

*Technology Dependent Children: Hospital  
Vs. Home Care*

May 1987

NTIS order #PB87-194551

**TECHNOLOGY-DEPENDENT  
CHILDREN: HOSPITAL v.  
HOME CARE**

---

**A TECHNICAL MEMORANDUM**

---

MAY 1987



Department of the Army  
Office of Technology Assessment  
Washington, D. C. 20315

Recommended Citation:

U.S. Congress, Office of Technology Assessment, *Technology-Dependent Children: Hospital v. Home Care—A Technical Memorandum, OTA-TM-H-38* (Washington, DC: U.S. Government Printing Office, May 1987).

Library of Congress Catalog Card Number 87-619805

For sale by the Superintendent of Documents  
U.S. Government Printing Office, Washington, DC 20402-9325  
(order form on p. 107)

## Foreword

This technical memorandum is about problems arising out of success. Recent advances in medical technology have permitted sick children who once would have died to survive with the assistance of sophisticated equipment and intensive nursing care. Often, the assistance is needed for just a short time, but sometimes the dependence on life-sustaining technology is permanent. As technology for helping keep children alive has improved, a new population of technology-dependent children has emerged.

This small but growing population of children raises new problems for the health care system. Because the care is expensive—often more expensive than most American families can afford—children and their families depend on third-party payers—insurance companies, Medicaid, or philanthropists—to finance the needed care. But the structure of the health insurance system has not kept pace with the needs of these children. Most technology-dependent children are eligible for Medicaid coverage in the hospital, but coverage of home care is more limited. Consequently, some children have remained hospitalized even when their families are able to provide good, lower cost care in the home.

OTA was requested by the House Energy and Commerce Committee and the Senate Labor and Human Resources Committee to examine the problems of health care financing encountered by technology-dependent children as part of a larger assessment, *Technology and Children's Health*. The committees wanted to know how many children are technology dependent, how home care and hospital care compare in cost, and how well private and public third-party payers cover the services needed by these children.

This technical memorandum provides a working definition of technology dependence and estimates the prevalence of technology dependence among American children. A principal finding is that the size of the population varies dramatically with the clinical criteria used in the definition. OTA has also found that the cost-saving potential of home care depends to a great extent on attributes of the family and the home environment. The ability and willingness of family members to provide ongoing nursing care for a substantial part of the day are central to lowering costs to third-party payers, although they may require great sacrifice on the part of the family.

The conduct of this study was guided by the advisory panel for the OTA assessment, *Technology and Children Health*, chaired by Harvey Fineberg. In addition, many government officials and health care professionals were consulted. Information and insights provided by parents of technology-dependent children were also very helpful. Key OTA staff involved in the analysis and writing of the technical memorandum were Elaine J. Power and Judith L. Wagner.



JOHN H. GIBBONS  
*Director*

## Advisory Panel on Technology and Children's Health

Harvey Fineberg, *Chairman*  
Harvard School of Public Health, Boston, MA

Lu Ann Aday  
Center for Hospital Administration Studies  
University of Chicago  
Chicago, IL

Julianne Beckett  
Child Health Specialty Clinic  
University of Iowa  
Iowa City, IA

Donald Berwick  
Quality of Care Measurements  
Harvard Community Health Plan  
Boston, MA

Alexander Capron  
Medicine and Public Policy  
University of Southern California  
Los Angeles, CA

Norman Fost  
Program on Medical Ethics  
Department of Pediatrics  
University of Wisconsin Hospital  
Madison, WI

Robert Goldenberg  
Department of Obstetrics and Gynecology  
University of Alabama  
Birmingham, AL

Michael Grossman  
Health Economics Research  
National Bureau of Economic Research  
New York, NY

Robert Haggerty  
W.T. Grant Foundation  
New York, NY

Patricia King  
Georgetown Law Center  
Washington, DC

Phyllis Leppert  
Perinatal Research  
St. Lukes/Roosevelt Hospital Center  
Columbia University  
New York, NY

Harvey Levy  
IEM-PKU Program, Childrens' Hospital  
Boston, MA

Edward Lis  
Division of Services for Crippled Children  
University of Illinois  
Chicago, IL

Joanne Macon  
Holman Health Region  
Chicago Department of Health  
Chicago, IL

John MacQueen  
Child Health Specialty Clinic  
University of Iowa  
Iowa City, IA

Janet Reis  
School of Nursing/SUNY Buffalo  
Buffalo, NY

Sarah Rosenbaum  
Children's Defense Fund  
Washington, DC

Barbara Starfield  
Division of Health Policy  
Johns Hopkins University  
School of Hygiene and Public Health  
Baltimore, MD

NOTE: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the advisory panel members. The panel does not, however, necessarily approve, disapprove, or endorse this technical memorandum. OTA assumes full responsibility for the technical report and the accuracy of its contents.

---

## **OTA Project Staff– Technology-Dependent Children Hospital v. Home Care**

Roger C. Herdman, *Assistant Director, OTA,  
Health and Life Sciences Division*

Clyde J. Behney, *Health Program Manager*

Judith L. Wagner, *Project Director*

Elaine J. Power, *Study Director*

### **Other Contributing Staff**

David Alberts, *Research Assistant*

Pony Ehrenhaft, *Senior Analyst*

Marvin Feuerberg, *Analyst*

Mary Ann Hughes, *Research Analyst*

Virginia Cwalina, *Administrative Assistant*

Carol Ann Guntow, *P.C. Specialist*

Karen T. Davis, *Secretary/Word Processor Specialist*

### **Contractor**

Harriette Fox, Fox Consultants, Inc., Washington, DC