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**Affordable Fire Safety in Board and Care Homes
A Regulatory Challenge - Interim Report**

Bernard M. Levin, Norman E. Groner and Roseanne Paulsen

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NOTICE

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AFFORDABLE FIRE SAFETY IN BOARD AND CARE HOMES
A REGULATORY CHALLENGE
INTERIM REPORT

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Administration on Aging
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National Institute of Standards and Technology
National Institute on Disability and Rehabilitation Research
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ABSTRACT

This is an interim report on a project concerning fire safety in Board and Care Homes. Homes vary greatly in the level of disability of residents and financial resources of the residents. A major concern is the availability of satisfactory care for clients with limited funds. Meeting fire safety codes can mean an unaffordable capital cost to financially marginal providers who cannot borrow money. One focus of the study is the **use** of the provisions in the Life Safety Code. Many agencies use these requirements and find they lead to a high level of safety without excessive costs. All have developed or adopted a procedure for rating Evacuation Difficulty that they find workable, and many find satisfactory. Other agencies use other requirements, sometimes more lenient and often more strict. Costs of fire safety systems, such as sprinklers, can vary greatly, impeding a dialogue on the benefit-cost relationships of these systems. It appears that in some locations there are many homes that provide the services of Board and Care Homes but are not regulated.

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INTERIM REPORT

INTRODUCTION AND BACKGROUND

Project Framework

This is an interim report describing some of the information obtained during the first two years of a project to promote a high degree of fire safety in Board and Care Homes without unnecessary expense or interference with the program objectives of the Homes. **An** earlier interim report covered the findings through November 1, 1990. This report updates and replaces that report and includes the material in the earlier interim report.

The program is currently being funded by **six** agencies: in the Department of Health and Human Services -- the Administration on Developmental Disabilities, the Administration on Aging, the Health Care Financing Administration, the National Institute of Mental Health, and the Social Security Administration; and in the Department of Education -- the National Institute on Disability and Rehabilitation Research.

The Board and Care Occupancies requirements of the National Fire Protection Association's Life Safety Code were developed specifically for this occupancy by the National Institute of Standards and Technology, formerly the National Bureau of Standards. The first of two primary purposes of the program is to foster the use of the requirements, with an emphasis on determining the scope of their current use and the degree to which their use is achieving the desired goals. The second major purpose of this research program is to provide the data necessary to make informed judgments regarding the need for additional requirements or the refinement of existing ones.

The authors believe that fire safety is one important part of a total system of providing care to citizens with disabilities. When developing or evaluating fire safety requirements, it is important to understand the total system and the relationship of fire safety to other aspects of the system. This report contains information on many aspects of the total system. To provide a coherent picture, we combine the findings of the study with well known facts.

Background

The Movement to Smaller Residential Settings

During the decade of the 1960's, a movement was growing to provide care for disabled citizens within the community rather than in isolated institutions. A larger percentage of mentally retarded and developmentally disabled children are now staying with their parents rather than being sent to a professionally run facility. When a child is sent to a professionally run facility, the facility is more likely to be a community based facility located in a city or town near the child's family, and the facility is more likely to be a single small or medium sized building rather than a campus of large buildings. The care of residents in older institutions is also affected as residents of old institution

for the mentally retarded in remote locations are being transferred to smaller homes in the community.'

Community based facilities that do not provide medical care are called Board and Care Homes in the Life Safety Code. They also go under a number of other labels including: Group Homes, Intermediate Care Facilities/MR (ICF/MR), Community Based Residential Care Facilities, Adult Congregate Living Facilities, Domiciliary Homes, and Personal Care Homes.

This movement, together with the development of new drugs, led to the release of mentally ill patients, either to live unsupervised or to live in supervised Board and Care Homes. A variety of living arrangements are being developed for the elderly who need some supervision or the assistance of a support system but who do not need the medical services of a nursing home or hospital.

Fire Safety Rules for Board and Care Homes

Until 1985 there were no model fire safety requirements that were specially designed for Board and Care Homes. With the rapid growth in the number of Board and Care Homes, years ago it became increasingly clear that there was a need for fire safety requirements specifically designed for Board and Care Homes. Sometimes the fire rules required an unnecessarily expensive set of fire safety features--such as the requirements for a nursing home. For example, the nursing home requirements were being applied, in some jurisdictions, to a small home with eight high functioning residents. However, a more lenient and less expensive set of requirements--such as the requirements for a boarding home--would not have provided a satisfactorily high level of fire safety for a home with low functioning residents. Claims were being made that the cost of providing fire safety was retarding the development of Board and Care Homes.

The National Institute of Standards and Technology (formerly called the National Bureau of Standards)--with support from the Department of Health and Human Services--developed a set of stringent but flexible fire safety requirements for Board and Care Homes. The National Fire Protection Association (NFPA) adopted these new requirements, with modifications, as Chapter 21 of the 1985 edition of the Life Safety Code. (An updated version with minor modifications is included in the 1988 edition and a third edition was published in the spring of 1991. In the 1991 Edition, there are two chapters for Board and Care Occupancies, one for new and one for existing facilities.) The Life Safety Code is a model (voluntary) code: the model requirements in the code become legal requirements only after they are adopted by law or regulation by the appropriate regulatory authority.

The knowledgeable and responsible officials, in the Department of Health and Human Services and the Department of Education, believe that the Board and Care requirements in the Life Safety

¹ "On January 31, 1991, the last five residents of Laconia Developmental Services, New Hampshire's only large public institution serving persons with developmental disabilities, left the facility to start their lives in the community. The closure of Laconia puts New Hampshire in the unique position of being the first state, nationwide, to discontinue using large public institutions to serve persons with developmental disabilities." Reference: New Directions National Association of State Mental Retardation Program Directors, 113 Oronoco St. Alexandria, VA 22314, Feb. 1991, Vol 21, No.2, p.4.

Code provide a high level of safety without excessive cost and without undue interference with the programs and objectives of the Homes. They believe that a vital part of any program to provide good care--in the least restrictive environment to those citizens who need a sheltered residential environment--is to assure that the fire safety regulations are based on the Life Safety Code's Board and Care requirements.

Many state and local officials agree, as do many of the providers who are required to meet these requirements. Not all officials and providers do agree. Some believe that the requirements are too lenient and some feel they are too strict. However, there has been insufficient technical data or information to support any of these conclusions. A major task of this project is to develop the information and technical data that can **serve** as a basis for decisions regarding adoption of the Board and Care requirements of the Life Safety Code and decisions regarding modifying requirements in the 1991 Edition.

Description of Project Tasks

Determine Progress and Problems in Adoption of Board and Care Requirements in the Life Safety Code

We are now in the process of determining if there are problems--real or perceived--with the requirements in the Board and Care Chapters. We are analyzing these problems to ascertain which are valid and which are based on a misunderstanding of the specifics of the contents of the Chapters. We also are determining which agencies have adopted the requirements (entirely, or with major modifications or exclusions), which are considering adopting them, which have not considered adoption, and which have formally or informally decided not to adopt the requirements: we need to know the reasons for these decisions regarding adoption.

Using this information, policies can be developed and programs can be started based on facts rather than intuition. Types of programs that could be undertaken include upgrading and refining the Board and Care requirements and/or promoting the adoption of these requirements (or even developing a new set of requirements if the study were to show that it is needed).

The staff developing this information were all involved in the research that led to the development of the Board and Care Occupancies Chapter of the 1985 Edition of the Life Safety Code. *Also*, some of the tasks in this project are designed to promote the use of these requirements. While the staff members all have favorable opinions toward the requirements, they have the professional training and motivation to keep their own opinions and the opinions of the sponsors from biasing the results. Creditability of the results of this task is vital to the success of this project.

Model Development

Considerable progress has recently been made and is continuing to be made in the development of models that simulate the growth of fires and the spread of combustion products throughout the building. Some pioneering efforts have been made in developing models that simulate the decisions, actions and movements of building occupants in response to the simulated smoke movement. Pilot projects have demonstrated that the fire and occupant models can be connected to provide the type of technical information needed in developing fire regulations, fire safety plans, etc.

The EXITT model is the model of occupant actions that is most relevant to the problem of fire safety in small Board and Care Homes. Several improvements are needed to increase the value of the model in evaluating the fire safety of Board and Care Homes. These include: introducing probabilities to the decision rules, permitting occupants (i.e., staff) to reenter the building to perform additional rescues, and improving the calibration of the model. The decision rules have been expanded to permit the staff to reenter the building to perform additional rescues.

Provider's Manual

A manual will be developed that could be used by those providers that are not knowledgeable about fire safety codes and regulations. Such providers must eventually rely on the advice of experts. However, they need a manual that will give them a simple explanation of the requirements in the Board and Care Chapters and advice on how they should proceed in preparing their facilities to meet these requirements. The manual should help them understand the type of professional assistance they will need. Writing of this manual is underway. **An** outline for the proposed manual is contained in the Section, Manual About the Board and Care Provisions in the Life Safety Code, on page **44**.

Pamphlets

We have developed two short, easy to understand pamphlets that can be used to promote the fire safety requirements in the Life Safety Code. One describes the fire safety requirements in the Board and Care Occupancies Chapters of the Life Safety Code and the associated Fire Safety Evaluation System for Board and Care Homes. It very briefly shows how they can be used to achieve a high level of fire safety in community based residences at reasonable costs. This pamphlet would be distributed widely to and by service and advocacy agencies for persons who are aged or disabled. The second pamphlet was designed to help make regulatory officials more sensitive to the goals and problems of the providers and to make the providers more sensitive to the goals and perspective of the regulators. A third pamphlet is being designed to alert providers to the difference between fire safety plans for Nursing Homes and fire safety plans for Board and Care Homes. See the Section, Brochures, on page **47**, and the Appendix for a copy of the pamphlets.

NFPA Standards Committee Activities

The National Fire Protection Association (NFPA) updates the requirements of the Board and Care Chapters of the Life Safety Code every three years. It is important that the changes be based, in part, on the technical results of this project and that future changes be supportive of the goal of assuring a high level of fire safety in Board and Care Homes without unnecessary expense. Project staff are monitoring the activities of the NFPA committees that are revising the Code; participating in the committees' activities; and interacting with the committee members to assure that they are knowledgeable of the results of this project. This is not a major expenditure but it is vital to get the results of this project to the influential professionals involved in determining fire safety requirements for Board and Care Homes. Drs. Levin and Groner are members of the newly formed NFPA Committee on Board and Care Facilities. (They also were members of the predecessor subcommittee on Board and Care Facilities.)

THE BOARD AND CARE SYSTEM AND ITS REGULATIONS

The Regulatory Jungle

Introduction

In 1988, the American Association of Retired Persons published a report by Leah Dobkin entitled *The Board and Care System: A Regulatory Jungle*. As its title implies, Ms. Dobkin found that the regulatory system for regulating Board and Care Homes appears quite complex. While we will neither concede nor dispute that the term "Jungle" is appropriate, we do believe that it is important to understand some of the complexities of the fire safety portion of the regulatory system if one is to properly understand the findings of this project.

Multiple Hurdles

We have found that a Board and Care Home may be required to meet several different sets of fire regulations. A Board and Care Home may be required to meet both state and local rules. (Often, one of the state requirements is that the building must meet all local requirements.) At the state level, the building may be required to meet some combination of the following: 1. the State Building Code; 2. the State Fire Code or the requirements of the State Fire Marshal; 3. the fire safety requirements for state funding; 4. the fire safety requirements for a state license to operate a Board and Care Home; 5. the fire safety requirements for a state or local social service agency to place a client or to recommend a facility to clients. At the Federal level the home may be required to meet the fire safety requirements for Veterans Administration referrals or the fire safety requirements for the Health Care Financing Administration's (HCFA) ICF/MR funding.

Fortunately, any one building would normally not have to meet as many different sets of regulations as implied above. Often more than one agency may adopt the same requirements. For example, the Life Safety Code is a model code that more than one agency in a state may adopt, by regulation or by state law. At the Federal level, HCFA and the Veterans Administration use the 1985 and 1991 Editions of the Life Safety Code, respectively. Often the licensing requirement of a social service agency is that the building meet the requirements set by the State Fire Marshal, which may or may not be based on the Life Safety Code.

Sometimes one set of requirements is sufficiently more rigorous than another so that one can essentially ignore the less rigorous. However, one set may be more rigorous for buildings of one size (e.g. 5 or less residents) and the other may be more rigorous for larger buildings (e.g. 6 or more residents). For example, the Life Safety Code requires more safety features for Board and Care Homes with 4-5 residents than most Building Codes because building codes apply the requirements for one and two family houses to Board and Care Homes of this size. However, Building Codes (e.g. the BOCA National Building Code) usually require considerably more safety features than the Life Safety Code for Homes with 6-16 high-functioning residents.

Moreover, the picture may become more confusing as different social service agencies adopt different fire safety requirements for licensing (or funding) similar facilities serving different populations, e.g., aging and developmentally disabled. We have also found the situation where there is one state agency having responsibility for setting fire safety requirements for smaller

facilities and another agency setting requirements for larger facilities serving similar populations.² We have found different agencies issuing different requirements for homes that appear, at first, to be similar--however, in some, if not all, of these cases, the average levels of disability and the assumed levels of care differ?

Finally, the regulations are constantly being updated and modified.

We are attempting to obtain a summary of the rules in each state. Every effort is being made to obtain correct and complete information. However, there will be errors and gaps in the information. Respondents often do not inform us of regulations that are outside their area of responsibility. Often they do not alert us to the existence or functions of other related Agencies. We believe that sometimes when one set of regulations is much more rigorous than another, the respondent fails to mention the less rigorous: if such cases occur, our information would be incomplete but the missing data would be of no practical importance.

Occupancy Classifications

Another factor that can affect the choice of fire safety rules to be applied is the occupancy classification assigned to the facility. The fire safety rules that are applied to Board and Care Homes are usually part of (or adapted from) a fire code (such as the Life Safety Code) or a building code, which covers all types of buildings. An occupancy classification is used in this report to indicate a type of building usage. Residential Board and Care Occupancies is the building usage in the Life Safety Code that is of most interest to this project.

As used in this report, a Board and Care Home means a facility that provides for a fee: 1. room; 2. board; and 3. personal care and/or protective oversight to one or more residents with a physical or mental disability. It does not include facilities that provide the medical care provided by a nursing home or hospital. It should be noted that many jurisdictions label homes that provide care for one or two (or sometimes more) residents as Foster Care Homes. (Emphasis is given in this report to homes with four or more residents.)

The Life Safety Code (1985 and 1988 Editions) defines a Residential Board and Care Occupancy as "A Building or part thereof used to provide lodging, boarding, and personal care services for four or more residents unrelated by blood or marriage to its owners or operators." (Section 21-1.3

² For example, in Michigan the State Fire Safety Board promulgates rules providing for adequate fire prevention and safety for Homes with seven or more residents. The Department of Social Services sets the requirements for smaller Homes.

³ For example, in New York State, the Residential Care Centers for Adults (RCCA) Program is designed for mentally ill clients whose care is provided by the Office of Mental Health: the Office sets the fire safety requirements which are high, i.e., Requirements for Institutional Occupancies in the NYS Uniform Fire Prevention and Building Code. It is assumed that the performance level of the clients is low. Homes that are part of the Community Residence Program of the Department of Social Services are required to meet less strict requirements but the residents are required to be capable of self preservation. In 1990, it was estimated that **9,493** mentally ill persons lived in these Community Residences.

Definitions.) Facilities that provide only room and board to 16 or fewer (but at least 4) residents without disabilities would be called Lodging and Rooming Houses and those that provide services to 17 or more residents would be called Hotels. Facilities that provide services to three or fewer residents are treated as One and Two-Family Dwellings.

We are finding the distinction between Board and Care Homes and Foster Homes to be blurred. For example, we were informed that all Board and Care Homes for developmentally disabled persons in Texas were required to meet the Board and Care Chapter of the Life Safety Code. We later found that there was a fire with a fatality in a foster care home with **six** children receiving care. We found the same situation in the District of Columbia. (In the District of Columbia the foster care provider was permitted to care for more than the normal maximum because of the shortage of foster care providers.)⁴

Each model code and each regulatory authority has its own definition and interpretation of what constitutes a Board and Care Home and its own name (or set of names) for Board and Care Homes. However, most jurisdictions generally follow the approach of the Life Safety Code, e.g. a facility that provides medical or nursing care would not be considered a Board and Care Home. See Section, Distinguishing Between Health Care and Board and Care Occupancies, on page 35.

The BOCA National Building Code 1990 (a widely used model building code) has a Use Group I-1 for Board and Care Homes for **six** or more residents if all residents are "physically able to respond to an emergency situation without personal assistance." If any residents are not able to respond, Use Group 1-2 is applied: Use Group 1-2 is also applied to Nursing Homes and its requirements are more rigorous.

While the concept of personal care is well understood, it is a matter of interpretation and judgement whether or not a given facility provides personal care or whether or not a given individual requires personal care. In many cases it is clear and obvious, but in other cases it requires an analysis of the situation. If homes that provide room and board claim they do not provide personal care, one of the residential occupancy classifications would apply, e.g. Lodging or Rooming House. Board and Care Homes whose operators do not admit to providing personal care may not be required to meet the fire requirements for Board and Care Homes, even if they do, in fact, provide personal care services to private paying clients.

Factors that affect the number of Board and Care Homes that are not meeting the State (or local) fire safety requirements for Board and Care Homes include:

- the availability of manpower (or priority) within the appropriate regulatory authority for finding and checking on these Homes.
- the reporting of the existence of these Homes to the proper authorities by their complying competitors.

It can be assumed, based on comments given to the project staff, (but not substantiated) that both of these factors are affected by the availability of complying facilities that have empty beds available to accept new clients. We have spoken to state officials who claim there are very few, if any, non

⁴ Washington Post: August 25, 1991, p. B1; August 26, 1991, p. D1; August 27, 1991, p. B1, and editorial; and August 28, 1991, p. B1. Also, San Antonio Express News, March 25, 1991, p. 1-A.

complying Board and Care Homes in their state. We have also spoken to state officials in other states who concede that there may be many non-complying Board and Care Homes in their state.

Board and Care Homes tend to be regulated by state agencies. Facilities that provide only room and board tend to be regulated by local fire authorities and building code agencies.

Model Codes, Regulations and Laws

Model Codes are written and published by private organizations, usually trade or professional organizations. Federal, state and local regulatory agencies can adopt model codes as published or with modifications. Federal agencies are restricted to adopting only those model codes that are developed through a consensus procedure with procedural safeguards. The procedure for developing a model code has many similarities with procedures for developing federal regulations: this includes the opportunity for interested parties to make suggestions and comments which must be considered by the code writers (but not necessarily accepted). In this context, a consensus means there is general agreement. It does not mean that everyone approves of the total code, that everyone agrees with any one portion, nor that anyone agrees with all portions of the code. A model code is a combination of many compromises.

A model code usually becomes a requirement within a jurisdiction when the proper authority adopts the code, issuing a regulation requiring its use. Its use can also be mandated by law: usually the law is supported with regulations that clarify how the model code is to be used.

The Life Safety Code developed and published by the National Fire Protection Association is such a model code. There are three model building codes: The BOCA National Building Code published by the Building Officials & Code Administrators International, Inc.; The Standard Building Code published by the Southern Building Code Congress International; and The Uniform Building Code published by the International Congress of Building Officials. Each of these organizations publishes a number of model codes, e.g. the National Electric Code, Standard Fire Prevention Code, etc.

When adopting a code, the adopting jurisdiction can make any additions or modifications it deems desirable. See section of this report Additional Requirements Imposed by Jurisdictions or Agencies Using the Board and Care Chapters on page 32 for details.

A major thrust of this project is to determine the extent to which regulatory agencies have adopted the Life Safety Code and are using the Board and Care requirements.

Editions of the Life Safety Code

The Life Safety Code is frequently updated and revised, recently every three years. Regulatory agencies using the Life Safety Code determine which Edition of the Code is used in their jurisdiction. Adopting a new Edition involves some cost such as training costs and the cost of buying books containing the new Edition.

Normally each Edition of the Code requires a higher level of safety for new buildings than previous Editions. The changes are made in response to new technology, and to fire experience, including fire tragedies.

The first Edition of the Life Safety Code to include a Chapter specifically directed at Board and Care Homes was the 1985 Edition. The 1988 Edition contained major editorial changes to make the Code easier to apply and some technical changes which were not controversial. The 1991 Edition requires additional safety features beyond those in previous editions. It contains one requirement that is controversial: it requires automatic sprinklers in all new Board and Care Homes, including small Homes being started in existing buildings. See Section on AUTOMATIC SPRINKLER SYSTEMS on page 27 for a discussion of this controversy.

Differences Among Homes for Disability Groups

At both the state and Federal levels of government, separate agencies provide services to the various disability groups. These agencies have different histories, different responsibilities, and different levels of funding. While each agency is unique, there tend to be similarities among agencies in different states serving the same type of client. These similarities include the responsibilities, goals and resources of the agencies. Thus there tend to be similarities in Board and Care Homes serving one type of client, irrespective of state.

Homes for Elderly Persons Who Need Assistance or Care

The state agencies concerned with the elderly tend to be advocacy organizations rather than agencies that provide services to individuals. They neither operate Board and Care Homes nor cover the cost of their clients staying in a home.

The Federal government does provide some funds through two programs: 1. the Supplemental Security Income (SSI) program of the Social Security Administration (which includes state funded supplements to Federal payments); and 2. the support of some veterans by the Department of Veterans Affairs (VA).

The elderly usually make their own arrangements with the provider, often with the guidance of a social service agency. For example, the VA will recommend a Board and Care Home that meets VA standards: the veteran, who is being supported by the VA, is free to select another Home if he chooses. Many of the residents of these Homes have very limited funds: this includes those supported by SSI, those supported by the VA, and those supported by their savings, retirement, or families.

Marilyn Moon has described some of the problems facing Board and Care Homes for frail elderly persons with limited financial resources as follows:

"Two stark realities regarding residential care facilities readily present themselves. First, and foremost, what residents can afford in residential care facilities dictates what will be offered to them. For those with the lowest incomes these residences will provide minimal services in bleak surroundings. Second, these facilities serve to bridge the gap between full independent living and intensive nursing care, which makes the quality and extent of social and medical services provided crucial to the quality of life. Homes that try to bridge the gap with few resources run the risk of quality of care problems, but attempts to regulate quality and offer consumer protection may also create difficulties by limiting the flexibility of homes.

"Traditionally, residents of board and care homes tend to be low- and middle-income individuals. The frail elderly are likely to be older and have lower incomes than individuals in their early years of retirement, for example. Moreover, persons with higher incomes may be able to remain at home with the help of paid attendants, and when they need to move, they are likely to be able to afford life care communities or other similar facilities that offer quality services in comfortable settings. Board and care homes are the options for those with limited resources, often constituting an inadequate alternative? For the very poor, public support is quite limited. Residential care facilities are not considered medical institutions and thus usually are not covered by private or public health insurance. The major public resource available to low-income persons is Supplemental Security Income (SSI), the cash program targeted on low-income elderly and disabled persons. In some states, providers that serve the very poor elderly and disabled who receive SSI must do so on the federal guarantee level." (\$422 per month in 1992) "Other states supplement this amount, but often to a limited degree. It is hard to imagine how many services can be offered beyond room and board on \$14 a day. Other government programs offer little or no support. Currently, the federal government and most state governments do not fund much in the way of community-based care for individuals at this level of frailty. Thus, older individuals must largely rely on their own limited resources or limited SSI payments in purchasing accommodations in residential care facilities."⁶

The lack of well funded government programs and the limited financial resources of many elderly residents have a number of consequences which are discussed in other parts of Moon's essay. In the area of fire safety, the problem is that many providers have marginal operations from a profitability standpoint. The cost of upgrading their buildings to meet additional fire safety requirements is a major problem for a significant number of homes. On the other hand, the financial problems of the providers are only relevant to the objectives of this project to the extent they affect the quality or availability of care to citizens who need the services of Board and Care Homes (or if government programs need to be created, expanded or modified to assure that disabled people have access to proper care). This will be discussed in the Section, Some Impacts of Limited Funds, on page 12.

There are, of course, many elderly citizens with substantial incomes. Homes that we have seen that cater to this affluent portion of the market tend to be large and meet strict fire codes. When building new structures to meet the growing demand, the providers are likely to include all fire safety features they anticipate might be required.

⁵ Moon applies the term Board and Care Homes to a more restrictive set of facilities than the set of facilities considered as Board and Care Homes in the Life Safety Code and in the remainder of this report.

⁶ Reference: Moon, M., Gaberlavage, G., Newman, S.J., Preserving Independence, Supporting Need: The Role of Board and Care Homes, Public Policy Institute, American Association of Retired Persons, Washington, DC, no date, pp.vii, viii.

Homes for Persons with Developmental Disabilities

State governments have a long history of providing care for mentally retarded citizens. Years ago the norm was to provide care in large institutions. (In 1967, 194,650 individuals resided in large publicly operated institutions.)⁷ There has been a trend toward providing care in smaller--non institutional--settings, including small Board and Care Homes and the disabled person's own family home. (In 1988, 91,440 individuals resided in large publicly operated institutions.)⁸ However, the state governments have tended to maintain responsibility for the care of the mentally retarded and other developmentally disabled persons. Their programs are supported and influenced by strong advocacy organizations. As a result, sufficient government funding is often available to support high quality Board and Care Homes, and even, sometimes, provide financial and other support to natural and adoptive parents.⁹ In many cases, the state actually operates some Board and Care Homes. More often the state strongly monitors and regulates privately operated homes funded by or through the state. Sometimes, one state agency monitors and regulates Homes operated by another state agency. *In other words, the funding is available and the organizational structure is in place to provide and assure high quality care for many developmentally disabled citizens.*

While funding is generally available, it is limited. One state, slightly larger than average, in 1991, had 1100 developmentally disabled citizens on its waiting list for placement in Board and Care Homes. Funds were not available for establishing new homes more rapidly."

A major source of funds is the Health Care Financing Administration's Medicaid Program to support ICF/MR's. While in some states these funds help support state institutions, this program is a major source of funds to support high quality Board and Care Homes. Another major user of Medicaid funds is the Home and Community-Based Waiver Program?

⁷ Reference: Braddock, Hemp, Fujiara, Bachelder, and Mitchell (1990), *The State of the States in Developmental Disabilities*, Baltimore, Paul H. Brookes Publishing Company, 1990 as referenced in New Directions, National Association of State Mental Retardation Program Directors, 113 Oronoco St. Alexandria, VA 223314, April 1990, Vol 20, No.4)

⁸ Reference: New Directions, IBID.

⁹ For example, Michigan's Family Support Subsidy program which is part of the state's Permanency Planning Program "provides monthly stipends to families (including adoptive families) that have a child with severe disabilities." Reference: New Directions, IBID.

¹⁰ Washington Post, Vol. 114, No. 209, July 2, 1991, p. B1.

¹¹ In the Medicaid Home and Community-Based Waiver Program a state may apply for a waiver from "certain statutory requirements to permit a state to cover [with Medicaid funds] personal care and other services (excluding room and board costs) for individuals who, without such services, would require institutional care in a Medicaid-certified institutional setting." Reference: Smith, G.A., Katz, R.E., Gettings, R.M., *Federal Funding Inquiry: Medicaid Home and Community-Based Services for Persons with Developmental Disabilities: The Home and Community-Based Waiver Experience*, National Association of State Mental Retardation Program Directors, 113 Oronoco St. Alexandria, VA 22314, September 1989, pp. 9,10.

Homes for Mentally Ill Persons

States also have a long history of providing care for the mentally ill. Years ago the norm was to provide custodial care in special hospitals. As treatments have improved, many more mentally ill persons are able to live outside these hospitals. Some can live in the community without special assistance. Others need the services of a Board and Care Home. However, there are state agencies with responsibility, capability, and funds to assist individuals with mentally illnesses who are not in state hospitals.

The needs of mentally ill persons vary greatly. Some need and receive the level of care given by a hospital. Others live with their families or live on their own in typical housing. In between, there are people who need the protective oversight of a Board and Care Home and others who only need a place that provides room and board. Just as there are varied needs, the states and local governments provide a range of types of assistance. Some mentally ill persons live in high quality Board and Care Homes with state financial assistance and supervision. Others live in marginal Board and Care Homes, similar to those described above for the elderly, using SSI funds or their own funds. Many live in facilities that do not provide personal care services.

When establishing Board and Care Homes in residential communities, there is always the possibility of community opposition. New Homes for the mentally ill are more likely to experience this opposition.

Some Impacts of Limited Funds

Limited Funds Impact Homes Differently

For purposes of understanding how the Board and Care system works, we can think of homes as being of two types: homes where the charges are set to cover the cost of providing the desired quality of service; and homes where the quality of service is set by the level of the available financial resources. (Obviously, in any given home, it may be a combination of both of these two factors.) As explained above, Homes for developmentally disabled persons tend to be of the first type, Homes for elderly people tend to be of the second type, and Homes for mentally ill persons are of both types.

When the charges are set to cover the costs of providing service, the additional costs of upgrading fire safety are passed on to the residents or the person/agency paying the costs. If the additional costs do not exceed the ability to pay, the increased fire safety can be achieved with minimal disruption to the Home and its owners. In such facilities, upgrading to meet the requirements of the Board and Care Chapters is usually, if not always, not a problem. However, these will tend to be the better homes and many of them would already have had a high level of fire safety when the requirements of the Board and Care Chapters were first required.

This program permits the providing of care outside an "institutional setting" and hopefully at a lower cost than in an ICF/MR.

Economic Observations

The cost of fire protection hardware is only one part of the budget of a Board and Care Home. The capital cost may appear to be large. However, if the cost is amortized over a number of years, the annual cost would normally be a small portion of the annual budget. If the operator of the home is a well financed corporation with the ability to borrow funds, then the annual cost is a meaningful concept. On the other hand, if the Board and Care Home is a small family activity--that is, a "Mom and Pop" operation--then the problem of obtaining the capital cost is of paramount concern.

The cost of upgrading a given building to meet fire safety requirements is a fixed cost, independent of the services provided. However, the proportion of the budget allocated to meeting fire safety requirements is less in Homes that provide a high level of services. For example, some Homes serve the recovering victims of traumatic brain injuries. The residents are receiving intensive rehabilitation training which can be very expensive. The cost of fire safety is small compared to the cost of the staff that provides these rehabilitation services. It should not be surprising that in an interview with a person supervising a number of such homes, for a large corporation, meeting fire safety requirements was not considered a problem. He believed many of his Homes are exceeding applicable fire safety requirements.

Many small Homes provide services to residents whose only source of funding is SSI payments. In such Homes the quality and quantity of service is limited by the level of the SSI payments. (The 1992 Federal guarantee level for SSI payments is **\$422**. Some states supplement this by varying amounts. New York gives a large supplement; in 1990 SSI recipients received \$791-\$821 per month.) Many of these Homes serving residents funded only by SSI payments are not run by corporations that can amortize costs over a number of years.

New economically marginal small Board and Care Homes are likely to be established in existing houses. Often an existing house is selected because it is determined to be cheaper to retrofit an existing dwelling than to construct a new building. The costs of upgrading buildings to meet fire safety requirements have major economic impacts.

Some have argued that many of these economically marginal homes do not provide an adequate level of safety and care. Others have argued that many of these Homes provide better care than any large facility can provide. Others state that only these family operated Homes can provide satisfactory care that the less affluent residents can afford. The cost of fire safety requirements does affect decisions regarding establishing such Homes and increases in fire safety requirements do affect decisions regarding whether to continue in business.

Impact of Insufficient Funds

However, just as there is a need for a minimal level of fire protection, there are legal requirements for a minimal level of the other services. When the cost of providing minimal services exceeds the SSI payment or the ability of the residents to pay, there are several possible consequences.

The less efficient providers will go out of business and the more efficient providers will expand to fill the gap.

A sufficient number of providers will go out of business that there will be a shortage of beds and some disabled citizens will not be able to find housing in regulated homes. They may live in "underground" housing, they may become homeless, etc.

Providers may increase the size (population) of their homes by expanding existing homes or moving to larger buildings. For example, we were told that in New York State a newly developed home, with residents supported solely by SSI payments, needs to have at least 40 residents to be economically viable.

Providers may decrease the size (population) of their homes to get below the size at which the rigorous regulations apply. For example, in most jurisdictions that use the Life Safety Code, the Board and Care fire regulations do not apply if the number of residents is three or fewer. In most jurisdictions that use one of the three Model Building Codes or an associated fire code, the Board and Care fire regulations do not apply if there are five or fewer residents.

The movement toward housing disabled citizens in small group homes instead of large institutions has been based on the assumption that better care can be provided in the smaller homes. The project is focussed on fire safety and will not address the positive and negative consequences of small homes being replaced by homes with 40 residents. The downsizing of homes to avoid regulations is obviously contrary to efforts to upgrade the safety of homes through regulations--even if, in individual cases, a high quality of safety and of care is provided in the downsized homes.

In some cases, the level of available funding is not clear cut. If the rates change, some residents may be able to afford the increase and others may not. The provider must make decisions regarding how much to increase his charges and how to decrease costs.

Several states are now requiring all Board and Care Homes to have automatic sprinklers as a fire safety feature. With new sprinkler technology, the cost of retrofitting existing buildings with sprinklers has been substantially decreased, leading to an increase in the number of jurisdictions requiring sprinklers. Despite the decrease in cost, many providers cannot afford the cost of retrofitting their homes with sprinklers.¹² Several states have programs that have permitted the state to pay for the installation of automatic sprinklers in some privately owned and operated Board and Care Homes. The states that have paid for such sprinklers include Ohio and New Hampshire. The existence of such programs partially substantiates the analysis above about the financial problems of the providers in meeting new requirements and implies that there is a concern by state officials about the availability of a sufficient number of homes in which to place their disabled citizens. On the other hand, it also supports the attitude of some safety regulators that "If it is really needed, they will always come up with the money."¹³

¹² As this project progresses, we are attempting to obtain information on the actual cost of retrofitting a residential building with sprinklers. Our preliminary information indicates that the cost for a minimal system in a former one family house would range from \$5000 to \$15,000. This is discussed in the Section, AUTOMATIC SPRINKLERS SYSTEMS, of this report.

¹³ The National Association of State Mental Retardation Program Directors has shown that sometimes, even when a program is really needed, the necessary funds to meet Federal statutory requirements may not be made available. Forty three states and the District of Columbia responded to

So far our sources of information have been government officials and providers, and we have directed our attention to the fire safety requirements. If there are disabled citizens who need and are not receiving personal care services because of the cost or the unavailability of services, our efforts to date should not be expected to identify them. On the other hand, we have been told about programs that are being developed by the Department of Veterans Affairs and by New York State to establish Board and Care Homes for the homeless.^{14 15} This implies that responsible government officials at both the state and Federal levels have concluded that the plight of some of the homeless is due to either the lack of proper Board and Care Homes or government programs to place disabled citizens in Board and Care Homes. Future efforts will be directed at obtaining information about disabled citizens who are not being successful in obtaining housing in Board and Care Homes?

a questionnaire about an early intervention program for infants and toddlers authorized under Part H of the Individuals With Disabilities Education Act. **An** overwhelming majority of the respondents cited the lack of adequate state/local funding for early intervention services as the most important single barrier to meeting the statutory objectives of Part H." Reference: New Directions, op. cit. Feb 1991, Vol. 21, No. 2, p.5.

¹⁴ The Department of Veterans Affairs has a \$4,000,000 pilot project to purchase and operate Board and Care Homes for homeless Veterans. It is assumed that substantial additional funds will be made available if the pilot program is successful.

¹⁵ The proposed program in New York is for people who have been involved in the mental health system. They plan to use old hotels, apply the "Prompt" requirements of the Board and Care Chapter, and house only residents who are fully capable from a fire safety standpoint. The Homes will provide little or no protective oversight.

¹⁶ There was a fatal fire in a multistory building in Roanoke, Virginia. One floor of the building was occupied by a Board and Care Home. The other floors housed similar residents but did not provide the services, care and oversight of the Board and Care floor. The occupancy classification of the other floors could be called Dormitory or Residential Hotel. The fire and the fatalities were on a Dormitory floor. Some of the residents in the Dormitory floors were high functioning and some were even employed to work in the Board and Care Home. However, some of them were physically disabled and unable to use the stairs. On the other hand, we were told that all of the residents in the Board and Care Home could physically use the stairs. **An** employee made this a requirement for admission for fire safety reasons: the facility had a previous fatal fire. She was able to enforce this requirement because there was sufficient demand for a limited number of beds. It appears that some of the residents in the Dormitory would have been more appropriately placed in a Board and Care Home. For these residents, we were unable to determine whether they preferred the independence of living in the Dormitory or they were unable to find space in a conveniently located Board and Care Home at a price they were willing or able to pay.

HOW MUCH FIRE SAFETY

Introduction

The level of fire safety that should be required in Board and Care Homes, and other residential arrangements for disabled citizens, is a policy decision. This document reports the results of a research project and as such should not recommend a level of safety. Nevertheless, the sponsors are supporting this research in the expectation that the results will provide assistance in setting the fire safety rules for housing citizens with disabilities. The project has been designed, and this report written, in an effort to provide information that will assist. The information provided will include not only technical information related to fire safety but other factors that would normally be considered in developing and adopting fire safety codes.

We assume that the goal is to provide the highest quality living arrangements possible for the target population with the available resources. Fire safety is an important factor in judging the quality of the living arrangements. Most if not all of the readers of this report should agree that it is impossible to have a high quality living arrangement in a "fire-trap." In addition, most would want a very high level of fire safety. Furthermore, the level of available resources is not fixed: tax rates can be raised or lowered, and tax revenue can be reallocated.¹⁷

In the following sections we will discuss some of the factors that relate to the proper level of fire safety.

Right to Risk

Many advocates for disabled persons are very concerned with their quality of life. The advocates recognize that efforts to provide disabled residents with a stimulating environment will, at the same time, increase their exposure to danger. They claim people with mental retardation and other citizens with disabilities have the "right to risk." All active people expose themselves to risk every time they travel, or mingle with people who might have communicable diseases. In this report, we limit the maximum severity of risks covered by the phrase and concept "right to risk" to the risks that most people accept for themselves and their own families.

Cost, Quality of Life, and Limited Resources

Firesafety in Board and Care Homes costs money. Sometimes additional staff must be hired. Upgrading or adding fire safety features to a building can be expensive. There appears to be near unanimous agreement that this is often money well spent. On the other hand, as will be discussed in other sections of this report, funds are limited. **As** with all efforts to improve safety, there is a point of diminishing returns. One should not expect universal agreement regarding the point at which the costs outweigh the benefits. Nevertheless, codewriters must develop a consensus.

¹⁷ **Not all residents of Board and Care Homes and alternative housing arrangements are supported by a government agency. However, a large portion of residents, not supported by government agencies, have limited funds available.**

A realistic approach to the balance between cost, reduction of freedom and fire safety is expressed by Arthur E. Cote, Assistant Vice President and chief engineer for the National Fire Protection Association. "Safety depends on risk, and the degree of safety desired depends on how much we are willing to pay to eliminate the risk. The cost of eliminating certain risks is exorbitant, while the elimination of all risk is infeasible, even apart from cost. In addition, part of the cost of risk elimination is the reduction of freedom. Many aspects of safety systems have this effect as they come to bear on public acceptance of risk elimination."¹⁸ Most experts involved in code writing will agree with this statement. There is disagreement among experts as to what is a reasonable monetary cost and a reasonable reduction in freedom.

The Safety of Private Homes

Proponents of the right to risk might claim that it is justified to expose the residents of a Board and Care Home to the same level of risk as residents of typical homes and apartments, if the housing arrangement encourages a high quality of life. As is discussed in the Section, The Fire Safety Problems of Small Homes, on page 42, the safety record of private homes and apartments is considered neither good nor satisfactory by most fire safety experts. However, many private homes neither meet current codes nor have residents who follow good fire safety practices. Private homes that meet current codes and that have families following good safety practices have a better fire safety record." The fire safety record of these homes is a reasonable goal for Board and Care Homes for small groups of disabled citizens.

Availability of Funds

Two of the authors of this report have been members of the Board and Care Facilities Subcommittee of the Committee on the Safety to Life of the National Fire Protection Association. It is their observation that all committee members were concerned with financial realities, but there was an underlying assumption by some members--that has been verbalized--that government agencies can and do always come up with the necessary money. This assumption led these committee members to recommend strict standards based on their judgement as to what is really needed and what is reasonable, as opposed to what is affordable.

There is some justification for this assumption. There never seems to be enough money to do all that is needed and it is tempting to scrimp on fire safety and direct the available funds to other aspects of the operation or to other programs. As the saying goes, "The squeaky wheel gets the grease."

On the other hand, one must recognize that, at this point in a time, most states and cities are having financial difficulties and are cutting expenditures (i.e. programs), even those jurisdictions

¹⁸ Reference: Cote, A. E., Will Firesafety Standards Survive in the 21st Century?, Fire Journal, July-August 1991, Vol. 85, No. 4, pp. 36-45.

¹⁹ Cohn, B, Setting Life Safety Goals in Building Design, **SFPE** Engineering Seminar, National Fire Protection Association Fall Meeting, Montreal, Quebec, November 18, 1991.

that are raising taxes. For example, a headline in the Washington Post newspaper of July 2, 1991 reported:

Assistance to Disabled Falls Short
6,000 Md. Residents Wait for Services²⁰

The problems and impacts of limited funds is a recurring theme in this report.

Fire Incident Record

The Administration on Aging is participating in funding the project of the National Institute of Standards and Technology (NIST) related to Fire Safety in Board and Care Homes. During the project planning stage, the Administration on Aging requested that an additional task be performed regarding fire safety trends in Board and Care Homes. In partial fulfillment of this task, the National Fire Protection Association (NFPA) has submitted to NIST a report of a special analysis of fires in Board and Care Homes.

The total number of fires is small from a statistical standpoint. Usually it is difficult to determine patterns with such limited data. In the previous Interim Report, we noted that both the number of fatal fires and the number of fatalities per fatal fire had been dropping since the early part of the decade of the 80's. The data below shows a rapid increase in such fires around 1978 with 158 fatalities in the four years 1978-1981. This decreased to 39 in 1982-1985 and 29 in 1986-1989. However, there was an increase to 45 for the two years 1990 and 1991. We could develop a list of possible reasons for this increase, but there is a reasonable chance that it is largely due to a combination of improved reporting and random fluctuation.

Possible reasons for the apparent good fire record prior to 1978 are:

There were fewer Board and Care Homes in the early 70's.

The data base does not include all fires: it may contain a larger percentage of the fires in the latter part of the decade of the 70's than the earlier part, as the data collection procedures were improved.

The distinction between Board and Care Homes, Boarding Houses, and Health Care Facilities was less clear to those reporting fires--some Board and Care fires may have been reported as Boarding House and/or Health Care fires.

It should be noted that the 1970 fire in the list below is often referred to as a Nursing Home Fire. However, a careful analysis of the published fire report led to the conclusion that the facility was more similar to a Board and Care Home than a Nursing Home. (Note: since the 1985 Edition, the Life Safety Code has required that a large Board and Care Home classified as Impractical shall meet the requirements for either Custodial Care Facilities or Limited Care Facilities in the appropriate Health Care Occupancies Chapter.)

²⁰ **Washington Post**, Vol 114, No. 209, July 2, 1991, p. B1.

The actual improvement in fire safety is probably even greater than it appears. The number of Board and Care homes is generally assumed to have been continually growing and we have been informed by several sources that the residents are becoming more disabled on the average. (On the other hand some of the newer homes have so few residents that they may no longer be called Board and Care Homes and might not be so classified in data bases.)

While the improvement coincides with the publication of the 1985 Edition of the Board and Care Chapter of the Life Safety Code, it cannot be claimed that the reduction is due to the Code. In the early part of the 1980's, some states enforced strict new laws and regulations requiring the upgrading of the fire safety in Board and Care Homes. New Jersey is a dramatic example: there were several major fires and they increased the fire safety requirements before publication of the Board and Care Chapter. Their safety record improved.

A major goal in developing the precursor to Chapter 21 (the original Board and Care Chapter) was to have a set of fire safety requirements that would provide a high level of fire safety without unnecessary costs or unnecessary interference with the programs in the home. The data and information collected to date in our project--including the **NFPA** report--indicate that adoption and enforcement of the Board and Care Chapter of the Life Safety Code does, in fact, provide a high level of fire safety without unnecessary costs or interference with the operation of the home.

KNOWN FATAL, FIRES IN BOARD AND CARE HOMES

	Number of Fires	Number of Deaths	Deaths per Fatal Fire
1970	1	31	31.0
1971	1	2	2.0
1972			
1973	1	10	10.0
1974			
1975	1	2	2.0
1976			
1977	1	4	4.0
1978	5	16	3.2
1979	5	61	12.2
1980	5	34	6.8
1981	8	47	5.9
1982	1	3	3.0
1983	5	27	5.4
1984	2	7	3.5
1985	1	2	2.0
1986	7	20	3.1
1987	2	4	2.0
1988	1	2	2.0
1989	2	3	1.5
1990	8	32	4.0
1991	3	13	4.3

Despite the plethora of detail, patterns are beginning to become apparent. In this section we present brief descriptions of some of the patterns we have found. The purpose of this section is to give the reader a summary of our preliminary findings. Much of the material in this section is described in more detail in later sections.

We found a surprisingly consistent satisfaction with the current state fire regulations by the state officials we interviewed. Those who were using the Board and Care Chapter of the Life Safety Code liked it and some even praised it. (See Section, General Attitude toward the Board and Care Requirements on page 31, for more details regarding attitudes toward the Board and Care Occupancies Chapters of the Life Safety Code, including negative comments from some Fire Marshals.) However, those using other requirements were also satisfied. Our interpretation is that government officials tend to be happy with any set of rules that works, especially if the rules cover an item which is not of immediate concern or an item in which they are not expert.

Another explanation for the general high level of satisfaction is that people tend to accept the status quo and to distrust change. The old saying, "If it ain't broke, don't fix it," applies. Once a set of fire safety requirements has been in effect and enforced for several years, there is a tendency for all interested parties--providers, regulators, funding agencies, and advocacy groups--to adjust to the rules and become satisfied with them, especially if the level of fire protection is high. (If the level of protection is low, there may be pressure to raise it, especially after a fatal fire.) The problems in retrofitting buildings to meet the requirements will have been solved one way or the other. A few years ago there was a concern that the cost of the proposed fire rules would cause providers to go out of business. We cannot determine how many providers did go out of business, but we detect an attitude among some regulators that those that did go out of business were marginal operations and that the board and care system was not significantly hurt by their loss. Those that survived should be concerned with current problems rather than historical ones. *Also*, some providers that had difficulty meeting strict requirements would not like to see the requirements decreased: that would decrease the cost for new competitors to open competing homes.

On the other hand, we have found two important exceptions to the above generalizations. Respondents did raise their concerns about costs and, where the Board and Care requirements are being used, the validity and/or reliability of the level of fire protection chosen.

Those officials who have expressed concern about the cost of meeting the fire safety rules focussed on the problem of having a sufficient number of homes to house all those needing care, especially disabled citizens relying solely on low SSI payments. (To avoid biasing the data on this issue, we do not raise the cost issue in our interviews.)

An increase in the fire safety requirements can have a major impact on the providers. It can also have an impact on residents in homes and on agencies that fund the residents or otherwise have responsibility for the residents. This increase can come from new requirements or from improved enforcement of existing requirements. (It is interesting to note that when fire safety requirements are increased, there is a tendency to "grandfather" in existing facilities: that is, existing building are evaluated on the basis of the rules in effect when they were first approved.)

The Board and Care requirements of the 1985 Edition of the Life Safety Code are used in most, if not all, states to determine if ICF/MR facilities meet the requirements for Federal funding. It is a HCFA requirement. This means that there are state officials in all states that are familiar with the Life Safety Code requirements. Based on our preliminary data, it appears that at least some of the facilities housing mentally ill clients must meet the Life Safety Code's Board and Care requirements in over half the states. Similarly, it appears that at least some of the facilities housing frail elderly clients must meet the Life Safety Code's Board and Care requirements in over half the

states. Therefore, many states are in a position to make decisions regarding use of the Board and Care requirements in the Life Safety Code based on first hand experience.

A major concern to officials in adopting the Board and Care requirements in the Life Safety Code is the need to classify the evacuation capability of the home. This is a novel feature in the Code. Homes are classified as "Prompt", "Slow", or "Impractical to Evacuate." The Life Safety Code provides for several different procedures that may be used to determine the evacuation capability. In the past, officials have expressed concern about the feasibility and validity of the procedures. We have found that many jurisdictions have developed procedures for classifying Homes that work to the satisfaction of the responding official. However, in a few cases the responding officials were not satisfied with the validity of the classifications--they did not trust the classifications. In some jurisdictions, they avoid the problem of classifying the Homes by treating all Homes as "Impractical to Evacuate." In some states they only use the "Prompt" classification because they mandate Health Care fire safety requirements if any resident requires physical assistance. Few agencies adopt the Code without some exceptions, modifications or additional requirements. Many states add requirements for fire extinguishers. See Section, Additional Requirements Imposed by Jurisdictions or Agencies Using the Board and Care Chapters, on page 32.

Board and Care Homes tend to be regulated by state agencies. Facilities that provide only room and board tend to be regulated by local fire authorities and building code agencies. Regulation by social service agencies is often minimal for homes that do not provide personal care. These homes should have more capable residents than normally found in Board and Care Homes but since they are not really regulated, special effort is required to assure that Boarding Homes do not have residents who require personal care services.

TRENDS THAT SHOULD AFFECT FIRE SAFETY IN BOARD AND CARE HOMES

Fire Safety Requirements

There is a long term trend to require higher levels of safety over time. There are several reasons for this including:

New technology permits upgrading fire safety at a reasonable cost.

Research, including studies of fatal fires, reveals (or helps substantiate the need for) changes in the regulations that would increase safety.

Some fire safety experts and some government officials believe that their role is to seek an ever higher level of safety.

There are two long term trends that are affecting fire safety requirements for all buildings, including Board and Care Homes: the increased use of smoke detectors and the increased use of automatic sprinklers.

Automatic Sprinklers are discussed in the Section AUTOMATIC SPRINKLER SYSTEMS on page 27 and the non fire related impact of their increased use is discussed in the Section on Some Impacts of Limited Funds on page 12. Smoke detectors are discussed in the next Section.

Smoke Detectors

About 20 years ago great strides were made in decreasing the cost of smoke detectors. Their use quickly became commonplace. Now, it is not a question of whether or not their use is required in Board and Care Homes but, rather, questions such as where in the facility they should be required, how they should be powered (i.e. are battery powered detectors permissible?) and how should they be interconnected. Research has shown that only a few detectors, properly placed, are required to significantly upgrade safety. Additional detectors, of course, will provide additional protection and the 1991 Edition of the Life Safety Code requires more detectors than earlier editions. Many experts believe that putting a detector in each bedroom will provide enough additional safety to justify the purchase price of the detectors, the cost of connecting them to an alarm system, and the "costs" of more frequent false alarms. There is less agreement that the additional detectors in the bedrooms provide a significant increase in safety in facilities with quick response or residential sprinklers. The 1991 Edition of the Life Safety Code requires smoke detectors throughout new Board and Care Homes, including bedrooms. However, a controversial exception in the Code permits them to be omitted in the bedrooms of some small Board and Care Homes if the building has a sprinkler system with fast response or residential type sprinkler heads in the bedrooms? We can anticipate efforts to eliminate this exception in the next edition of the Code.

The cost of installing extensive smoke detector systems and sprinkler systems is much less when constructing a new building than when installing them in an existing building. As discussed in the Section, Additional Requirements Imposed by Jurisdictions or Agencies Using the Board and Care Chapters, on page 32, even without considering the improved safety, an operator may wish to install these systems in new buildings to avoid the risk of expensive retrofits in the future.

Medical Care

Several of our respondents commented on the trend of placing frail elderly citizens and others in Board and Care Homes rather than in Nursing Homes. Some experts applaud this trend because they believe that non institutional accommodations are superior to institutional ones and Nursing Homes are usually operated as institutions. However, it appears that the primary goal is to save money--it is part of an effort to attack the "Health Care Crisis." See the discussion of OBRA-87 in the Section Capabilities of the Residents on page 26.

In the Section Distinguishing Between Health Care and Board and Care Occupancies on page 35, we noted that some patients in nursing homes are being placed in residential settings where the necessary nursing care is provided. From our standpoint these are experimental programs and it is too early to predict whether or not this will become a trend.

²¹ The 1991 Edition also permits the omission of some detectors outside the bedrooms if all bedrooms do have smoke detectors and the building has a sprinkler system using quick response or residential sprinklers.

Community Supported Living: Arrangements²²

Some citizens live in their own apartments or houses (as owners or renters) even though they need some assistance to maintain the dignity and independence that comes from living in ones own home. The personal assistance may include any or all of the following examples: help in balancing a checkbook; training in fire safety including overnight supervision until training is completed; meals on wheels; and assistance in facing health, emotional or employment problems. The assistance may be provided around the clock but more often is provided on an as needed basis, which may or may not be on a schedule. The person needing the assistance may be living alone; living with a spouse who also needs assistance; living with a roommate who is receiving a financial consideration for providing some of the needed support; or living with a roommate who is a friend, who is not considered as having a disability, and who is not responsible for providing assistance but probably does provide some anyway.

There is usually some social agency, public or private, that coordinates the providing of the assistance. The employees of this social agency may provide none, some or all of the assistance needed. Some experts recommend that the social agency limit its involvement to coordination and that all direct services be provided by others.

There appears to be two major ways that a citizen can become involved in a such a living arrangement.

A person or couple may be living independently until their abilities are diminished by aging, sickness, or accident. They may not wish to leave their homes and move to a Board and Care Home, enter a nursing home, or move in with their children, parents or other relative or friend. Instead, they may prefer to remain in their own home and contract for the services they need to remain living there.

A person may have been cared for in a Board and Care Home, a nursing home, or another type of institution. A social agency arranges for the person to move to their own apartment or house and arranges for the provision of the needed support that the person requires to live "independently."

Gary Smith's 1990 report "Supported Living: New Directions in Services to People with Developmental Disabilities"²³ discusses, in detail, the use of this new approach in providing care for developmentally disabled citizens. Smith claims that Board and Care Homes of any size are basically institutions because they embrace the same service delivery principles: namely, "the application of 'care and treatment' in specialized facilities by paid professional and paraprofessional staff." One organization is responsible for all aspects of care, including room, board, and personal

²² There are a number of labels used for naming the housing arrangements described in this section. We use the title "Community Supported Living Arrangements" because that is the term used in Federal Legislation (OBRA-90, P.L. 101-508.) We will not use any other terms because the other terms we have heard are also used with other meanings in other contexts.

²³ Gary Smith, Supported Living: New Directions in Services to People with Developmental Disabilities, 1990, p.11.

care. He describes an alternative approach where one or more disabled citizens are placed in normal housing and an individualized program of assistance is designed and provided. The assistance is often provided by a different person or organization than the landlord, or the agencies providing supervision and funding. Smith calls these combinations of housing and care "Supported Living Programs" or "Supported Living Arrangements." The Omnibus Budget Reconciliation Act of 1990 (OBRA-90: P.L. 101-508) calls them "Community Supported Living Arrangements." As recognition of this approach, but not a full commitment to fund them, the act permits a few selected states to support such arrangements with Medicaid funding."

Such an approach sounds very expensive and, in fact, can be very expensive: he cites costs up to \$286 a day (i.e., over \$100,000 a year). However, he claims that the average cost is no greater than other more traditional approaches. In fact, he claims that, in some cases, using this approach can be a cost savings measure because each client receives only the personal care he or she needs.

Smith documents in his report the success of programs based on his Supported Living Arrangements model in a number of states. Based on his report, we can assume that an increasing number of disabled citizens will be housed in Community Supported Living Arrangements.

Often a person with disabilities is placed in a Board and Care Home where he or she is trained in fire safety and other skills prior to placement in an independent living arrangement. In Community Supported Living Arrangements, based on the model in Smith's report, disabled people are moved into regular housing of the community before they are trained for independent living: it is assumed that this training is more meaningful and relevant when conducted in Community Supported Living Arrangements rather than in a small Board and Care Home which Smith considers to be a small institution.

Programs to provide assistance to those wishing to remain in their own homes are more likely to evolve than to be planned and established. For example, an organization may be providing housing for aging but fully capable citizens, perhaps using federal subsidies from the Federal Department of Housing and Urban Development. As their tenants become older and less capable, they might provide some assistance for their tenants in obtaining services that the community provides, such as meals on wheels. The level of assistance might grow with time as their tenants continue to age. The landlords have conflicting goals. They want to permit their tenants to "age in place," and delay or avoid the emotionally painful move to a Board and Care Home, to their children's home or elsewhere. They also wish to maintain a group of healthy and attractive tenants so that they can attract a continuous flow of new tenants to fill vacancies. Those landlords, that are deeply concerned with having their tenants age in place, will provide or arrange for the necessary support services.

As with Board and Care Homes, the fire safety of these homes can be regulated by the appropriate fire safety agency, such as the Fire Marshall, and/or by the responsible Social Service Agency. Because of the small number of residents in each dwelling or apartment unit and the architecture of the units, one would anticipate that most regulators would apply the normal requirements for one and two family homes, or the normal requirements for apartment houses. That is, there would

²⁴ The eight states selected are California, Colorado, Florida, Illinois, Maryland, Michigan, Rhode Island, and Wisconsin.

be no additional requirements based on the disabilities of the residents. Fire safety regulations for these homes are discussed in the Section, FACILITIES TOO SMALL TO BE REGULATED AS BOARD AND CARE HOMES, on page 39.

Capabilities of the Residents

Ten years ago, when designing the precursor of the Board and Care requirements in the Life Safety Code, it appeared that the capabilities of the developmentally disabled residents in Board and Care Homes would normally either improve or remain rather stable. The residents were often receiving intensive training after years of living more passive lives. Now when addressing a wide range of Board and Care Homes, there is reason to expect a good percentage of Homes will tend to house residents that might become less capable, as a group, over time.

The Omnibus Budget Reconciliation Act of 1987 (OBRA-87), subtitle C of Title IV, contained sweeping changes in federal statutes governing Medicaid and Medicare-certified nursing homes. The changes impacting on this project are designed to eliminate inappropriate nursing home placements involving persons with mental illness, mental retardation and related conditions. Each state is now required to establish Preadmission Screening and Resident Review (PASARR) programs to assure that new admissions to nursing homes and current patients in nursing homes do, in fact, need the level of care provided by such institutions. The Health Care Financing Administration published its regulations in the March 23, 1990 edition of the Federal Register: the legislation is now having an impact on the characteristics of new residents in Board and Care Homes. *We need to determine if PASARR programs are causing changes in the nature of Board and Care Homes that would affect the applicability of the Board and Care requirements in the Life Safety Code.*

We are being told that when Board and Care residents become less capable, the amount of deterioration necessary before transfer to a nursing home is increasing. From our vantage point we do not know how much of this is due to: 1. PASARR programs; 2. the scarcity of nursing home beds;²⁵ or 3. the desires of the family and providers to keep residents in a more familiar and stimulating environment, e.g. the concept of "aging in place". The important thing is that, over time, many Homes will be housing less capable residents.

The obvious solution is to build new facilities to meet the requirements for "Slow" or "Impractical to Evacuate" when the current or initial residents have a higher level of capability. However, this may not be a necessary or affordable approach when establishing a new small Home in an existing building, especially if the residents with disabilities are high functioning citizens with limited income. Furthermore, this approach means not taking advantage of some of the features of the Board and Care Chapters that permit a more homelike ambience and lower costs.

This trend toward Board and Care Homes housing less capable residents has been anticipated by some regulators and providers, especially for homes housing elderly residents where some regulators are concerned with the possibility of rapid deterioration of residents. Some agencies use the Board

²⁵ We have received conflicting information about the availability of nursing home beds. We have been told that there is a deliberate effort to keep the number of beds below the demand, and we have been told that PASARR programs are causing a surplus of beds and making nursing homes unprofitable.

and Care requirements in the Life Safety Code but add additional requirements. This is discussed in the Section, Additional Requirements Imposed by Jurisdictions or Agencies Using the Board and Care Chapters, on page 32.

AUTOMATIC SPRINKLER SYSTEMS

Effectiveness of Sprinklers

Automatic sprinkler systems respond to the heat of a fire, put water on the fire automatically, and sound an alarm. Their great value in suppressing fires is clear and well accepted.

Traditional sprinkler heads (standard response sprinklers) respond only after being exposed to a significant amount of heat. It requires a rather substantial fire to generate this amount of heat and such a fire can injure or kill people near the fire before the sprinkler system activates. Therefore, it has been claimed that sprinklers protect property but not lives. On the other hand, sprinkler advocates point out that "Automatic sprinklers are particularly effective for life safety because they warn of the existence of fire and at the same time apply water to the burning area."²⁶ It always has been accepted that sprinklers are effective in protecting people who are remote from the original ignition.

Since 1980, a variety of fast response sprinkler heads have become commercially available. Activation of these sprinkler heads require a much shorter exposure to heat than standard response sprinkler heads. Fast response heads can often respond before the fire seriously injures people in the room of fire origin and can even decrease the severity of the injuries to those in close proximity to the fire. It is generally agreed than an automatic sprinkler system, that uses the appropriate fast response sprinkler head, can provide significant life safety.

For many years the major standard for sprinkler systems was NFPA 13, Standard for the Installation of Sprinkler Systems, published by the National Fire Protection Association since 1896. This standard was designed for the protection of large buildings. Sprinkler systems designed to meet this standard should provide protection to all sizes of Board and Care Homes. However, the cost of such sprinkler systems is thousands of dollars per resident in small board and care homes.

In 1973 "the NFPA Committee on Automatic Sprinklers directed its attention to the residential fire problem."²⁷ The National Fire Protection Association now publishes two standards designed for residential occupancies: NFPA 13D, Standard for the Installation of Sprinkler Systems in One and Two-Family Dwellings and Mobile Homes; and NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height. Both standards use residential sprinklers which have fast response characteristics and other features that make them appropriate for use in residential buildings. NFPA 13D is designed to provide "a

²⁶ Cote, A.E., and Linville, J.L., Fire Protection Handbook, National Fire Protection Association, Quincy, Mass., p. 5-128.

²⁷ Reference: Solomon, R.E., Automatic Sprinkler Systems Handbook, Fifth Edition, National Fire Protection Association, Quincy, Massachusetts, 1991. p.515.

reasonable degree of fire safety" and NFPA 13R is designed to provide "a high, but not absolute, level of safety." (See Section A-1-2 of each standard.) Sprinkler systems based on these two standards should be much less expensive to install than traditional systems based on the NFPA 13 standard.

Therefore, now it is easy to install sprinkler systems that, as compared to systems installed in the 1970's, are both more effective in saving lives and less expensive to install.

Cost of Residential Sprinkler Systems.

There is no question that residential sprinklers systems (i.e., those meeting NFPA 13D or NFPA 13R) can be much less expensive than traditional sprinkler systems (i.e., those meeting NFPA 13). However, we have contacted some providers who have actually installed sprinkler systems in their Small Board and Care Home. They have given us information regarding the cost they have actually paid. They all had requested a system to meet the requirements of the Life Safety Code, that is, a NFPA 13D system. All report paying considerably more than the estimates we hear informally from sprinkler advocates; the estimates in Ruegg and Fuller, A Benefit-Cost Model of Residential Fire Sprinkler Systems,²⁸ and the estimates obtained by using Table 10 in Milke, J.A. and Bryan, J.L., Development of Cost Effective Techniques for Alleviating Water Supply Deficiencies in a Residential Sprinkler System.²⁹ Most providers were not reporting minor differences but, rather, prices that tend to be to several times the costs in the cited publications.

Based on our discussions with these providers and with others, we conclude that there appears to be a number of factors that might account for this difference:

The published estimates with the low costs appear to be for installing a large number of systems during the construction of new houses. Our reports of actual costs are for installation of a single system in an existing Board and Care Home. These costs would be considerably more for several reasons: 1. each installation required a separate design (and, where required, a separate approval by a government agency); 2. the labor costs for retrofitting an existing building with a sprinkler system should be much greater; 3. it is more efficient for an installer to install a large number of systems in a group of neighboring buildings, e.g., there could be cost savings in purchasing large numbers of sprinklers and large amounts of the plastic piping; and 4. the cost of making the sale would be less per sale but more per installation.

The installers (and the regulators that will approve the systems) have little experience with the standard. It is likely that the installers add a large sum for unanticipated costs, including time spent with regulators. It is also likely they add a sum to cover their learning costs.

²⁸ Ruegg, R.T., and Fuller, S.K., A Benefit-Cost Model of Residential Fire Sprinkler Systems, NBS Technical Note 1203, 1984, National Institute of Standards and Technology, Gaithersburg, MD.

²⁹ Milke, J.A. and Bryan, J.L., Development of Cost Effective Techniques for Alleviating Water Supply Deficiencies in a Residential Sprinkler System, NBS-GCR-87-533, 1977, National Institute of Standards and Technology, Gaithersburg, MD.

In many locations, there are few companies that are willing to install residential sprinklers. We have reports of providers having difficulty finding even a single local company willing to install a residential sprinkler.

The low cost claims are often for buildings that have access to a good municipal water system and the sprinkler system can be installed using the existing pipes supplying the building with water. Sometimes, it is necessary to install a new or additional pipe to the city water supply under or near the street, or to augment the system supplying well water, e.g. provide a larger or special storage tank.

Regulators sometimes add requirements beyond those in the published standard. That is, they require a more expensive system than that required by **NFPA 13D**. The additional requirements can range from: 1. more expensive valves; to 2. the preparation of a formal submission of the design of the sprinkler system for plans review and approval by the regulators.³⁰

A typical plumber can be trained to install the system defined by the two residential sprinkler standards. It is likely that many of the systems were installed by plumbers capable of installing more difficult systems. Their labor charges may be substantially higher.

The estimates were made years ago. There has been inflation since that time.

Therefore, the fear of unreasonable costs has been valid in many communities.

We anticipate that over the years the average cost of installing residential sprinkler systems will gradually decrease in many cities as the installers gain more experience and as there becomes more competition. The speed with which this happens in any community is partly a function of the number of installations in the local area. The increased use of sprinkler systems in new small Board and Care Homes will have some effect. In those communities where residential sprinklers are installed in other residences, the process will be accelerated. (The city of Vancouver in Canada is requiring residential sprinklers in all new houses.)³¹

On the other hand, there are a number of additional requirements that some local governments are adding that might help keep the cost high. **NFPA 13D** does not require the submission to a government agency of working plans prepared primarily for the mechanics who do the on-the-job installation and review by that agency of the system design basis; local agencies can require that review. Local licensing requirements can require that the work be performed by or under the close

³⁰ One provider stated, "We retrofitted a number of homes (single family-style) in 4 different localities and reluctantly will try in 2 more localities. Costs seem to have more to do with 1) local interpretations by code officials, 2) lack of competitive process with installers ... State Fire Marshal, State Health Dept, local Fire Marshal & Installer disagreed from beginning to end (?) of installation creating major frustration, additional costs & equipment. Even before 13R, **13D** requirements were unofficially upgraded to higher standards."

³¹ Pamplin, D.J., The Successful Implementation of a Municipal Sprinkler Program, National Fire Protection Association Fall Meeting, Montreal, Quebec, Nov. 17-20, 1991.

supervision of a very experienced mechanic. There may be only a few companies with such experienced employees and these companies may not be interested in low profit jobs. Local agencies can add hardware requirements to those in the code such as requiring sprinkler heads in small closets. (NFPA 13D does not require sprinkler heads in small closets.) We assume that these additional requirements are added by officials who believe they are improving safety. **An** analysis of their cost-benefit is beyond the scope of this report.³² However, additional requirements do add to cost.

We have one specific report that illustrates and substantiates the thrust of the above discussion concerning reasons for the current high costs. A provider in San Antonio obtained two estimates for an automatic sprinkler system meeting the requirements of NFPA 13D. In the winter of 1991 a local contractor bid \$5,416 (including sales tax), while the local office of a national company, that usually installs large systems, bid \$14,620 (tax not included). The provider is happy with the work of the low bidder. We can assume that in San Antonio the cost has now come down.

Sprinkler Requirements in the Life Safety Code

The 1985 Edition of the Life Safety Code was the first edition to contain fire safety requirements specifically for Board and Care Homes. These requirements were developed over a period of years. During this development, the 1980 edition (and subsequent editions) of NFPA 13D were published. The first edition of NFPA 13R was not issued until 1989.

In the 1985 and 1988 Editions of the Life Safety Code, the only sprinkler requirement for small Board and Care Homes was for Homes rated as "Impractical." However, facilities having sprinkler systems do not need to install some of the fire safety features that other buildings must have. For example, most small facilities must have doors from sleeping rooms to hallways that are "self-closing or automatic closing upon detection of smoke" (Section 20-3.4 of 1985 Edition.) Facilities with automatic sprinkler systems are not required to have such door closers.

The 1991 Edition of the Life Safety Code requires that all new Board and Care Occupancies have automatic sprinkler systems. There was a general consensus that this was a good and proper requirement for all new construction. On the other hand, there is considerable controversy about requiring the installation of sprinklers in private residences being converted to Board and Care Homes. Some experts believe that this requirement will discourage the development of new small Board and Care Homes for high functioning disabled people because of the added cost. Others

³² It is our understanding that the field experience with sprinkler systems that meet NFPA 13D, without these extra requirements, has been generally good with one important exception. There was a fire with fatalities where it has been claimed that the sprinkler system failed to put the required amount of water on the fire and did not control the fire. This fire is discussed in Klem, T.J., Summary Fire Investigation Report Fatal Board and Care Fire September 19, 1990, National Fire Protection Association, Quincy, MA, no date.

claim that there often will not be any added cost, or only a minor added cost, because of the possible cost savings on other fire safety features when sprinklers are used.^{33 34}

Developing a consensus on this issue is particularly difficult for three reasons:

There is disagreement on the cost of installing the sprinkler systems as described above.

The impact of the increased cost varies so greatly. In many cases the residents have significant income and the impact is slight. However, if the residents are poor--and many are--and if additional funds are not available, the added cost can be the difference between living in a regulated Home or something less, which all sides to the controversy would disapprove.

Some are concerned from where the needed additional funds will come and if the funds will be available, while others do not believe that is a problem relevant to the discussion.

Agencies that believe that the 1991 Edition will cause too many problems can continue to use (or adopt) an earlier edition of the Code for all Board and Care Homes or just for small, new Homes in existing buildings. At least one provider organization, the National Association of Private Residential Resources, has asked the Health Care Financing Administration not to adopt the 1991 Edition.

USING THE LIFE SAFETY CODE

General Attitude toward the Board and Care Chapters

In the first Interim Report we stated that State officials, mostly from social service agencies, reporting on how the Chapter is being applied in their state, have indicated their opinion of the Board and Care Chapter in general. Twenty nine of 31 said that they had a positive opinion. Only one said she had a negative opinion. The other respondent was neutral.

Twenty of 25 felt that the strictness of the requirements was okay as is. One thought they were too strict and four wanted substantially more fire safety. Some thought the strictness of the requirements was okay but did suggest specific changes. The one respondent who had a negative attitude toward the Chapter was from a state agency that had recently adopted the Chapter but had

³³ The most common criticism of the Board and Care requirements in the Life Safety Code expressed to us is the need for bedroom doors to be self-closing or automatic closing. As stated earlier, this requirement does not apply to sprinklered buildings.

³⁴ The Board and Care Occupancy requirements in the 1991 Edition of the Life Safety Code were prepared by the Subcommittee on Board and Care Occupancies. Its submission did not require automatic sprinkler systems in small homes if the new Home is an existing building and if the home is rated as Prompt or Slow. The Committee on the Safety to Life changed this so that all new Board and Care Homes are required by the Code to have automatic sprinkler systems. This shows that there is not a consensus for this requirement.

not yet applied the Chapter to any operating facilities. She expected the administrative problems involved with handling the evacuation capability ratings to be a major problem and she believed that allowing up to **13** minutes to evacuate for the "Slow" classification did not make any sense. (She was one of the four who wanted more fire safety.)

We have found only one official who volunteered the information that he wanted to stop using the Chapter and replace it with another set of requirements: the requirements were thought to be too severe (i.e. too expensive to meet) for Homes in residential settings with high functioning residents.

We also queried officials in agencies not using the Chapter. Several officials stated their belief that their agency had not adopted the Board and Care Chapter partly because of the financial problems of upgrading current Homes. On the other hand, officials in other states commented that the Chapter did not provide sufficient safety. This information was obtained prior to publication of the 1991 Edition of the Code.

When the **NFPA** was considering the 1985 Edition of the Life Safety Code, there was strong criticism of the Residential Board and Care Chapter by some Fire Marshals. We did not know if these trends would continue when we expanded our sample to include more fire marshals. We are now obtaining information from State Fire Marshals about their use and opinions of these requirements. Our preliminary results indicate that about one quarter of the Fire Marshals have a negative opinion of the requirements, about one quarter are neutral, and about half have a favorable opinion. About a quarter believe that the requirements need to be significantly increased, about three quarters believe they are okay as is, and one State Fire Marshal checked that he believes they need to be significantly decreased.³⁵ Please note that this information was obtained after publication of the 1991 Edition of the Code. Some of the comments refer to the 1985 Edition, some to the 1988 Edition, and some to the 1991 Edition; while some respondents did not indicate to which edition they were referring.

Additional Requirements Imposed by Jurisdictions or Agencies Using the Board and Care Chapters

The Life Safety Code is a model code. When a Federal, State or local agency adopts the Board and Care requirements in the Life Safety Code, it has the freedom and opportunity to adopt these requirements with any changes, modifications, or additions that it deems desirable. In this section we will discuss several of the changes we have found.

A common change is the addition of a requirement for more portable fire extinguishers than required by the Board and Care Chapter. This change is an attempt to increase safety at a modest increase in cost. The amount of increased safety provided by these extinguishers is a subject of debate.

A few agencies have adopted the Board and Care Chapter only for homes where all the occupants are high functioning. For example, in Tennessee if any of the residents in a home requires physical

³⁵ One State Fire Marshal wrote "This questionnaire is totally pro **LSC**, assuming that everyone is using it and is pleased with it. It is not a building code, so you cannot design and build to it, and the health care people have too much influence causing the LSC in many cases to be too permissive, not providing the protection these people need and deserve."

assistance to evacuate, the fire safety of the home is evaluated using the requirements for health care facilities. These requirements are more strict than the requirements for "Prompt" and "Slow" Board and Care Homes and are not designed for the architectural features of small Homes? This modification makes it much more difficult to meet the fire safety requirements in a small home that can be evacuated in a timely fashion but where one or more residents has a physical disability that necessitates staff assistance in a fire emergency. The Board and Care requirements were designed for residents with all levels of disability, and these agencies may be good target groups for efforts to broaden the use of the Board and Care requirements.

The trend toward Board and Care Homes housing less capable residents has been anticipated by some regulators and providers, especially for homes housing elderly residents. Regulators are also concerned with the possibility of rapid deterioration of residents. (The evacuation capability classification is usually reviewed annually by a government agency.) Some agencies require all Homes to meet the requirements for "Slow" or "Impractical to Evacuate" even when the Home can be promptly evacuated. For example, Alabama requires all Homes for the elderly to meet the requirements for "Impractical to Evacuate;" Texas requires all Personal Care Homes to meet the requirements for "Slow" or "Impractical to Evacuate." Other states avoid the problem by requiring Board and Care Homes to meet Health Care (i.e., nursing home) requirements if any one resident is not capable of self preservation. While their motivation may be to have a higher level of fire safety, it does avoid the *fire safety* aspects of the problem caused by the deterioration of the capabilities of residents.

If all new facilities, *including those in old private homes*, being converted to Board and Care Homes, are required to meet the requirements for "Impractical to Evacuate," the policy will substantially increase the difficulty of setting up new Homes.³⁷ On the other hand, if they permit the use of the "Prompt" and "Slow" classifications in existing buildings to avoid the cost of expensive retrofits, this policy should not significantly impact on the opening of new homes.

³⁶ It should be noted that when using the 1985 and later Editions of the Life Safety Code, the user is required to apply the Health Care Requirements for Custodial Care Facilities or Limited Care Facilities to large Board and Care Homes with an "Impractical to Evacuate" classification. For 1 and 2 story buildings, these requirements for Custodial Care Facilities and Limited Care Facilities are slightly more stringent than the requirements for Nursing Homes and for Hospitals in the Health Care Occupancies Chapters.

The requirements for small Board and Care Homes, which are "Impractical to Evacuate," are designed to provide a similar level of safety as for large facilities, but are tailored to the architectural features of typical small facilities.

Therefore, for large facilities, it makes little difference whether the requirements of the Board and Care Occupancies Chapter or the Health Care Occupancies Chapter are used. However, for small facilities, using the requirements in the Health Care Occupancies Chapters means applying requirements designed for large buildings to small buildings.

³⁷ **An** official in Idaho reports that they build all their ICFMR's to "Impractical to Evacuate" standards for the following reasons: they do not trust the Evacuation Difficulty Index which they must use to meet HCFA requirements; they are worried about changes in resident status; and they do not have to worry about transferring residents to maintain evacuation difficulty levels.

Sometimes, the provider voluntarily builds to the higher set of requirements. This provides maximum flexibility in use of the building and avoids the possibility of costly future retrofits: the cost of the extra fire safety features is much lower in new construction than in retrofits. Several respondents volunteered the information that if the state is involved in the decision, e.g., a state run facility, all new buildings (as opposed to new facilities in existing buildings) will meet the requirements for Impractical. This was anticipated when the Board and Care Chapter of the Life Safety Code was being developed and is consistent with our interpretation of the intent of the Code.

From the providers' standpoint, using the more stringent requirements may be cost effective in some cases, even if there is additional initial cost and the value of the additional fire safety is not included in the analysis. The capabilities of the residents may change over time. Also, future regulations imposed on a facility might be more stringent. Although it is unlikely that more stringent requirements in the LSC for newly established facilities would be applied to existing facilities, state and local regulatory agencies are not limited to using the requirements in the LSC and could impose their own new requirements.

Some jurisdictions require automatic sprinkler systems in all Board and Care Homes, or in all new Board and Care Homes, in addition to the requirements of the 1985 and 1988 Editions of the Life Safety Code. It is generally accepted that an automatic sprinkler system significantly increases the fire safety of a Home and, starting with the 1991 Edition of the Life Safety Code, sprinklers are required in all new Board and Care Homes. The background, impacts, and controversial aspects of this requirement are discussed in the Section on Sprinkler Requirements in the Life Safety Code on page 30.

The Health Care Financing Administration has adopted the 1985 Edition of the Life Safety Code by reference for Board and Care Homes called ICF/MR's. They have added a restriction that the evacuation capability be determined only by calculating the E-score.³⁸

Fire Safety Evaluation System

The Board and Care requirements of the Life Safety Code permit the use of a specially designed Fire Safety Evaluation System (FSES) for Board and Care Homes. The purpose of this FSES is to permit the approval of Homes that do not meet all the specifications in the Chapter but that do have a combination of fire safety features that provide an equivalent level of safety. The use of the FSES can save significant amounts of money when converting existing buildings to Board and Care Homes when the 1985 or 1988 Editions of the Life Safety Code are used. Its use for new buildings does not provide much, if any, cost savings but it does provide a flexibility for potential innovative architectural designs that might enhance programs. One important potential use of the FSES, when using the 1985 and 1988 Editions of the Code, is to avoid the controversial requirement that results in all bedroom doors remaining in the closed position by use of an automatic closer. We are finding that a few jurisdictions are using the FSES. However, a majority of the jurisdictions either

³⁸ The E-Score is determined by rating each resident on his or her need for assistance when evacuating. The staff is also rated for its availability. The ratio of the sum of the residents' ratings to the sum of the staff ratings is the basis for the E-Score.

do not permit its use or they permit but do not encourage its use in most situations. In the third year we expect to better determine the extent of its use.

Incorrect Evacuation Plan

The fire safety requirements for Board and Care Homes in the Life Safety Code are based on the assumption that the residents will contribute to their own evacuation to the extent they are able. Normally if a building is rated as "Prompt" or "Slow," one can assume that the residents can assist significantly in their own evacuation. Even in some homes rated as "Impractical," many of the residents can assist in their own evacuation. To take advantage of this capability, the residents in Board and Care Homes should be trained to evacuate to the extent they are able. They should fully participate in fire drills to the extent they are capable, (unless they have special health problems and are in facilities rated "Impractical"). This is clearly required in the Life Safety Code Section 31-7.3, Fire Exit Drills. (1985, 1988 and 1991 Editions.)

Fire Drills in Nursing Homes normally do not include the movement of patients. The Appendix to the Life Safety Code states, "Fundamentally, superior construction, early discovery and extinguishment of incipient fires, and prompt notification must be relied upon to reduce the occasion for evacuation of buildings of this class to a minimum." (Section A-31-4)

Most Board and Care Home providers are aware of the importance of training and drilling residents. In fact, fire drill training is often very intense in many Homes for persons with developmentally disabilities. However, some providers with nursing home backgrounds are unaware of the different fire drill requirements. We have become aware of only one such case, but the improper drilling may have contributed to some of the fatalities in a Board and Care Home fire.

This hopefully is a rare problem but the potential risk it entails warrants special attention. We have carefully studied the wording in the Life Safety Code that covers this situation and have found it to be clear and unambiguous. We do not plan to suggest any change in the wording of the requirements in the body of the Code. We do plan to suggest adding information in the Appendix--which contains advice and guidance--to heighten awareness about the problem. We are preparing a Brochure to help publicize the need for residents to evacuate during fire drills.

Distinguishing Between Health Care and Board and Care Occupancies

The Life Safety Code defines a "Residential Board and Care Occupancy" as "A building or part thereof that is used for the lodging and boarding of four or more residents, not related by blood or marriage to the owners or operators, to provide personal care services." It also states that personal care "means protective care of residents who do not require chronic or convalescent medical or nursing care ... Personal care may include ... supervision in the areas of nutrition and medication, and actual provision of transient medical care."

The Life Safety Code describes Health Care Occupancies as "those used for purposes such as medical or other treatment or care of persons suffering from physical or mental illness, disease or infirmity: for the care of infants, convalescents, or infirm aged persons...are occupied by persons who are mostly incapable of self-preservation because of age, physical or mental disability, or because of security measures not under the occupants' control."

A Limited Care Facility is a type of Health Care Occupancy. The Life Safety Code, 1988 and 1991 Editions, defines it as "A building or part thereof used on a 24-hour basis for the housing of four or more persons who are incapable of self preservation because of age, physical limitation due to accident or illness, or mental limitations such as mental retardation/developmental disability, mental illness, or chemical dependency."

The distinction between Health Care Occupancies and Board and Care Homes is not clear cut. It is clear that facilities that provide medical care, or medical treatment beyond transient medical care, are Health Care Occupancies. It is generally accepted that facilities that are training residents for independent living are Board and Care Homes. There are many situations in between where the Authority Having Jurisdiction must make the classification. We found a number of cases where the social service agency regulates the facility as a Board and Care Home, but the Health Care Occupancy requirements of the Life Safety Code are applied. That is, only for fire safety purposes is the facility considered a Health Care Facility.

On the other hand, there are programs being established to care for citizens with medical problems in an environment similar to that in a small Board and Care Home--except that nursing care usually associated with a nursing home is provided. The smaller home-like ambience is designed to provide a higher quality of life than that found in traditional nursing homes. It has been claimed that the cost of providing care in these homes is less than the cost of care in a nursing home. If nursing care is provided, then the definitions in the Life Safety Code would lead to the facility being classified as a health care facility. However, the requirements in the Health Care Chapters were not designed with such a small building in mind, and applying them would preclude having the desired homelike ambience. It appears that the Board and Care Chapters are being applied in some of these cases; we need to check if our preliminary information is still true.

When a facility with 17 or more residents is rated as "Impractical" the Life Safety Code requires that the facility meet the requirements for a Limited Care facility. (The 1985 Edition uses the requirements for Custodial Care Facilities.) Therefore, for large facilities, the requirements are similar, whether or not the facility is classified as a Board and Care Home or a Health Care Facility. However, for a small facility, applying the Health Care Chapters means that fire safety requirements designed for a large building are being applied to a small building, and the fire safety requirements force the building to have an institutional rather than a homelike ambience, e.g. corridors must be at least **six** feet wide. Many experts consider the homelike ambience to be very important.

Many Board and Care Homes are more deeply involved in the giving of medicine than merely its supervision. Presumably the staff gives medicine to residents in the same way a mother might give medicine to her sick child or the mother might medicate herself. For example, intellectually alert people with diabetes inject themselves with insulin. Similarly, it would not be unusual for a staff member of a Board and Care Home to inject a diabetic resident with insulin. While we have found cases where Board and Care Homes are required to meet the Health Care Occupancy requirements of the Life Safety Code, we have not found any cases where the administration of medicines was the determining factor.

Difficulty of Mastering the Code

The Life Safety Code is a large document--the 1991 Edition is 296 large pages of small print. In addition, it makes reference to numerous other standards and technical documents. To properly inspect a building, the regulatory official must fully understand the parts of the Life Safety Code that apply to that building. Furthermore, he or she must understand the applicable parts of other standards that are incorporated into the Life Safety Code requirements by reference. Learning the Code is a difficult task. It takes much training and considerable experience. Once the Code is learned, it is easy to forget many of the details unless the official continues to work with the Code.

A major concern expressed to us, by providers, was the quality of the inspections. When an error is made by an inspector, it can result in unnecessary additional costs to the provider. The provider may consider these cost to be very expensive. In many cases the manager of the Home has limited knowledge of the Code and cannot afford an independent expert. He or she is in no position to question--much less challenge--the inspector. He or she has little choice but to follow the directives of the inspector.

Providers have reported cases of alleged errors made by inspectors. In one case, the provider complained that \$17,000 was spent to upgrade the safety of a small Board and Care Home before it was determined that the upgrading was not required by the applicable code.

A common complaint by providers was that new inspectors required additional fire safety features in Homes that had passed previous annual inspections by other inspectors. (If the requirements had, in fact, changed, the providers were not informed.)

One supervisor of inspectors in a rural state discussed his difficulty in maintaining a staff of properly trained inspectors. One of the authors of this report suggested that the less experienced surveyors specialize in one or two occupancies so that they would not have to work with the whole code; for example, one surveyor might inspect Board and Care Homes and possibly, one or two other occupancies. He stated that he had considered this, but the inspectors would have to cover too large a territory to obtain a sufficient number of buildings to inspect--travel time would be excessive.

Attitude Toward Need to Determine Evacuation Capability

The need to determine the "evacuation capability" of the home is a major concern to officials when adopting the Board and Care requirements in the Life Safety Code. This is a novel feature in the Board and Care Occupancies requirements of the Code. Homes are classified as "Prompt", "Slow", or "Impractical to Evacuate". The Life Safety Code provides for several alternative procedures that may be used to determine the evacuation capability. In the past, officials have expressed concern about the feasibility and validity of the procedures. Most officials we have interviewed expressed general satisfaction with the procedure they have selected. Based on the fact that it works to the satisfaction of a number of officials, there is good evidence that the approach is feasible.³⁹

³⁹ An official from Louisiana not only liked the concept of different requirements for different levels of occupant capability but informed us that Louisiana used that approach prior to the development of the Board and Care Chapter.

However, there is a small but important minority that expressed concern regarding the validity of the classifications.

There was a general satisfaction by government officials with the way that the use of the Board and Care Chapter was working in their jurisdiction. However, in some cases the state modified the requirements so that it was not necessary to address the problem of classifying the Homes. In some cases all Homes are considered "Impractical." In other cases, the Board and Care Chapter is applied only if all residents are capable of evacuating with no physical assistance: therefore, the Chapter is applied only to Homes that are obviously "Prompt" and the Health Care Occupancies requirements are applied to all other Homes. (We pointed out that the distinction between Health Care Occupancies and Board and Care Homes is not clear cut in the Life Safety Code in the Section, Distinguishing Between Health Care and Board and Care Occupancies, on page 35.) In Maryland, all Homes are classified as "Slow" until there is evidence that another classification is more appropriate. We cannot predict the response we would have received from the officials in these jurisdictions if they had been forced to work with a system that required differentially classifying all Homes.

One respondent from a State Fire Marshal's Office expressed concern that providers transfer residents just before announced inspections so that they can continue to be rated as "Prompt" (or "Slow") although at other times the facility would not meet the established criteria. Fortunately, we received only one such comment.

Determining: Evacuation Capability

The need to determine the "evacuation capability" of each Board and Care Home was a novel feature when the Board and Care Chapter was first published in the 1985 edition of the Life Safety Code. From the time the concept was first proposed there has been concern about the validity of the classifications.

The Board and Care Chapters of the Life Safety Code specify several methods that may be used to determine the Evacuation of a Board and Care Home. The two that are used most frequently are: timed fire drills; and calculation of the E-Score. Since the most dangerous time for a fire is when the residents are asleep, the fire drills should be conducted late at night or early in the morning while the residents are asleep. The designers of the code were concerned that late night fire drills might not be acceptable because of potential difficulties in verifying the drill times if regulators are not present at the drill. There were also concerns about the anticipated variability in occupant behavior and evacuation times from drill to drill. The E-Score was developed as an alternate method, recognizing that it had its own set of potential problems.

The following comment was provided by the Office of a State Fire Marshal. It shows how one agency has addressed the weaknesses of the two approaches. While the system outlined is unique, the attitudes stated and implied are typical of the attitudes expressed to us in our phone interviews. Note that, despite their reservations about the accuracy of the E-scores, they still use them to some extent.

Determinations are made by Fire Marshal Inspectors, using both E-score and monitoring fire drills. They prefer fire drills because they get a more accurate determination of

evacuation capability. Fire drills are used to verify the accuracy of E-scores in homes for mentally and/or physically disabled persons when the following occurs:

- 1) The E-score evaluation comes out prompt;
- 2) The E-score evaluation comes out slow; prior rating was prompt; and
- 3) Randomly, to check procedures & training for emergency evacuation.

The office has a policy that owners may request a fire drill if the home was previously rated prompt but the current E-score came out slow. They also hold fire drills in most of the homes that rate prompt. They have learned that the E-score evaluation can be inaccurate for various reasons:

- 1) Dependent upon judgment of the Inspector or the House Manager.
- 2) False fire drill records.

Fire drills, unannounced, are held between 10p.m. and 6 a.m. for either random checks or reevaluation of E-score.

Problems Discussed Elsewhere in this Report

The cost of residential sprinkler systems have usually been much greater than the costs predicted. **See** Section, Cost of Residential Sprinkler Systems, on page 28.

FACILITIES TOO SMALL TO BE REGULATED AS BOARD AND CARE HOMES

Background

Usually there are more fire safety requirements for large buildings than for small buildings serving the same function. For example, the Life Safety Code has more requirements for Hotels than for Lodging or Rooming Houses (which can be considered to be Hotels with 16 or fewer guests.) Similarly, there are more requirements for Apartment Buildings than for One- and Two-Family Dwellings. Several of the reasons for this follow. In large buildings, distances to exits tend to be larger: it takes longer to evacuate. The likelihood of an unwanted fire in a large building is greater because there are more sources of potential fire, including more people. The probability that the fire danger is caused by a stranger is greater. The potential workload for the fire department is greater in a large building: it takes the fire department more time to assemble a large force than a small one. The maximum potential property loss varies with the size of the building. Finally and probably most important, there is more public concern for a fatal incident that takes a large number of lives than for one that takes a small number of lives: this is well accepted also in transportation safety--almost nothing is spared to avoid a crash of a large passenger plane.

In this section, we address the question of the proper combination of fire protection features for residences housing citizens with disabilities that are now treated by the major model codes as One- and Two-Family Dwellings. This includes small Board and Care Homes, Foster Care, Community Supported Living Arrangements, and Independent Living.

We have found that many officials appear not to be concerned that this is a significant problem, i.e., they did not raise the issue and, in a few cases, they did not express concern when directly asked.⁴⁰ However, it is likely that the number of such facilities will increase and there is the possibility that there will be future recommendations that the fire safety of these facilities be upgraded. Therefore, it is appropriate that this study address the issue.

Board and Care Homes for Four and Five Residents.

When the Life Safety Code is applied, Board and Care Homes with four or five residents must meet the requirements in the Board and Care Chapters. When most Building Codes are applied, Board and Care Homes with four or five residents must meet the One- and Two-Family Dwellings requirements. The requirements of most Building Codes for Board and Care Homes, with **six** or more residents, are much more strict than the Board and Care requirements in the Life Safety Code for facilities with four or five residents.

Most private residences will not meet the requirements in the Board and Care Chapters of the Life Safety Code and there would be costs to retrofit the buildings to meet these requirement when they are converted to Board and Care Homes. Sometimes these costs will be quite high compared to the monthly receipts of the facility. The writers of the Board and Care requirements in the Life Safety Code were aware of this and concluded that these costs were justified by the need for a high level of fire safety. In general, it appears that there is a consensus among those using the Life Safety Code that these requirements and the associated costs are appropriate. One notable exception relates to a specific requirement; there are a number of knowledgeable people who disagree with the new requirement in the 1991 Edition that sprinklers should be installed when new Board and Care Homes are established in existing residences. See Section on Sprinkler Requirements in the Life Safety Code on page 30. On the other hand, there are some who recommend that the Life Safety Code require a higher level of fire safety for Board and Care Homes.

Facilities With Three or Fewer Residents

There are many different types of housing arrangements for groups of three or fewer disabled citizens. We describe these housing arrangements below. It should be noted that the labels discussed below are not always used as they are in this section. For example, we found foster homes with more than three residents, although in this section we restrict the use of the term to homes with three or fewer clients.

Foster Care. In this report we call foster care the housing arrangement where care is provided in a family home to one to three disabled persons who are not related to the care

⁴⁰ One State Fire Marshal responded, "...We have not had a problem using Chapter 22 for such 3 client or less Board and Care Homes, and feel it reasonable to allow occupancies with up to three clients to follow these lenient rules. Our biggest problem currently is other state licensing agencies, as well as board and care operators themselves, pushing for a modification to the 85 LSC to allow up to 5 clients to be considered not board and care. The ... OSFM favors keeping the number as defined by chapter 21, 85 LSC -- 4 or more clients = board and care. However, we receive constant complaints that classifying homes with 5 clients the same as 15 clients is unfair!"

providers. The amount of care required is such that one person can provide all the necessary care and still perform household chores. The prototype is a family situation where a foster child lives as a member of the family.

Independent Living. One or more disabled people live in an apartment or house. What distinguishes these residential settings from typical residences is that a government or private agency had accepted responsibility for the welfare of the residents prior to their move to the residence and had placed the residents in the residence as part of a program to provide them with housing in a non-institutional environment. The residents may have signed the lease themselves or they may have subleased from a government agency or private organization. They may have temporarily received some support services when they first moved in.

Community Supported Living Arrangements. This is similar to independent living except that the residents are provided with some form of personal care services in their home. This form of housing is discussed in the Section, Community Supported Living Arrangements, on page 42.

Board and Care Home. Some facilities for three or less cannot be distinguished from a small Board and Care Home (i.e., a home for four or more) except for the number of residents and, presumably, the size of the building. One motivation for having such a small facility is that it may be subjected to fewer regulations. On the other hand, the money saved by fewer regulations may make it financially possible to have the benefits of a very small Home. Many experts believe strongly in the benefits of a very small Home.

It is normally not difficult to classify a facility into one of the above categories after a visit to the facility. On the other hand, it would be difficult to develop a set of rules that could be used to classify housing arrangements into these different categories for regulatory purposes. Furthermore, one cannot classify facilities based on their name, the name of the funding agency, or the name of the funding program. (For example, there was a multiple fatality fire in Texas in a **six** resident facility that was funded by a foster care program.)⁴¹ Therefore, the problem of classifying these housing arrangements would make it difficult to have different rules for the different types.

Foster Care

There is general agreement that when a husband and wife with no children take a high functioning disabled person into their home, i.e., provide foster care, the fire safety of their home does not differ from a home with parents and children. **As** the number of disabled persons receiving care increases, and/or the severity of the disabilities increases, the similarity between the Foster Care Home and a typical family home decreases. If the needed care is normally provided by one person, who also does the household chores, the foster home is similar to that of a typical family home which might have infants and/or family members with disabilities living in the home: the risk of injury or fatality in a serious fire also would be similar.

⁴¹ San Antonio Express News, March 25, 1991, p. 1-A.

Independent Living and Community Supported Living: Arrangements

Until recently one could assume that disabled citizens, placed in a typical residential setting by a government or private agency, were well trained in the proper actions to take, i.e., evacuation, in fire emergencies. The risk of injury or fatality in a serious fire would have been similar to that of a typical family or perhaps even less since they normally would have been given extensive training. However, Community Supported Living Arrangements include arrangements where disabled residents are placed in their own house or apartment prior to training in fire safety and independent living--fire safety training is given after they move into the residential setting. Health and safety is assured by the temporary or permanent use of caregivers, who provide the necessary supervision until the resident can respond properly to a fire emergency. It can be argued that, with the small number of residents--usually one or two--and the presence of caregivers, the fire safety of these homes is at least as good as in typical dwellings: a sufficient number of caregivers should be present to assure this if the home is evaluated as a One- and Two-Family Dwelling; and fire evacuation training is likely to be started as soon as the residents move in.

One fatal fire has come to our attention where two married people with physical disabilities were both unable to evacuate and caregivers were not in the residence at night when the fire started. It is our impression that the residents had physical disabilities, were fully aware of the risk, and chose to accept the risk.⁴²

Board and Care Homes

Board and Care Homes provide care to residents who have disabilities but are high functioning and also to residents who have serious disabilities and are not high functioning. Since in this section we are addressing only Homes with three or fewer residents, the ratio of residents to staff cannot be high. However, one can develop a fictional scenario where the time necessary for evacuation will be high. On the other hand, the fact that one can develop such a scenario does not mean that such scenarios occur frequently or even ever occur. We were told by one agency that it applies the Board and Care Occupancy Chapters for homes with two or more residents. While the Code limits the scope of the application of the requirements to residences with four or more residents, local agencies can use the Code beyond this scope.

The Fire Safety Problem of Small Homes

Many experts believe that the general population is not satisfactorily safe from fire in their own homes. There are numerous and varied programs underway to cut the terrible toll of injuries and fatalities from fires in private residences. Many of them emphasize fire prevention. Others are

⁴² These two victims were apparently of normal intelligence and presumably fully understood the risks involved. The situation is less clear when the people involved are mentally retarded. Advocates for the disabled claim that people with mental retardation have a right to risk in order to have a better quality of life. We believe that most of these advocates would not take the responsibility for placing people with disabilities in a residence with the level of risk that these two people accepted. The concept of right to risk as used in this paper does not include permitting clients to accept unusual risks if they cannot fully understand the meaning and possible consequences of this risk. However, responsible adults can accept additional risks for themselves whether it be skydiving or the risks these victims accepted.

directed at youthful firesetters. Still others are directed at upgrading the fire safety of older homes. In a few locations, sprinklers are required in all newly constructed homes.

Fire statistics indicate that over a ten year period, average citizens have about two chances in ten thousand to die in their own home from fire. "For those 65 years of age and older, the fire fatality rates are more than twice the national average. For those 75 years of age and older, these rates jump to three times the national average."⁴³ As is well known, the fire record for young children is also considerably poorer than for young adults.

A foster home meeting current codes for One- and Two-Family Dwellings is likely to have a better fire safety record than the current national average for private homes, especially if efforts are made to assure fire safety? Many existing private homes do not meet current codes for One- and Two-Family Dwellings: the windows may not be usable (they may even have bars to exclude intruders), the upstairs windows may be more than 20 feet above ground level, there may not be operating smoke detectors, or the walls may be too flammable. Private homes usually cannot be inspected for fire hazards by government agencies without the permission of the residents. None of these problems are applicable to a living arrangement that is in a residence meeting current codes for One- and Two-Family Dwellings and that is subject to protective oversight by a social service agency. In other word, if there is the legal authority to meaningfully regulate the fire safety of these living arrangements, the residences can be required to meet the requirements of the Codes for One- and Two-Family Dwellings (or Apartment Houses) and can be inspected for fire hazards. If the residents are also trained in fire safety, we can expect the residences to be safer, in general, than the average home despite the disabilities of the residents.⁴⁵

Fire Safety Regulation of These Living Arrangements

As discussed above, the Life Safety Code and the model Building Codes contain requirements for One- and Two-Family Dwellings and Apartment Buildings that can be applied to living arrangements for three or fewer residents with disabilities. While it is obvious that one can hypothesize living arrangements for which these requirements would be inadequate, we did not find much interest in changing the codes.

As discussed in the Section, Difficulty of Mastering the Code, on page 37, those who are responsible for inspecting buildings for code compliance have a difficult assignment because building and fire codes are so difficult to master. We did not find a desire to add to the difficulty

⁴³ Reference: John S. Petraglia, "Fire and the Aging of America", Fire Journal, March/April 1991, Vol. 85, Number 2, p. 37.

⁴⁴ We do not wish to imply that the foster home is likely to have a higher level of safety than a code complying dwelling with only healthy, alert, safety conscious young adults. However, many dwelling units have families with children or elderly people, or the residents have characteristics that increase the fire danger, such as alcoholism.

⁴⁵ This conclusion is based in part on the authors observations of fire drills in a number of Board and Care Homes. Of course, this level of fire safety can only be assured if proper attention is paid to fire safety by all responsible parties.

of enforcing the Codes. We would expect great resistance to any significant *expansion* of the codes to address only the fire safety of disabled citizens in living arrangements with three or fewer resident with disabilities. In some cases, this resistance would decrease **if** additional funding was made available to the regulatory agency. In addition, the resistance should decrease if a very strong case were made for the need for such an expansion.

We discussed above the fact that it would be difficult to develop a set of rules that could be used to classify housing arrangements into categories for which there would be different fire safety requirements.

We found that the staff of social service agencies were generally concerned about all aspects of the welfare of their clients, including fire safety. If they were to become involved with a living arrangement that required special attention to fire safety, they would normally seek out and respond to suggestions by the fire authority, even if the fire authority had no power to require its suggestions. If there were no inspection by a fire authority, in many cases they would recognize the need and seek professional help in developing a fire safe environment in these special situations. The manual we are writing, that explains about the board and care provisions in the Life Safety Code, will alert the reader to the need for possible additional fire safety features in special situations when the number of residents with disabilities is three or fewer.

It would be premature to recommend the additional fire safety features that might be appropriate in these special situations--the additional fire safety features would depend upon the characteristics of the facility, including the building, the staff and the residents. Nevertheless, one could anticipate two alternative courses of action. First, the requirements of the Board and Care Chapters of the Life Safety Code could be applied? Alternatively, the additional requirement of a residential sprinkler, meeting NFPA 13D, could be added to the requirements for a One- or Two-Family Dwelling: we anticipate this will be the more frequently employed alternative.

MANUAL AND BROCHURES TO PROMOTE USE OF THE LIFE SAFETY CODE

Manual about the Board and Care Provisions in the Life Safety Code

The original purpose of this task was to develop a manual that could be used by those providers that are not knowledgeable about fire safety codes and regulations. Such providers must eventually rely on the advice of experts. However, they need a manual that will give them a simple explanation of the requirements in the Board and Care Chapters and advice on how they should proceed in preparing their facilities to meet the requirements in the Chapters. The manual should help them understand the type of professional assistance they will need. The writing of this manual is in progress and should be completed in 1992.

General description: The manual will be targeted towards persons with an interest in the requirements in the Life Safety Code as they apply to Board and Care Homes. This group is likely to include both operators of board and care facilities and regulatory authorities. The manual will

⁴⁶ The Life Safety Code clearly states that it considers Board and Care Homes to have four or more residents. Nevertheless, any regulatory agency can apply the Life Safety Code as it deems appropriate.

use plain English and will explain key technical concepts to persons lacking experience in fire protection and regulatory compliance. It will provide: **1.** background information about the board and care chapters in the Life Safety Code; **2.** explanation of the content of the 1991 Edition; and **3.** practical advice about its uses. Persons already responsible for writing or enforcing fire safety regulations should still find the manual valuable, because it will provide administrative guidance which is not part of the Code **per se**, and the lack of which has probably inhibited its wider adoption.

The manual will present a balanced view of fire safety issues by offering equal credence to the concerns of both fire safety regulators and service providers.

Objectives: The manual will explain to readers:

A. How the characteristics of the board and care occupancy makes it different from other types of occupancies, and how these differences affect regulatory strategies.

B. What features have been incorporated into the board and care chapters of the Life Safety Code to deal with these unusual features.

C. How to locate information in the Life Safety Code by describing the organization of the Life Safety Code, in general, and the board and care chapters, in particular.

D. The Code writing process and how the reader can track developments and submit changes and comments to the code writing committees.

E. How various jurisdictions have dealt with the ambiguities of administering the board and care chapters.

F. Technical jargon employed in the Code.

G. The engineering bases for the provisions in the Code.

Manual Outline

Preface

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IV. INDEX

Production: Desk top publishing software (Ventura Publisher) on an IBM/PC compatible computer will be used to lay out the manual and to incorporate suitable graphics. Draft copies of the manual will be produced on a Postscript compatible laser printer at 300 dots/inch resolution. If a printing run is approved and funded by the sponsors, then Postscript files will be produced for computerized typesetting in a format identical to the draft manuals, but at a much higher resolution and with the potential of using spot color to highlight key text and graphics.

Brochures

One task of this project is to develop a short easy to understand, pamphlet that describes and promotes the fire safety requirements in the Board and Care Chapters of the Life Safety Code. However, Dr. Groner of the project staff recognized the value of a second but related pamphlet directed at regulatory officials and providers who interact with the regulatory officials. It is designed to help make regulatory officials more sensitive to the goals and problems of the providers and to make the providers more sensitive to the goals and perspective of the regulators. He has developed a draft of such a brochure. The brochure points out that the Board and Care requirements in the Life Safety Code are designed to meet the goals of both groups. Its distribution should assist in obtaining more support for the adoption and continued use of the Board and Care requirements. Copies of both brochures are contained in the Appendix. Each is designed to be distributed as a single sheet of paper. Each sponsor will be able to distribute the brochure as it wishes, with or without modifications or changes. The blank panel is reserved for use by the distributing agency. Some sponsors have expressed a desire to include in that panel the name and phone number of a person or organization that can be contacted for more information. When we obtain that information, we can add it, if desired, to the reproducible master to be submitted to that agency.

We are developing a third brochure describing the differences between the fire safety approach of Board and Care Homes and Nursing Homes and the need for residents of Board and Care Homes to participate in fire drills.

April 11, 1992

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APPENDIX

Board and Care is an Unusual Animal
It Takes a Flexible Fire Code to Make it a Home

How Much Fire Protection Is Enough
It Depends on Your Point-of-View

What is the *Life Safety Code*?

The NFPA 101® Life Safety Code® is a "model" code. Before it becomes a legal requirement, it must be adopted by a regulatory authority. Regulatory authorities sometimes amend parts of model codes according to unique conditions.

The *Life Safety Code* only concerns the prevention of casualties. Unlike model building codes, the *Life Safety Code* regulates the operation of a building after it has been occupied. Building codes tend to classify board and care homes as either residential or institutional occupancies, depending on the number and disabilities of the residents. Some simple decisions by regulatory officials will usually resolve any inconsistencies.

You can participate in the process of writing and changing the *Life Safety Code*

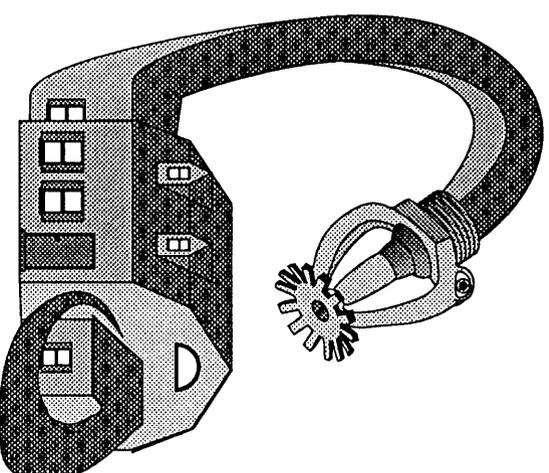
The National Fire Protection Association coordinates the writing of the *Life Safety Code*. The general public is given the opportunity to suggest changes and to publicly comment on changes submitted by others. Carefully reasoned comments can significantly influence the committees that vote on changes to the *Life Safety Code*. Associations representing board and care providers can also seek representation on the *Life Safety Code* subcommittee responsible for board and care requirements.

Individuals and organizations who join the National Fire Protection Association, may find it easier to follow the activities of code writing committees.

For information about membership, write the National Fire Protection Association at One Batterymarch Park, Quincy, MA 02269-9101 or telephone at 1-800-344-3555.

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Board and Care is an Unusual Animal



**It Takes a Flexible
Fire Code to Make
it a Home**

What's so Unusual about Board and Care?

Board and care facilities are so varied that traditional code approaches can't address them all.

Building variety! Board and care facilities are found in every type and size of residential and institutional building. They range from custom-built retirement homes with 300 residents to single family dwellings and apartments converted to small group homes for just a few clients.

Resident variety! With training, some persons with disabilities are more likely to quickly evacuate a building than the general public. But many persons with severe disabilities are unable to participate in their own protection.

Program variety! Goals and funding levels vary widely. Some residential programs use intensive training regimens, while others focus on their clients' physical well-being. Funding levels may be based on clients' needs. But in other facilities, residents pay their own way, and every dollar diverted to fire protection means fewer services for residents.

Traditional codes are often based on the simplifying assumption that all the residents are similar to the least capable client. Thus, persons who are "not capable of self-preservation" or "nonambulatory" or "nonmobile" are excluded from living in typical residential buildings. But many fire safety experts feel that this approach is unnecessarily conservative, because studies of actual fires demonstrate that trained staff can be relied on to assist residents during an emergency.

What's so Flexible about Life Safety Code Provisions?

The *Life Safety Code* is designed to provide a high level of safety by fitting its requirements to each board and care home's particular building, residents and staffing levels. The result? Cost-effective fire safety that gives providers the greatest possible control over their programs.

The amount of required fire safety is based on a facility's capability of evacuating

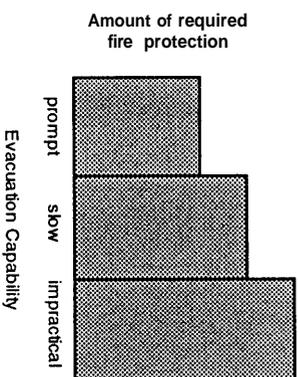
Unlike more traditional code approaches, *Life Safety Code* requirements for board and care homes are based on the ability of the residents and staff together to evacuate. Facilities are assigned to one of three levels: "prompt," "slow," or "impractical." As long as the assigned level of "evacuation capability" is maintained, any combination of persons with disabilities is allowed. Persons who need assistance to evacuate are not necessarily restricted from the programs that best serve their needs.

Facilities can qualify for an evacuation capability level using any approach accepted by the regulatory authority. The *Life Safety Code* suggests some possible methods for setting evacuation capability.

- ☞ Records of fire drill times. Facilities must run fire drills anyway, and regulators can audit the times by observing surprise fire drills. Maximum time limits for evacuation are recommended for each level.
- ☞ The Evacuation Difficulty Index. This method provides a conservative and detailed measure of evacuation capability by calculating a score from the assistance needs of residents and the availability of staff to provide that assistance.
- ☞ Large facilities can qualify for the "slow" level of evacuation capability when their residents can be relied on to travel to a common dining area without staff assistance.

A Fire Safety Evaluation System

There's more than one way to make a building safe! Different combinations of fire safety features can achieve the same overall level of safety as the mandatory requirements specified in the *Life Safety Code*. The Fire Safety Evaluation System (FSES) is an optional method that will determine which combinations of fire safety features provide a level of protection that is equivalent to the particular combination of features mandated in the code. The FSES helps providers find cost-effective solutions to their design problems—a great help during conversions. And code enforcers can feel assured that there is a technical basis for their flexibility.



Fire Safety Requirements Increase as Evacuation Capability Becomes Less Favorable

Three Types of Buildings

The *Life Safety Code* recognizes that different sets of requirements are needed depending on the type of building that houses a board and care facility. Separate sets of requirements are available for small facilities (up to 16 residents), large facilities (more than 16 residents), and small facilities located in apartment buildings. Requirements for large facilities are generally more stringent than for small facilities. Apartment requirements govern the building surrounding the facility, while the unit itself must meet the requirements for a small facility.

FIRE SAFETY REGULATORS: WHAT YOU CAN DO

- ❑ **Take a broad view.** The board and care occupancy is unique in its variety and financial constraints. Approaches that have worked well in other occupancies can create serious problems for board and care providers. A high level of fire safety must be maintained. But overly stringent regulations can prevent providers from offering affordable programs — causing people with disabilities and limited funds to live in unsupervised housing at a greater risk from fire. Regulators should work with providers to plan for good fire safety at a reasonable cost.
- ❑ **Study approaches taken by other jurisdictions.** The *NEPA 101 Life Safety Code* was designed to maximize flexibility while preserving a high level of fire safety. You may find that adoption of the Life Safety Code requirements provides your community with a good balance between safety and cost. Consider modifying the Code or adopting alternative approaches to achieve the same goals of safety, flexibility, and affordability.

PROVIDERS: WHAT YOU CAN DO

- ❑ **Plan for fire emergencies.** Many fire marshals are skeptical that board and care facilities can respond effectively to fires. They may feel that residents' disabilities will lead to confusion and panic, and that staff members will only look out for themselves. Prove that they're wrong. Train your residents and staff to respond appropriately to fire emergencies, and the record will speak for itself.
- ❑ **Represent your interests.** The process of writing model codes and promulgating regulations is generally open to public comment. Comments that are well written and supported are often very influential. Also, you or your association can seek representation on some committees and commissions that actually write or recommend codes and regulations.

How Much Fire Protection Is Enough?

POINT-OF-VIEW
DEPENDS ON YOUR
IT

*cost-effective
& flexible
fire safety
for board and care
occupancies*

THE FIRE SAFETY REGULATOR'S POINT-OF-VIEW

Fire safety regulators want to save lives — every life if they can. That's their job. From that perspective, how can you have too much fire protection?

Fire safety regulators successfully reduce casualties by requiring stringent fire protection requirements. In health care settings, once common multifatality fires have been nearly eliminated. Board and care seems similar to health care — both settings shelter persons who may be unable to rapidly evacuate in a fire emergency. If stringent regulations worked for hospitals and nursing homes, why not board and care facilities?

BOARD AND CARE IS UNIQUE

But health care facilities are relatively uniform, while board and care facilities vary widely — in all the following ways...

☞ **Variety of residents' capabilities.** Some residents, with appropriate training, are more likely to take effective actions than most people. Other residents have disabilities so severe that they cannot participate in their own protection.

☞ **Variety of buildings.** Board and care facilities are found in every type and size of residential building, from retirement homes with 300 residents, to group homes where three residents live in a single family dwelling or apartment.

☞ **Variety in programmatic goals and funding.** Some programs involve intense supervision of residents, while others encourage maximum independence for their residents. Staffing levels may be generous or slight. While some programs are financially well-endowed, many well-run operations are marginal.

THE PROVIDER'S POINT-OF-VIEW

Providers want to save lives — but they also want to provide the best quality of life for their residents. For providers, there are tradeoffs between fire protection and quality of life.

☞ **Both cost money.** The more providers must spend for fire protection hardware, the more they may have to charge residents. Most residents have little money. This can mean that the high quality of care provided by regulated board and care homes (*especially a high level of fire safety*) is denied to many people with limited funds.

☞ **Loss of home-like ambience.** Institutional levels of fire protection can be incompatible with the styles and layouts of existing housing stock. Residents may be denied the opportunity to live in many neighborhoods and in structures like others in their community.

☞ **Interference with programs.** Some fire safety regulations are based on the assumption that help won't be available to assist the least capable residents. This can force providers to exclude residents who are "nonambulatory" or "incapable of self preservation" from programs that provide the best care and quality-of-life. But research on emergency response demonstrates that trained staff can be depended on to assist less capable residents to safety.

ROOM FOR COMPROMISE

When a board and care home demonstrates the ability to quickly evacuate as a group, a "health care" level of fire protection is probably overkill — and may be more than some people can afford. But when residents can't be quickly evacuated, a "residential" level of fire protection is probably insufficient. Between the two extremes is room for compromise.

THE LIFE SAFETY CODE APPROACH TO BOARD AND CARE

The National Fire Protection Association's NFPA 101® Life Safety Code® includes requirements for board and care facilities based on extensive work conducted at the National Institute of Standards and Technology's Building and Fire Research Laboratory. This code uses certain features to cope with the unique nature of board and care occupancies while still providing a high level of safety without unnecessary cost.

☞ **Three levels of requirements depending on evacuation capability.** Facilities are classified as "prompt," "slow," or "impractical," depending on how quickly the occupants can evacuate as a group. As evacuation capability is reduced, more stringent requirements are imposed. Since the group's performance determines evacuation capability, providers can more flexibly assign residents to programs and retain residents even as their abilities decline.

☞ **Three types of buildings.** Separate sets of requirements are available for small facilities (as many as 16 residents), large facilities (more than 16 residents), and small facilities located in apartment buildings.

☞ **An optional fire safety evaluation system.** This method numerically determines which combinations of fire safety features provide a level of protection that is equivalent to those features otherwise mandated in the code. Providers can find cost-effective solutions to their problems, and code enforcers are assured of a technical basis for being flexible.

☞ **Optional methods for measuring evacuation capability.** Evacuation capability levels are assigned using any approach acceptable to the regulatory authority (for example, fire drill times). Where a conservative and detailed estimate is desirable, the Evacuation Difficulty Index can be computed from the assistance needs of every resident and the availability of staff to provide that assistance.

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1. ABSTRACT (A 200-WORD OR LESS FACTUAL SUMMARY OF MOST SIGNIFICANT INFORMATION. IF DOCUMENT INCLUDES A SIGNIFICANT BIBLIOGRAPHY OR LITERATURE SURVEY, MENTION IT HERE.) This is an interim report on a project concerning fire safety in Board and Care Homes. Homes vary greatly in the level of disability of residents and financial resources of the residents. A major concern is the availability of satisfactory care for clients with limited funds. Meeting fire safety codes can mean an unaffordable capital cost to financially marginal providers who cannot borrow money. One focus of the study is the use of the provisions in the Life Safety Code. Many agencies use these requirements and find they lead to a high level of safety without excessive costs. All have developed or adopted a procedure for rating Evacuation Difficulty that they find workable, and many find satisfactory. Other agencies use other requirements, sometimes more lenient and often more strict. Costs of fire safety systems, such as sprinklers, can vary greatly, impeding a dialogue on the benefit-cost relationships of these systems. It appears that in some locations there are many homes that provide the services of Board and Care Homes but are not regulated.						
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