

Cost Benefits of Breastfeeding

Karen M. Zeretzke, MEd, IBCLC

Baton Rouge, Louisiana

lactation@juno.com

Asked at a Blue Cross/Blue Shield health care cost containment in Minot, North Dakota:
"What helps reduce the incidence of ear and respiratory infections, intestinal disease, pneumonia, meningitis, Crohn's disease, colitis, diabetes, childhood cancers, allergies, constipation, urinary tract infections, tooth decay and obesity? It also increases intelligence and reduces the incidence of breast cancer for the mother."

No one knew the answer was breastfeeding.....

Today I would add that breastfeeding reduces ovarian and cervical cancer, juvenile rheumatoid arthritis, bacterial and viral infections of all types and increases visual acuity, optimal neurological and social and oral development, as well as saves money for health care providers and families.

Cost Benefits of Breastfeeding

Medical costs for breastfed infants were ~ \$200 less per child for the first 12 months of life than those for formula-fed infants; extrapolating this to the Healthy People 2000 goal of 50% of infants breastfed could save this HMO up to \$140,000 annually. This study included office visits, drug prescriptions and hospitalizations (Hoey and Ware, 1997).

Infant diarrhea in non-breastfed infants costs \$291.3 million in annual health care costs
Respiratory syncytial virus (RSV) costs \$225 million in annual health care costs
Insulin-dependent diabetes mellitus costs from \$9.6 to \$124.8 million in annual health care costs

Otitis media costs \$660 million in annual health care costs.

TOTAL ANNUAL COST OF NOT BREASTFEEDING: \$1.186 to \$1.301 BILLION

Additionally, formula provided by WIC program to non-breastfeeding mothers costs \$2,665,715 annually (Riordan, 1997)

Increasing breastfeeding in Australia could add A\$3.4 billion to the national food output (equal to an extra 0.7% of the GNP). (Smith, 1997)

- Reduction in childhood cancer saves \$10 million
- Reduction in childhood diarrhea \$100 million

- Reduction in ear infections \$500 million
- Reduction in tympanoscleromas \$500 million
- Reduction in juvenile onset diabetes \$2.6 billion
- Reduction in hospitalization for RSV \$225 million
- TOTAL CONSERVATIVE ESTIMATE OF COST SAVINGS NATIONALLY FOR ONE YEAR: \$4.18 BILLION (Lee, 1997)
- Cost savings in disease: \$3.689 billion
- Cost savings in health expenditures: \$3.96 billion
- Cost savings in household expenses: \$2.835 billion
- Breastfeeding Support costs (1 LC/1000; additional training; direct support): \$360 million

Cost/benefit ratio of 0.7--over \$1 billion would be saved by providing Lactation Consultant support (Labbok, 1995)

Annual reduction in Maternal Medicals at delivery (Philadelphia-based): \$91,650 Annual reduction in premenopausal cancer: \$202 million Annual reduction in domestic violence: \$42.5 million (Lee, 1997)

Overall estimated savings of \$459-\$808 per family enrolled in four social service programs: Medi-Cal, WIC, AFDC, Food Stamps. (Tuttle and Dewey 1996)

Overall estimated savings of \$112 for the first six months of life per infant enrolled in Medicaid; pharmacy costs were one-half the amount of formula-fed infants--infants were breastfed exclusively for a minimum of three months. (Montgomery and Splett 1997)

Overall a minimum of A\$115 million could be saved/year in Australia by increasing breastfeeding rates to 80% at three months calculating savings only in otitis media, IDDM, gastrointestinal illness and eczema. (Drane 1997)

THE MOTHER

SHORT-TERM BENEFITS

Pitocin, usually administered to newly post partum mothers to prevent hemorrhage, costs about \$4.49/patient for supplies: (\$0.84 18 French angiocath; \$1.40 IV tubing; \$0.76 saline IV fluid; \$0.30 one ampule pitocin; \$1.10 syringe). Babies breastfed immediately postpartum make this process unnecessary, saving \$4.49/patient x ?? patients/year =

LONG TERM BENEFITS

Breast Cancer

Treatment of breast cancer is approximately \$30,000 annually/patient. Breastfeeding reduces the incidence of breast cancer. (Lee 1997)

Diabetes

Breastfeeding reduces a diabetic mother's need for insulin and a two-fold reduction or delay in the onset of subsequent diabetes for a gestational diabetic. Treatment of diabetes takes one of every \$7 of health care dollars, and costs the US \$130 billion annually. This is for direct treatment and does not factor in the high incidence of kidney disease, peripheral vascular disease and blindness which accompany diabetes.

Emotional Stability

Oxytocin, a hormone released each time a mother breastfeeds, decreases blood pressure, stress hormone level and calms the mother. A 38-fold difference in the frequency of domestic violence and sexual abuse was found between the group that breastfed and the group which did not. (Acheston 1995)

Infertility

Breastfed women were 25% less likely to have hyperprolactinemia, galactorrhea and menstrual disturbances according to Dr. Shafiq Rahimova. He also feels that males not breastfed are at greater risk of developing genito-urinary difficulties.

Ovarian and Endometrial Cancer

A WHO Collaborative Study found the relative risk of endometrial cancer decreased significantly with increased duration of breastfeeding; women whose lifetime lactation was 72 months or greater had the greatest protection. Those breastfeeding for less than one year did not accrue this benefit. (Rosenblatt, 1995)

Lactation has a preventative effect on ovarian cancer; the ACS estimates 26,888 new cases of ovarian cancer will be diagnosed this year. For every 1.6 women who did not lactate, only one woman who did developed ovarian cancer. (Gwinn, 1990)

Osteoporosis

Lactating protects women against osteoporosis; not breastfeeding is a risk factor in its development. Bone mineral density decreases during lactation but after weaning showed higher bone mineral density than those who did not breastfeed. A mother's bone mineral density increases with each child breastfed; lumbar spine density increased 1.5% per child breastfed. Thus a decrease in the risk of a fracture of the hip, vertebrae, humerus or pelvis. (Kalwart and Specker 1995; Hreschyshyn 1988)

In 1983 osteoporosis and osteoporotic fractures cost an estimated \$6.1 billion dollars; an adult white woman who lives to the age of 80 has a 15% lifetime risk of a hip fracture. (Cummings 1985)

Rheumatoid Arthritis

In Norway, 63,090 women with rheumatoid arthritis were followed for 28 years. The total time of lactation was associated with reduced mortality; the protective effects of breastfeeding appear dose related. (Brun 1995)

Weight Loss

During the first year postpartum, lactating women lose an average of 2 kg more than non-breastfeeding women, with no return of weight once weaning occurs. The impact of overweight impacts health by increasing chances of cardiovascular disease and diabetes. (Dewey 1993)

THE BABY

SHORT TERM (UP TO ONE YEAR)

Allergies

Allergy protection is one of the most frequently cited reasons mothers choose to breastfeed. Premature infants are also protected from allergies; breastfed preemies had less than one-third of the allergies, particularly atopic disease, in the first 18 months of life. (Lucas 1990)

There has not been a documented case of anaphylaxis to human milk. (Baylor, 1991; Ellis 1991)

Estimated treatment cost of allergy diagnosis and treatment is \$400; acute reaction treatment costs about \$80-100 per episode. (Hoey at 1996 ILCA Conference)

Anemia

Piscante 1995 reports that "none of the infants who were exclusively breastfed for 7 months or more....were anemic".

Communicable Childhood Diseases

Antibody response to oral and parenteral vaccines is higher in the breastfed infant. Formula feeding, particularly soy formula, may interfere with the immunization process. (Zoppie 1989; Hahn-Soric 1990)

Death

Breastfeeding protects against sudden death from botulism. In one study, all of the infants who died were not breastfed. (Arnon 1982)

Globally, breastfeeding has been identified as one element of protection against SIDS. (Mitchell, 1991) One study identified the risk of SIDS increasing by 1.19 for every month the infant is not breastfed. (McKenna 1995) Breastfed infants are one-fifth to one-third less likely to die of SIDS. SIDS is a leading cause of US infant death, impacting nearly 7,000 families per year. (Goyco 1990)

Diarrhea

Breastfeeding for 13 weeks has been shown to reduce the rate of vomiting and diarrhea by one-third and reduce the rate of hospital admissions from GI diseases. (Howie 1990)

Breastfed infants are protected against salmonellosis; breastfed infants are one-fifth less likely to develop this. (Stigman-Grant 1995) Breastfed babies are also protected from giardiasis. (Nayak 1987)

Gastrointestinal Disease

Children with acute appendicitis are less likely to have been breastfed for a prolonged time. (Piscante 1995)

Breastfeeding may reduce the risk of pyloric stenosis. (Habbick, 1989)

Hospitalization

Breastfed infants are less likely to be hospitalized if they become ill and were hospitalized for respiratory infections less than half as much as formula-fed infants. (Chen 1988) Cunningham 1986 reports that formula-fed infants are 10-15 times more likely to become hospitalized when ill.

Breastfed babies are half as likely to be hospitalized for RSV infections; in 1993 about 90,000 babies with RSV were admitted to hospitals at a cost of about \$450 million. (Riordan, 1997)

Breastfeeding reduced re-hospitalizations in very low birth weight babies. (Malloy 1993)

In a Honolulu hospital, readmission rates were reduced 90% following the initiation of a lactation program. The drop was seen in dehydration, hyperbilirubinemia and infection. (Lee, 1997)

Necrotizing Enterocolitis

Premature infants fed their own mother's milk or banked human milk were one-sixth to one-tenth as likely to develop NEC, which is potentially fatal. The incidence of NEC in breastfed infants is 0.012; in formula-fed infants it is .072. In Australia, one study has calculated that 83% of NEC cases may be attributed to lack of breastfeeding. (Drane 1997)

NEC adds between one and four weeks to the NICU hospital stay of a preemie. At a cost of \$2000/day, this translates to \$14,000 to \$120,000 per infant. (Lee 1997)

Even when infants survive NEC, the disease can leave life-long costs via the development of short-gut syndrome and chronic malabsorption syndromes. A Pennsylvania physician has estimated the cost of one year's at-home IV nutritional support treatment for a child with chronic malabsorption to be \$50-100,000. (Lee 1997)

Otitis Media

Conservative estimates of savings for this disease alone range from one-half to two-thirds of a billion dollars if women were to breastfeed for 4 months. The savings estimate for Ohio if half of the mothers on WIC were to breastfeed was \$1 million. (Riordan, 1997)

Based on these figures, health care provider agencies could, conservatively, save two-thirds of what it spends to treat otitis media.

More than one million tympanostomies are performed yearly in the US; at a cost of \$2 million. By reducing the ear infections which cause the need for tubes for ear drainage, \$2/3 to \$1 billion could be saved.

Respiratory Infections

Breastfeeding protects against respiratory infections, including those caused by rotaviruses and respiratory syncytial viruses. (Grover 1997) Breastfed babies were less than half as likely to be hospitalized with pneumonia or bronchiolitis. (Pisacane 1994)

Breastfed infants had one-fifth the lower respiratory tract infections when compared to formula-fed infants. (Cunningham 1988)

Sepsis

Infants receiving human milk while patients in the intensive care nursery were half as likely to develop sepsis, a reason for increased length of hospital stays and provider expenditure. (El-Mohandes 1997)

Urinary Tract Infections

Breastfeeding protects babies against UTIs and subsequent hospitalization. (Pisacane 1992)

LONG TERM EFFECTS OF BREASTFEEDING

Breastfeeding prevents or lessens the severity of the following conditions.

- Allergies
- Asthma
- Childhood Cancer
- Diabetes
- Gastrointestinal Disease
- Heart Disease
- Inguinal Hernia
- Multiple Sclerosis
- Juvenile Rheumatoid Arthritis

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