how and when to correctly administer ORT. This article describes the content of the TV messages.

- 4655 Robson, E. HEALTH ON SCREEN IN MALI. Source, March 1991, pp.12-15.

A health education program in Mali is using videos made by trained country nationals to promote good health and hygiene habits. Once the videos are completed the film makers spend time in the field showing the videos and teaching people about the films' messages. Two examples of such videos are one which shows how to decontaminate water and another which explains the use of ORT for diarrhea.

- 4656 Robson, E. SKETCHING A BETTER LIFE IN URBAN PERU. Source, March 1991, pp.9-11.

This article reports on how the people of Canto Grande, a shanty town in Lima, Peru, are being taught good hygiene habits. Health workers use drawings that reflect the people's aspirations in terms of living conditions to encourage them to start good habits such as washing hands more frequently and using soap regularly.

- 4060 Ruel, M.T.; Pelletier, D.L.; Habicht, J.-P. et al. COMPARISON OF MOTHERS' UNDERSTANDING OF TWO CHILD GROWTH CHARTS IN LESOTHO. Bulletin of the World Health Organization, vol.68 no.4, 1990, pp.483-491.

This study compared mothers' understanding of two growth charts, "road-to-health" and "growth surveillance," in Lesotho. Results showed that mothers who received instruction on either chart had significantly better understanding than those who received no training. In

addition, mothers using the "road-to-health" understood their chart better than those using the "growth surveillance" did theirs.

- 138 Shipp, P.; Lebow, R.H. THE STRENGTHENING OF PUBLIC HEALTH TRAINING FOR MIDDLE LEVEL HEALTH MANAGERS IN NEPAL. Arlington, VA, Management Sciences for Health, PRITECH, HSS 085-NE, March -April, 1990, 17p.

Decentralization and regionalization of all government services in Nepal have created increasing numbers of officials whose responsibilities include significant public health management functions. However, very few of these individuals have had formal public health training. The authors present their assessment of the training needs and recommendations for meeting these needs.

- 4695 Shoham-Yakubovich, I.; Pliskin, J.S.; Carr, D. THE IMPACT OF A HEALTH EDUCATION COURSE ON MATERNAL KNOWLEDGE: A COMPARATIVE STUDY IN A LOW SOCIOECONOMIC RURAL REGION. Health Education Quarterly, vol.18 no.1, Spring 1991, pp.145-150.

In order to assess the impact of a health education course on maternal knowledge, a comparative study was carried out in a low socioeconomic, rural region in the West Bank. Following a course on nutrition, hygiene, child development, and first aid 241 participants and 284 non-participants were interviewed to determine their knowledge of course topics. As expected, participants had higher knowledge levels than non-participants. Course participation and level of maternal formal education were the two most significant predictors of knowledge.

- 4417 Silayan-Go, A. ENTERTAINMENT FOR HEALTH. World Health Forum, vol.11 no.3, 1990, pp.297-301.

This article reviews a pilot project in the Philippines which used popular music to educate teenagers about family planning. The implementation of the campaign as well as the results of follow-up surveys are presented. The campaign demonstrated that entertainment media can be a valuable and effective component of a health education program.

- 3795 Smith, W.A. LIFESTYLES FOR SURVIVAL: THE ROLE OF SOCIAL MARKETING IN MASS EDUCATION. Washington, D.C., The Academy for Educational Development, October 1989, 27p.

This document examines the evolution of social marketing as an educational tool and presents illustrations of successful campaigns. It also outlines 5 key elements of a successful social marketing campaign as well as discussing 5 main ideas which should be considered in planning a mass education strategy.

- 3820 Sobti, J.C. EXPERIENCE IN REORIENTING 30,000 DOCTORS IN THE APPROPRIATE MANAGEMENT OF DIARRHOEA BY INDIAN MEDICAL ASSOCIATION. New Delhi, India, Indian Medical Association, nd, 4p.

This paper describes the various steps, activities, and achievements of the Indian Medical Association in training its members in proper diarrhea management and use of ORT. By August 30, 1989, 1,078 meetings had been held and 29,821 doctors had been trained. The program was the result of collaborative efforts by the Indian Medical Association, the Indian Ministry of Health and Family Welfare, and UNICEF.

- 4299 Sutisnaputra, O.M.; Sulaeiman, N.S.; Woerjandari, A. et al. THE DEVELOPMENT OF COUNSELING CARDS FOR COMMUNITY HEALTH WORKERS AS AN AID TO TEACHING MOTHERS PROPER DIARRHEAL CASE MANAGEMENT IN WEST JAVA PROVINCE, INDONESIA. Washington, D.C., Academy for Educational Development, HealthCom Project, nd, 12p.+app, field note.

This field note describes the process of developing counseling cards for community health workers to use in teaching mothers proper diarrheal disease management in West Java, Indonesia. The counseling cards are a useful, understandable device for CHWs to aid them in talking with mothers about their children's diarrhea.

- 4439 Theisen, G. SOCIAL MARKETING AND BASIC EDUCATION. Development Communication Report, no.69, 1990, pp.6+.

The author explains how appropriately designed social marketing campaigns aimed at parents of school-age children can have a marked effect on student enrollment and performance.

- 4214 Vajrathon, M. COMMUNICATING WITH WOMEN. Development Communication Report, no.70, 1990, pp.1-3.

The author explains why it is important for development communicators to think about women. She then explores the

question of why Third World women have less access to information than do men.

- 1100 Videlier, P.; Piras, P. HEALTH IN STRIP CARTOONS. World Health Forum, vol.11 no.1, 1990, pp.14-31.

In this article the author discusses how strip cartoons are used to convey health education messages. He examines the cultural implications of using this medium and presents examples of how it has been used to date.

- 1143 Viswanathan, H. SOCIAL MARKETING AND DIARRHEAL DISEASES. Current Science, vol.59 nos.13 and 14, July 1990, pp.710-713.

The Indian Market Research Bureau recently carried out a nationwide survey of mothers' knowledge, attitudes, and practices in regard to diarrheal disease in India. This article describes the results of the survey and shows how the results were used to change the direction of the National Diarrhoea Management Programme.

- 1662 VIVA CONCLUDES IN NORTHEASTERN BRAZIL. HOPE News, vol.29 no.1, 1991, pp.2-3.

This brief article reports on the VIVA program which was conducted in Brazil by Project HOPE. VIVA worked with traditional healers and volunteer health workers to bring primary health care to rural areas of northeastern Brazil. Those trained by VIVA promoted breastfeeding, growth monitoring, and immunization as well as teaching mothers to use ORT. By the program's end in 1990 infant mortality was reduced by more than one third in the area.

- 1234 Wallack, L. TWO APPROACHES TO HEALTH PROMOTION IN THE MASS MEDIA. World Health Forum, vol.11 no.2, 1990, pp.143-154.

This article concentrates on two strategies for health promotion in the mass media: social marketing aims to influence people's behavior, media advocacy to influence their environment. The author argues that greater weight should be given to media advocacy than to social marketing so as to achieve an improved understanding of the conditions required for health. [published abstract]

- 4222 "WE HAVE DONE IT OURSELVES!"--A COMMUNITY-BASED HEALTH CARE PROGRAMME IN THE MACHAKOS DISTRICT OF KENYA. Contact, no.116, September 1990, pp.1-15.

This article reviews a community-based approach used in the Machakos District in Kenya to train health workers through participatory learning. The approach also encouraged community participation to ensure sustainability. A profile of the Machakos District is presented as well as the process by which the program was implemented.

- 4777 Welsby, S. PAKISTAN DIARRHOEA TRAINING UNIT PROGRAMME TRAINERS' GUIDE AND TRAINING MATERIALS, VOLUME I AND II. Arlington, VA, Management Sciences for Health, PRITECH, SUP 044-PA and SUP 075-PA, February 1991, 42p.+app.

In 1989, the Pakistan CDD Program established diarrhea training units at 10 major teaching hospitals. These DTUs provide model diarrhea management on both an inpatient and an outpatient basis. This report contains the trainer's guide and training materials for health worker training at the DTUs.

- 4644 Yacoob, M. WHAT MAKES HYGIENE EDUCATION WORK? Source, March 1991, p.2+.

The author suggests that hygiene education is not effective unless it is accompanied by efforts to upgrade community facilities or to ensure better use of existing facilities. In addition, government sanitation workers need training in communication skills.

- 3768 Zimmerman, M.; Newton, N.; Frumin, L. et al. DEVELOPING HEALTH AND FAMILY PLANNING PRINT MATERIALS FOR LOW-LITERATE AUDIENCES: A GUIDE. Washington, D.C., Program for Appropriate Technology in Health, 1989, 64p.

This manual presents guidelines for developing health and family planning print materials for illiterate and low-literate populations. Special emphasis is given to tailoring materials to meet specific needs of target audiences; producing and distributing materials including pretesting, revision, and printing; training health workers to effectively use the materials; and evaluating the impact of the materials.

ECONOMIC ASPECTS (of Control and Prevention)

- 4478 Bossert, T.; Godiksen, L.; Bostrom, E. et al. SUSTAINABILITY OF U.S.-SUPPORTED HEALTH, POPULATION AND NUTRITION PROJECTS IN GUATEMALA: 1942-1987. Washington, D.C., U.S. Agency for International Development, September 1990, 47p.+app.

This report presents a comparative historical analysis of the sustainability of U.S.-supported health projects in Guatemala from 1942-1987. The authors discuss the project characteristics and the contextual factors which contributed most to project continuation and review important criteria needed to assure sustainability. These criteria include: 1) incorporating national priorities and involvement in project design; 2) building counterpart capacity with strong technical training and assistance; 3) designing funding mechanisms to encourage national absorption of project costs; and 4) integrating project activities into implementing agencies and enhancing these agencies' administrative effectiveness.

- 3932 Bossert, T.J. CAN THEY GET ALONG WITHOUT US? SUSTAINABILITY OF DONOR-SUPPORTED HEALTH PROJECTS IN CENTRAL AMERICA AND AFRICA. Social Science and Medicine, vol.30 no.9, 1990, pp.1015-1023.

This article presents a synthesis of five country studies of the sustainability of U.S. government funded health projects in Central America and Africa...This review found that health projects in Africa were less firmly sustained than those in Central America. The studies then evaluated context factors and project characteristics that were related to the sustainability of the projects. [published abstract]

- 4148 Brenzel, L. THE COSTS OF EPI: LESSONS LEARNED FROM COST AND COST-EFFECTIVENESS STUDIES OF IMMUNIZATION PROGRAMS. Arlington, VA, REACH Project, John Snow, Inc., September 1990, 89p.

This document reviews cost and cost-effectiveness studies of immunization programs and is aimed primarily towards field officers and national EPI managers. It also provides methodological guidelines for conducting field studies as well as suggestions for further studying immunization program costs. The methodologies presented could be applied to other health and child survival interventions.

- 4243 Brooks, D. BEYOND CATCH PHRASES: WHAT DOES SUSTAINABLE DEVELOPMENT REALLY MEAN? IDRC Reports, vol.18 no.4, October 1990, pp.24-25.

The inability to understand what sustainable development means has led to its mistaken acceptance by many organizations. Here the author discusses the various definitions of sustainability and their implications for programs.

- 4702 Chabot, J.; Boal, M.; Da Silva, A. NATIONAL COMMUNITY HEALTH INSURANCE AT VILLAGE LEVEL: THE CASE FROM GUINEA BISSAU. Health Policy and Planning, vol.6 no.1, 1991, pp.46-54.

The authors describe a successful collective payment scheme for health services in Guinea Bissau which developed at the village level over the last 10 years. The keys to success are two-fold: 1) the village population is allowed to decide on the amount of money and method of collection and 2) the government supports the scheme by guaranteeing sufficient drugs, low prices, effective control measures and a health worker who is part of the national referral system. The advantages and disadvantages of this program are presented and the possibilities for using such a system in other countries are discussed.

- 4553 COST SHARING: KENYA TRIES AGAIN BUT UGANDA LOOKS FOR NEW WAYS TO BOOST RESOURCES. Africa Health, vol.13 no.2, January 1991, p.3.

This news note briefly discusses the Kenyan and Ugandan governments' plans to introduce new cost sharing plans for health care.

- 4093 COST-EFFECTIVE ANALYSIS OF ORAL REHYDRATION THERAPY. Weekly Epidemiological Record, no.36, September 7, 1990, pp.275-279.

In Lesotho a study was conducted to compare the cost-effectiveness of diarrheal disease treatment for children under 5 years of age at Queen Elizabeth II Hospital 1 year prior to the establishment of the ORTU Oral Rehydration Therapy Unit and 1 year after the establishment of the ORTU. Data showed that diarrhea-related admissions as well as the average duration of stay decreased after establishment of the ORTU. Because the savings due to decreased admissions was greater than the cost of establishing and maintaining the unit, the ORTU was considered cost-effective.

- 4611 Creese, A.; Parker, D. COST ANALYSIS IN PRIMARY HEALTH CARE: A TRAINING MANUAL FOR PROGRAMME MANAGERS. Geneva, World Health Organization, 1990, 138p.

This manual is designed to illustrate how one essential tool of resource management--cost analysis--may be employed by programme managers to answer basic questions about the efficiency, equity and sustainability of the health activities for which they are responsible...The manual consists of three general parts with a total of twelve modules...["Part A" discusses] financial costs and also provides a first look at effectiveness of health services. "Part B" broadens the coverage in terms of costs covered, and brings together costs and effectiveness estimates in cost-effectiveness analysis. In "Part C", several important uses of cost and cost-effectiveness data for planning and management are discussed and illustrated. At the end is a set of exercises to be used with the individual modules.
[published abstract]

- 4213 Crumley, J. ROSKENS PROMOTES HEALTH COLLABORATIONS. Frontlines, vol.30 no.5, July 1990, p.10.

At the June 19, 1990 meeting of the National Council of International Health, USAID Administrator Ronald Roskens emphasized the need for collaboration among governments, PVOs, and the public and private sectors in order to further child survival efforts. As an example of fruitful collaboration, he cited the Soloshot syringe, which was developed by the Program for Appropriate Technology in Health in cooperation with AID, in order to protect patients and health workers from contaminated needles.

- 4687 Dave, P. COMMUNITY AND SELF-FINANCING IN VOLUNTARY HEALTH PROGRAMMES IN INDIA. Health Policy and Planning, vol.6 no.1, 1991, pp.20-31.

This paper describes the health financing experiences of 12 voluntary organizations in India. Community and self-financing methods are described, and then evaluated on the basis of three criteria: yield, equity, and risks shared in prepayment/insurance schemes. The survey shows that India's voluntary sector demonstrates much experimentation and innovation with community and self-financing methods, including user charges, community-based prepayment schemes, fund raising, commercial schemes, and in-kind contributions. There is mixed success with financing efforts...It is noted that these financing methods can be further strengthened with better planning, management, monitoring and evaluation.
[published abstract]

- 3976 Diarra, K.; Coulibali, S. FINANCING OF RECURRENT COSTS IN MALI. Health Policy and Planning, vol.5 no.2, 1990, pp.126-138.

After presenting general information on the Malian health system, the authors present trends in health system financing, composition of recurrent expenditures in public health facilities, and distribution of recurrent and investment expenditures between national and foreign funding. They then examine household expenditures on health services such as traditional healing, drugs, private fees and health-related transport. They conclude with a discussion of proposals to solve the recurrent cost financing problem.

- 4485 THE ECONOMIC VALUE OF BREASTFEEDING: FOUR PERSPECTIVES FOR POLICYMAKERS. Bethesda, MD, Center to Prevent Childhood Malnutrition for the Social Sector Policy Analysis Project, September 1990, 16p.

This booklet discusses breastfeeding as an economic resource. The costs, in terms of time, materials, and health effects, of breastfeeding and bottle feeding are summarized from four developing country perspectives: national, public sector, hospitals, and households. The booklet is intended to introduce the economic aspects of breastfeeding to policy makers.

- 3917 Ekwempu, C.C.; Maine, D.; Olorukoba, M.B. et al. STRUCTURAL ADJUSTMENT AND HEALTH IN AFRICA. The Lancet, vol.336 no.8706, July 7, 1990, pp.56-57, letter.

The authors of this letter to the editor comment on a previous Lancet editorial which discussed structural adjustment and health in Africa (The Lancet, vol.335 no.8694, April 14, 1990, pp.885-886). They point out that maternal mortality was not used as an indicator to measure social and economic development.

- 4184 Konan, M. SESAME CULTIVATION BOLSTERS GAMBIAN ECONOMY, HEALTH. Frontlines, September 1990, pp.6-7.

The author describes how sesame seed cultivation in the Gambia has improved the economic as well as the nutritional status of the population. In addition, the article mentions how the Gambians are using sesame seed to make new weaning foods that are palatable and easy to prepare.

- 430 Konan, M.A. DEVELOPMENT ASSISTANCE TO REDUCE POVERTY: DEFINING AND MEASURING PROGRESS. Social Sector Policy Analysis Project, The Academy for Educational Development, January 1991, 23p.

This document examines how poverty can be defined, measured, and understood by using various data collection and analysis methods. The author also discusses the factors which create conditions for change and the role of governments and donors in facilitating these changes. Several aspects of poverty reduction, including labor-intensive economic growth, income transfers, and improved natural resources management are also outlined.

- 4757 Levine, R.E.; Huffman, S.L. THE ECONOMIC VALUE OF BREASTFEEDING: THE NATIONAL, PUBLIC SECTOR, HOSPITAL, AND HOUSEHOLD LEVELS -- A REVIEW OF THE LITERATURE. Bethesda, MD, Center to Prevent Childhood Malnutrition, October 1990, 32p.+app.

In this review the authors discuss the economic value of breastfeeding in developing countries, the relationship between infant feeding practices and infectious disease morbidity and mortality, and the factors thought to be responsible for changes in breastfeeding patterns. The costs and benefits of breastfeeding are reviewed with respect to four levels: the national level, the public sector, hospitals, and households.

- 4227 Linsley, C. FINANCING STRATEGIES IMPROVE HEALTH CARE. Frontlines, August 1990, p.8.

This article reports on the use of several cost-recovery mechanisms which were implemented in the Garango area of Burkina Faso in order to improve health care services. Among the methods tried were revolving drug funds and patient fees for lab tests, hospitalization, and maternity services. Health committees were organized to manage the resources and finances of health centers and to facilitate health worker and pharmacist training. As a result, access to pharmacies has increased as has the use of maternal and child health services.

- 4684 Litvack, J. HOSPITAL COST ANALYSIS: ALLOCATING PHARMACEUTICAL EXPENDITURES IN PAPUA NEW GUINEA. Health Policy and Planning, vol.6 no.1, 1991, pp.71-77.

Due to the inadequacy of existing financial cost-accounting study methods for hospital drug expenditures, more effective

methods were needed. This paper outlines two new methods developed in Papua New Guinea which allocate total expenditures based on the number of out-patient visits and in-patient discharges at a particular hospital. Study results can be used to modify pricing strategies and improve inventory management.

- 3927 Logan, D.; Friedman, M.; Lown, M. MOBILIZING THE RESOURCES OF THE FOR-PROFIT SECTOR TO SUPPORT THE EXPANSION OF FAMILY PLANNING SERVICES IN THE DEVELOPING WORLD. Arlington, VA, Population Technical Assistance Project for The Agency for International Development, December 1989, 35p.+app.

The major objective of this paper is to provide A.I.D. with a clear map of the for-profit sector to define the total market and show how it might be broken into manageable segments as the basis for project activity. Using a market approach, the paper has grouped corporate collaborators according to their possible motives for taking an active interest in family planning issues. [published abstract]

- 4759 Meyers, A.; Siegel, B.; Vinci, R. ECONOMIC BARRIERS TO THE USE OF ORAL REHYDRATION THERAPY: A CASE REPORT. Journal of the American Medical Association, vol.265 no.13, April 13, 1991, pp.1724-1725.

The authors report a death due to hypernatremic dehydration caused by rotavirus diarrhea of a 9-month-old infant in the U.S. whose mother attempted to purchase ORS at a pharmacy but was unable to afford it. While efforts such as the National ORT Project should help to promote proper home treatment of diarrhea, ORT will not be used optimally by the parents of children living in poverty until the economic barriers to its use are removed.

- 3846 Mills, A. THE ECONOMICS OF HOSPITALS IN DEVELOPING COUNTRIES: PART I: EXPENDITURE PATTERNS. Health Policy and Planning, vol.5 no.2, June 1990, pp.107-117.

This paper presents the currently available data on the financing and economics of hospitals in developing countries. Part I first discusses some of the problems of data availability and comparability, and then reviews data on the hospital share of health sector resources, the extent to which hospital expenditure is distributed equitably, and whether the hospital share of expenditures has been changing over time. [published abstract]

- 846 Pangu, K.A.; Van Lerberghe, W. SELF-FINANCING AND SELF-MANAGEMENT OF BASIC HEALTH SERVICES. World Health Forum, vol.11 no.4, 1990, pp.451-454.

In Zaire's Kasongo district an effort is being made by the community to reduce costs and increase income for the health centres. Decisions on improvements in the running of the centres are partly based on analyses of their utilization. [published abstract]

- 044 PVO STRATEGIES FOR SUSTAINABILITY. PVO Child Survival Technical Report, vol.1 no.3, July 1990, pp.1-3.

This article briefly summarizes the results of efforts at program sustainability used by some PVOs. These strategies include using various funding mechanisms, encouraging community participation, collaborating with the ministries of health, and entering into partnerships with local non-governmental organizations.

- 3877 Quinn, V.; Chiligo, M.; Gittinger, J.P. MALNUTRITION, HOUSEHOLD INCOME AND FOOD SECURITY IN RURAL MALAWI. Health Policy and Planning, vol.5 no.2, June 1990, pp.139-148.

This article analyzes the problems of childhood malnutrition and mortality within a conceptual framework that identifies the key determinants which influence the survival and development of children. It concludes that long-term structural causes, such as household food and economic insecurity, must be addressed to eradicate child malnutrition and mortality in Malawi.

- 1608 Sallet, J.-P. EVALUATION DE LA MISE EN OEUVRE DE L'INITIATIVE DE BAMAKO AU SENEGAL. Arlington, VA, Management Sciences for Health, PRITECH, HSS 088-SE, December 1990, 41p.+app.

This report summarizes a study of the feasibility of implementing the Bamako Initiative in Senegal. It describes how the study was carried out, the findings, and the subsequent recommendations for action if the Initiative is to be used successfully to improve the quality of life in Senegal.

- 3945 Stanton, B.; Clemens, J. USER FEES FOR HEALTH CARE IN DEVELOPING COUNTRIES: A CASE STUDY OF BANGLADESH. Social Science and Medicine, vol.29 no.10, 1989, pp.1199-1205.

This paper examines the possible impact of user fees on the health of individuals living in Bangladesh. The authors note that the existing government health care system provides care to two of the most medically vulnerable groups in Bangladesh--the poor and women--and provide evidence that such fees may interfere with maintaining this patient profile. They also discuss the significant public health role that curative care provides for the individuals, their families, and the wider community.

- 4253 Unger, J.-P.; Mbaye, A.; Diao, M. FROM BAMAKO TO KOLDA: A CASE STUDY OF MEDICINES AND THE FINANCING OF DISTRICT HEALTH SERVICES. *Health Policy and Planning*, vol.5 no.4, 1990, pp.367-377.

The authors express concern that the conception of the Bamako Initiative was based on the over-hasty generalization of two small projects. They describe a successful experiment in Kolda district, Senegal to change the pattern of underutilization of health services by rationalizing the mechanisms for financing services and supplies of pharmaceuticals.

- 3939 Waddington, C.J.; Enyimayew, K.A. A PRICE TO PAY: THE IMPACT OF USER CHARGES IN ASHANTI-AKIM DISTRICT, GHANA. *International Journal of Health Planning and Management*, vol.4, 1989, pp.17-47.

This paper examines the effect of health service user charges on service utilization in the Ashanti-Akim district of Ghana since the introduction of such charges in 1985. The charges have been successful in the areas of cost recovery and maintenance of urban utilization. However, creating an equitable and affordable system has posed problems since the services are no longer affordable for

CDD (Control of Diarrheal Diseases) POLICIES AND PROGRAMS

- 4714 ANALYSING SUSTAINABILITY. *Development Journal*, issue 3, 1990, pp.28-31.

This article discusses factors that have the greatest influence on project sustainability based on an evaluation of World Bank projects. Among the main factors were: 1) developing institutional capacity; 2) encouraging good management; 3) mobilizing financial resources after donor funding ends; 4) maintaining borrower and government commitment; and 5) creating a clearly defined national development strategy.

- 4699 Babaniyi, O.A. ORAL REHYDRATION OF CHILDREN WITH DIARRHOEA IN NIGERIA: 12-YEAR REVIEW OF IMPACT ON MORBIDITY AND MORTALITY FROM DIARRHOEAL DISEASES AND DIARRHOEAL TREATMENT PRACTICES. *Journal of Tropical Pediatrics*, vol.37 no.2, April 1991, pp.57-63.

In this paper the author presents an overview of the impact of the CDD program in Nigeria on diarrheal incidence and treatment practices from 1978-1989. Data showed that dysentery morbidity has declined since 1982 but cholera, typhoid and paratyphoid incidence have all been increasing since 1982. Community-based CDD survey data only indicated minimal impact on diarrheal incidence and treatment practices from 1986 to 1989. The author emphasizes the difficulty of evaluating the impact of CDD programs and points out various constraints to program success in Nigeria. Among the main problems identified were insufficient ORS use in health facilities and low sugar-salt solution use in the home; inappropriate community treatment; and incorrect ORS and SSS preparation by mothers and health workers. Some recommendations to improve program effectiveness are also presented.

- 4918 THE CHILD SURVIVAL PROGRAM OF A.I.D. IS... *Grassroots*, vol.9 no.2, June 1990, p.1+.

The accomplishments of the USAID Child Survival Program are briefly outlined in this article. One of the achievements noted was that 58 countries are now producing oral rehydration salts.

- 4903 Claeson, M.; Merson, M. GLOBAL PROGRESS IN THE CONTROL OF DIARRHEAL DISEASES. *Pediatric Infectious Disease Journal*, vol.9 no.5, May 1990, pp.345-355.

The authors discuss worldwide progress in controlling diarrheal diseases. The issues discussed include etiology and epidemiology; case management and the use of ORT; acute and persistent diarrhea; the role of food and fluid; home treatment; anti-diarrheal drugs; preventive strategies; and indicators and impact of diarrheal disease control programs. They conclude that success in the control of diarrheal diseases will depend on the capacity of national CDD programs to implement correct case management and preventive strategies.

- 4127 Cliff, J.; Cutts, F.; Waldman, R. USING SURVEYS IN MOZAMBIQUE FOR EVALUATION OF DIARRHOEAL DISEASE CONTROL. Health Policy and Planning, vol.5 no.3, 1990, pp.219-225.

This paper examines the impact of various surveys on Mozambique's National CDD program, formulates a plan for future use of surveys in program evaluation, and discusses the wider issues of the use of surveys in evaluation.

- 3842 Coulibaly, M. PROGRAMME NATIONAL DE LUTTE CONTRE LES MALADIES DIARRHEIQUES DU NIGER: ETUDE DE LA PRISE EN CHARGE DE CAS DE DIARRHEE DANS LES STRUCTURES DE SANTE. Arlington, VA, Management Sciences for Health, PRITECH, SUP 033-NG, 43p.+app.

Four areas were included in this evaluation of Niger's CDD program: health worker training in ORT; diarrhea case management in the health centers; ORS packet availability and use; and mothers' degree of knowledge about ORT. The study was carried out in three departments and one urban community (Niamey).

- 4051 DIARRHOEAL DISEASES CONTROL PROGRAMME, GLOBAL ACTIVITIES, 1988-1989. Weekly Epidemiological Record, vol.65 no.38, September 21, 1990, pp.289-292.

In 1989, the WHO Diarrhoeal Diseases Control (CDD) Programme completed the first 10 years of its activity. Its achievements to date in support of national CDD programs and research activities are described in the Seventh Programme Report, 1988-1989 and are summarized in this article.

- 4092 Dichter, P.; White, M.; Johnson, P. et al. CHILD SURVIVAL IN INDONESIA. Washington, D.C., Agency for International Development, June 1990, 31p.

This document reviews various Indonesian child survival programs and their impact on the health system, on efficiency of health services, and on infant and child mortality. The programs examined include family planning, nutrition, EPI, and CDD. Data indicate that these activities have achieved significant positive results, although it is difficult to attribute specific gains to specific interventions. Based on program results, the evaluation team recommended continuance of AID support to these projects.

- 4136 Fields, R.; Burdman, G. TRIP REPORT: INTERNATIONAL SYMPOSIUM ON FOOD-BASED ORAL REHYDRATION THERAPY, KARACHI, PAKISTAN. Arlington, VA, Management Sciences for Health, PRITECH, CON 008-PA, November 12-14, 1989, 13p.+app.

This report summarizes the proceedings, discussions, and recommendations of the "Symposium on Improved Oral Rehydration Therapy in Practice in the Home and in the Community," held November 12-14, 1989 at Aga Khan University in Karachi. One of the conference presentations, "Food-based ORT - Management Considerations," by Jon Rohde, is included in the appendices.

- 4697 Freund, P.J. TEACHING MOTHERS TO HEAL: THE ORS EXPERIENCE IN ZAMBIA. Paper presented at the workshop on Policy Planning, Clinical and Economic Issues in Strengthening District Health Management in Primary Health Care in Zambia, December 10-12, 1990, 9p.

In this paper the author reviews the problem of diarrhea in Zambia and then outlines components of the national CDD program. Among the components reviewed are health worker training and supervision, ORS production and distribution, social mobilization, and program integration. Convincing health workers and mothers about the effectiveness of ORS and providing adequate ORS supplies are cited as keys to program success.

- 4128 Henry, F.; Briend, A.; Fauveau, V. CHILD SURVIVAL: SHOULD THE STRATEGY BE REDESIGNED? EXPERIENCE FROM BANGLADESH. Health Policy and Planning, vol.5 no.3, 1990, pp.226-234.

This paper highlights findings from several recent studies which could improve the design of child survival strategies in Bangladesh and elsewhere. Specific components of child survival, including ORT/CDD, growth monitoring, breastfeeding, and EPI are assessed. A shift in emphasis of the child survival strategy is recommended.

- 4135 Herman, E. REPORT OF WORKSHOP ON HOME AVAILABLE FLUIDS STRATEGIES AND RESEARCH. Arlington, VA, Management Sciences for Health, PRITECH, SUP 092-PA, April 17, 1990, 17p.

This workshop was organized in response to the need expressed by many countries for specific guidelines on identifying and selecting home fluids that can be recommended for the initial household management of diarrhea. Summaries of country experiences, statement of key issues, conclusions reached by the participants, and the author's recommendations for country programs are outlined, as is a recommended plan of action for one specific country, Pakistan.

- 4713 IMPROVING EVALUATION IN AFRICA. Development Journal, issue 3, 1990, pp.24-25.

This article reports on a seminar held in May 1990 in Abidjan, Ivory Coast, about strengthening evaluation capacities in Africa. Participants discussed the constraints to evaluation in Africa, such as the lack of policies and methods as well as inadequate resources. Other topics included dealing with donors, conducting joint evaluations, training and feedback.

- 4693 MULTI-SECTOR ACTIVITIES IN WESTERN PROVINCE, ZAMBIA. Development Journal, issue 3, 1990, pp.34-35.

An evaluation of Dutch-funded projects in the Western Province of Zambia is briefly reviewed in this article. The evaluators noted that more Zambian nationals needed to be trained about and involved in project activities, such as backstopping and management, in order to strengthen the infrastructure and ensure sustainability.

- 4484 PLAN OF ACTION FOR THE CONTROL OF DIARRHEAL DISEASES IN THE REGION OF THE AMERICAS. Interagency Coordinating Committee for the Control of Diarrheal Diseases, nd, 32p.

This plan of action, jointly developed by PAHO, UNICEF, and A.I.D, articulates key areas of consensus, signals a new level of commitment for collaborative efforts at the regional level, and describes several strategies on which sound national CDD programs would be based. It also recommends specific ways to operationalize these strategies and suggests mechanisms of collaboration of national ICCs with the national CDD program in each country. (Available in English and Spanish) [published abstract]

- 4074 PROGRAMME FOR CONTROL OF DIARRHOEAL DISEASES: SEVENTH PROGRAM REPORT, 1988-1989. Geneva, The World Health Organization, 1990, 121p.

This report describes the activities undertaken by the [WHO CDD] Programme during the 1988-1989 biennium. It contains information on activities carried out in support of national CDD programmes and describes the results of WHO-supported research that came to completion during this biennium. Major topics reviewed include health worker training, ORS access, country program evaluations, and research agendas. [published abstract]

- 4077 REPORT OF THE ELEVENTH MEETING OF THE TECHNICAL ADVISORY GROUP. Geneva, The World Health Organization, March 7-8, 1990, 12p.

This report summarizes the discussion and conclusions of the eleventh technical advisory group (TAG) meeting of the WHO CDD program. The TAG reviewed such topics as research management and priorities, targets for the future, and financial matters. In general the TAG found the overall progress of the program to be encouraging and made specific recommendations in terms of program implementation, training, ORS production, and research.

- 4505 White, A.; Saade, C.; Northrup, R. THE PRIVATE SECTOR ROLE IN CONTROL OF DIARRHEAL DISEASES, INDIA. Arlington, VA, Management Sciences for Health, PRITECH Project, PCP 007-IA, November 7, 1990, 33p.

This study examines three possible approaches to engaging the private sector in diarrheal disease control in India: 1) reaching private practitioners to improve diarrhea treatment; 2) educating and mobilizing the public through private organizations and agencies; and 3) enhancing the commercial marketing of ORS as a mechanism to reach both private practitioners and mothers/ consumers.

PRODUCTION AND DISTRIBUTION OF ORS

- 4519 Aftab Associates (Pvt.) Ltd. PERPETUAL TRADE AUDIT FOR ORS: REPORT FOR THE MONTHS OF AUGUST AND SEPTEMBER, 1990. Arlington, VA, Management Sciences for Health, PRITECH Project, LPC 022-PA, January 1991, 45p.+app.

At the request of PRITECH/Pakistan, Aftab Associates (Pvt.) Ltd. launched a perpetual trade audit. The audit consists of a monthly survey of 1200 retailers in 21 cities to monitor the sales of ORS. Comparative market shares of competing brands are presented, as well as market size and distribution. In addition to the overall figures, tables for the top 10 cities are included.

- 4325 Kenya, P.R.; Gatiti, S.; Muthami, L.N. et al. ORAL REHYDRATION THERAPY AND SOCIAL MARKETING IN RURAL KENYA. Social Science and Medicine, vol.31 no.9, 1990, pp.979-987.

This study tested two alternative (primary health care alone and primary health care in combination with commercial supply) means of ORS delivery for increasing utilization coverage and awareness of ORT by rural Kenyan families. It concludes that a combination of a commercial approach and mass communication techniques can further ORS use. Commercial availability of ORS can create an extra demand for the service, without replacing distribution of ORS delivered for free through primary care sources.

- 4495 Laible, N.; Campbell, R. PHASE I REPORT: LIQUID ORAL REHYDRATION SOLUTION (ORS) PACKAGED ASEPTICALLY IN TETRA PAKS IN PAKISTAN. Arlington, VA, Management Sciences for Health, PRITECH Project, SUP 091-PA, December 10, 1990, 18p.

The authors examine the technical feasibility of packaging liquid ORS using Tetra Pak machines in three Pakistani dairies which already use the Tetra Pak system for milk. They conclude that the material currently available for juice Tetra Pak packaging is appropriate for liquid ORS, and that the dairies' machinery and operator/facility expertise are adequate. Phase II will examine the best ORS formula to use, the best processing methods, and actual packaging performance.

- 4585 Laible, N.; Campbell, R. PHASE II REPORT: LIQUID ORAL REHYDRATION SOLUTION (ORS) PACKAGED ASEPTICALLY IN TETRA PAKS IN PAKISTAN. Arlington, VA, Management Sciences for Health, PRITECH Project, SUP 091-PA, January 1991, 15p.+app.

Four Pakistani dairies participated as test facilities to demonstrate physically the feasibility of packaging liquid ORS in Tetra Paks using aseptic conditions. The trials showed that liquid ORS can be dependably filled into Tetra Paks aseptically and contained for extended periods (more than 2 months to date).

- 4139 Saade, C. BOOSTING ORS COMMERCIALIZATION IN THE PHILIPPINES: PART II. Arlington, VA, Management Sciences for Health, PRITECH, SUP 026-PH, September 12-22, 1989, 19p.+app.

The author reports on his follow-up to a previous visit (see #3494). He describes progress made in current ORS commercialization efforts and discusses the options for action. Recommendations of which companies to use and a scope of work for an ORS commercial consultant conclude the report.