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AUTHOR Fiene, Richard; Melnick, Steven A.  
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## ABSTRACT

The relationships among independent observer ratings of a child care program on the Early Childhood Environment Rating Scale (ECERS), state department personnel ratings of program quality using the Child Development Program Evaluation Scale (CDPES), and self-evaluation ratings using the self-assessment instrument designed for the Early Childhood Education Linkage System (ECELS)---a federally-funded demonstration project--were studied. Data were collected in May 1989 and throughout 1990 in three stages: (1) during visits by teams of two external evaluators, data were collected for 87 day care centers (DCCs) using the ECERS and 62 family day care homes (FDCHs) using the Family Day Care Home Rating Scale (FDCRS); (2) 125 DCCs and FDCHs completed the environmental, health, and safety self-assessment for the ECELS program; and (3) licensing data were collected on all of the DCCs and FDCHs in the above two studies using Pennsylvania's CDPES. The results show the need for improvement in early childhood programs in Pennsylvania in terms of licensing, health and safety, and child development program environment. All three scales measure different dimensions of quality. The CDPES had the greatest limitations in providing information on areas for improvements in early childhood programs; the ECELS scale provided significantly better data in these areas. The ECERS provided additional programmatic quality data that are not contained in the CDPES and the ECELS scale. To help the embattled licensing representative in the field, a more effective/efficient balance of self-assessment with the representative validating the results of a self-assessment with unannounced licensing visits is needed. Results also show the need to develop a weighting system for the three scales. Four bar graphs and four charts are included. (RLC,

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**QUALITY ASSESSMENT IN EARLY CHILDHOOD PROGRAMS**  
**A MULTI-DIMENSIONAL APPROACH**

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**Richard Fiene**

**Pennsylvania Office of Children Youth and Families  
and  
Pennsylvania State University at Harrisburg**

**Steven A. Melnick**

**Pennsylvania State University at Harrisburg**

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## **INTRODUCTION**

### **Federal Legislation**

State governments will be faced with an early childhood licensing and program monitoring crisis that will potentially jeopardize the fragile child care delivery system in the 1990's. The reasons for this crisis are somewhat ironic. Early childhood advocates have petitioned the federal government for national child care legislation for the past 20 years. Finally a national child care bill is a reality. New dollars will be pumped into the early childhood delivery system over the next three years. Major expansion in all forms of child care programs will occur. However, as this increase in programs occurs over the next three years, state governments find themselves with shrinking resources. Many large industrial states (e.g., Massachusetts, New York, Pennsylvania, New Jersey) are running huge deficits translating into fewer state staff to do the necessary program monitoring and licensing of early childhood programs.

Quality services are defined as early childhood services that promote a desired level of child health and child development; and do not merely ensure that children are in safe child care environments. Many early childhood and child care professionals would argue that the typical state early childhood and child care regulatory system has very little impact on program quality. However, recent research (Phillips, 1987; Morgan, 1985) has demonstrated that licensing can be an index of quality child care or at least it establishes a basic floor of quality. More recent research (Melnick & Fiene, 1990) has clearly delineated a curvilinear relationship between program compliance and program quality--the highest quality programs are usually not in full compliance with state licensing regulations. This result helps specify the contribution of licensing to the overall establishment of a quality early childhood program. Licensing is an essential prerequisite for determining a quality early childhood program but is not sufficient in and of itself to define early childhood quality.

A requirement of the new federal legislation mandates that states entertain a dual purpose, first is to monitor compliance with state regulations and second and equally important, there is a strong need for the state to ensure that quality child development services are supported and provided. However, states must accomplish this dual mission with shrinking state revenues. Cutbacks or freezes in state human service staff's have occurred just as workloads are increasing because of the new federal legislation. Many states have experienced substantial increases and will continue to experience increases in the number of child care providers who are attempting to meet the increasing demand for additional early childhood services.

## **Instruments**

Research on child care quality (Phillips, 1987) has identified global assessments of program quality. Phillips (1987) has delineated several approaches. One approach, typified by Howes and Olenick (1986) and Vandell and Powers (1983), is concerned more with regulatory or licensing criteria--e.g., staff child ratios, staff training, and space. A second approach, typified by Phillips, McCartney, and Scarr (1987), used a rating scale (Early Childhood Environment Rating Scale (ECERS), Harms and Clifford, 1980) that provides an environmental quality score. The score measures seven environmental dimensions of quality: (1) personal care, (2) furnishings/display, (3) language/reasoning activities, (4) creative activities, (5) fine/gross motor activities, (6) social development, and (7) adult facilities/opportunities.

The approach utilizing the ECERS has been used in several other child care research studies (Goelman & Pence, 1987; Kontos and Fiene, 1987; Melnick and Fiene, 1990). There are other alternatives to the ECERS that have been developed, the most notable were developed by Prescott (1972, 1975), Day (1979), and the National Association for the Education of Young Children (1984). However, there are not many alternatives developed to measure the approach that utilizes regulatory or licensing criteria with the exception of the instrument based program monitoring system developed by Fiene and Nixon (1985). This approach has resulted in the development of the Child Development Program Evaluation System (CDPES) (Fiene, Douglas, and Kroh, 1978) that has been used in the state of Pennsylvania since 1978 as the program monitoring and licensing system for early childhood and child care programs. The instrument based program monitoring system approach has been used as a model in many other states as they developed their licensing and program monitoring systems (e.g., California, Texas, Michigan, West Virginia, North Carolina). More recently an Early Childhood Education Linkage System (ECELS) (Aronson, Fiene, Smith and Melnick, 1990) has been developed based on the instrument based program monitoring system approach. This is a self assessment approach being utilized in the state of Pennsylvania to improve the health and safety of early childhood programs by linking health professionals with early childhood staff. They use the computerized ECELS instrument as their blueprint for improving the overall quality of the individual early childhood program.

The research reported in this paper builds upon previous work related to the relationships between program quality and licensing compliance (Melnick & Fiene, 1990). In that study, significant differences were found between profit and non-profit early childhood programs with respect to ratings on the ECERS. However, it was apparent that assessments of overall program quality should not be based upon a single type of assessment data. In fact, program quality should only be assessed using a multi-dimensional approach to program evaluation.

## **Multi-Dimensional Approach to Program Evaluation**

Research on assessing program quality (Phillips, 1987; Aronson, Melnick &

Fiene, 1991) has been based, to a large extent, on the use of individual instruments assessing discrete dimensions of program quality (e.g., Harms and Clifford, 1980; Fiene, Douglas, and Kroh, 1978; Aronson, Fiene, Smith and Melnick, 1990). For example, the Early Childhood Environment Rating Scale (ECERS) examines environmental factors related to the early childhood classroom. The Child Development Program Evaluation Scale (CDPES) examines factors related to the licensing of early childhood programs. The Early Childhood Education Linkage System evaluation instrument (ECELS) a federally funded demonstration project assesses factors related to health and safety in early childhood programs.

While each of these instruments measures a subset of program quality, they do not provide a total assessment of overall program quality. To date, there has been little empirical evidence that supports the use of multiple quantitative measures in assessing program quality.

The purpose of this paper is to examine the relationships between a number of different quality indicators used in child care programs. Specifically, this research determines the relationships between independent observer ratings of a program on the ECERS, state department personnel ratings of program quality using the CDPES, and self evaluation ratings using the self-assessment instrument designed for the ECELS, a federally funded demonstration project.

The analyses of the data in this paper provides the information about the interrelationships among several dimensions of program quality and will help to formulate an evaluation model appropriate for early childhood settings that will be multi-dimensional in nature.

## **METHODOLOGY**

### **Data Collection**

Data were collected in three stages. First, 87 day care centers and 62 family day care homes were visited by teams of two external evaluators. Early Childhood Environment Rating Scale (ECERS) data were collected on each of the 87 day care centers and Family Day Care Home Rating Scale (FDCRS) data were collected on each of the 62 family day care homes.

In a second study, 125 day care centers and family day care homes completed the environmental, health and safety self-assessment instrument for the Early Childhood Education Linkage System (ECELS) program.

Third, program licensing data from Pennsylvania's Child Development Program Evaluation Scale (CDPES) was collected by state department personnel on all day care centers and family day care homes in the above two studies.

### **Sample**

All participating programs were located throughout Pennsylvania and are representative of programs statewide. ECERS and FDCRS data were collected from 149 sites throughout the state in May 1989. ECELS data were collected from 125 sites from March-December, 1990. CDPES data were collected by state

personnel on all sites from January 1990-December 1990.

## **RESULTS**

This section will be divided into the following subsections: (1) Descriptive scale data will be presented for the Child Development Program Evaluation Scale (CDPES)--center based and family day care home, the Early Childhood Education Linkage System Scale (ECELS)--center based and family day care home, and the Early Childhood Environment Rating Scale (ECERS) and the Family Day Care Environment Rating Scale (FDCRS); (2) Comparisons will be made between the ECELS and ECERS/FDCRS scales; the ECERS/FDCRS and the CDPES scales; and the ECELS and the CDPES scales; (3) Comparisons of the ECELS, ECERS and CDPES to attempt a composite profile utilizing the three scales.

All data reported will be major areas for improvements given the nature of compliance data. Compliance data are based on state early childhood and child care regulations and are reported as items of non-compliance that programs must either change or improve in order to be licensed. The major areas for improvement reported in the following sections are based upon literature reviews of state and federal regulations identifying these items as key indicators to the overall health and quality of an early childhood program.

### **Child Development Program Evaluation Scale (CDPES)**

The major areas for improvement are the following from the CDPES: these data are for child day care centers--43% of the programs were lacking the proper child abuse clearances; 11% of the programs had insufficient or dangerous outdoor equipment; 22% of the programs did not have adequately qualified staff; 30% of the programs did not have adequate health appraisals for children or staff; in 11% of the programs cleaning materials were accessible to children; 26% of the programs did not have emergency contact information; 20% of the programs had hot water that was 110 degrees or above; 24% of the programs did not have a staff person sufficiently trained in first aid techniques; and 13% of the programs did not have children properly immunized.

In family day care homes--42% of the homes did not have the proper screenings (vision, hearing, dental, developmental) for children; 25% of the homes did not have children properly immunized; 42% of the homes did not have emergency contact information; and 42% of the homes did not have adequate health appraisals for children.

### **Early Childhood Education Linkage System Scale (ECELS)**

The major areas for improvement are the following from the ECELS: The first area dealt with the basic provisions regarding available staff and adequate space. Percentage of programs that lack space and staff: space was less than 40 square feet per child--group day care homes=60%; nursery schools=75%; child care centers=57%; Head Start=31%. Number of staff for indoor activities was

insufficient--nursery schools=50%; child care centers=29%; Head Start=13%. These data are particularly disturbing in that having sufficient staff is a minimal requirement to establishing basic care for children. See Graphic # 1 for additional details regarding the lack of space and staff in early childhood programs as reported in the ECELS scale.

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Insert Graphic #1 About Here

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Percentage of programs that need improvement in fire prevention and evacuation procedures: It has been longer than 1 year since fire authority personnel reviewed the evacuation plan--group day care homes=89%; nursery schools=50%; child care centers=57%; Head Start=50%. Last fire drill took longer than 2 minutes to evacuate the facility safely--group day care homes=80%; nursery schools=75%; child care centers=69%; Head Start=50%. See Graphic #2 for additional details regarding the need for improvement in fire prevention and evacuation procedures as reported in the ECELS scale.

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Insert Graphic #2 About Here

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The next category deals with the percentage of programs in which burn risks posed a hazard for young children: The hot water temperature was greater than 110 degrees--family day care homes=73%; group day care homes=80%; nursery schools=25%, child care centers=18%; Head Start=56%. Space heaters being used in the various early childhood programs--group day care homes=40%; child care centers=24%. See Chart #1 for additional details regarding the need for improvement in burn risks to children as reported in the ECELS scale.

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Insert Chart #1 About Here

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The need for improvements in transporting of children was identified as a major problem area. Parents were not told about where to pick up and drop off their children--group day care homes=60%; nursery schools=25%; child care centers=25%; Head Start=6%. The transporting of more children than the vehicle safely carries--group day care homes=67%; child care centers=41%; Head

Start=20%. Age-appropriate seat restraints were not used--group day care homes=67%; nursery schools=50%; child care centers=46%; Head Start=20%.

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Insert Chart #2 & #3 About Here

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All of the above areas dealt with the indoor areas of early childhood programs or the transportation of children to and from early childhood programs. What is the status of the outdoor play areas? There were also several playground hazards identified that were areas for improvements in the various early childhood programs. Broken playground equipment--group day care homes=100%; nursery schools=50%; child care centers=63%; Head Start=83%. No cushioning surfaces used under climbers--family day care homes=11%; group day care homes=50%; nursery schools=67%; child care centers=47%; Head Start=55%. The equipment on the playground had several other hazards noted--such as exposed hooks or links, screws or bolts, or broken glass was present on the playground. See Chart #4 for additional details.

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Insert Chart #4 About Here

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With the potential for several playground hazards, what was the training level of early childhood staff in first aid to handle these potential problems. All early childhood sites had insufficient training but family day care home providers were at real risk because of the lack of supportive staff if an accident were to occur. Graphic #3 depicts the levels of training in which 20% of family day care home providers have had no training ever and 50% have had none in the past 3 years.

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Insert Graphic #3 About Here

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In the child health sub scale of the ECELS scale, the lack of proper and timely immunizations is a clear area for improvement. Just in the past year there has been a measles epidemic in Philadelphia that has killed four children. Not having up to date immunizations especially for children in early childhood programs is a major concern of Health officials in Pennsylvania. Statewide totals indicate a problem with all immunizations but the Hib (Haemophilus influenzae type b)



immunization is particularly a problem (30% statewide). See Graphic #4 for a detailed breakdown.

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Insert Graphic #4 About Here

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It is obvious from the above ECELS data that there are many areas for improvement in the early childhood delivery system in Pennsylvania, especially in the health and safety areas. But both the CDPEs and the ECELS have dealt with just the health and environmental safety areas. How do the child development programmatic areas size up. The next series of analyses deal with this area.

### **Early Childhood Environment Rating Scale/Family Day Care Rating Scale**

The ECERS/FDCRS was used to measure the child development programmatic environment more closely--an area not well represented in child day care regulations neither in the CDPEs nor the ECELS. In reporting the data from the ECERS/FDCRS a consistent framework was used based upon the regulatory compliance with state early childhood and child care regulations. The following major items are areas for improvement in the early childhood programs: the following items in the ECERS were at the minimal level or just above the minimal level of compliance--greeting/departing=3.7 (mean result out of a possible 7 point scale); furnishings for learning activities=3.7; furnishings for relaxation and comfort=3.5; child related displays=3.8; art activities=3.2; sand and water activities=3.2; dramatic play activities=3.9; space to be alone=3.1; cultural awareness materials=2.2; and adult personal area=3.8.

The following major items are areas for improvement as measured by the FDCRS: these items were also measured at a minimal level or just above the minimal level of compliance in family day care homes--child related display=1.9; indoor space arrangement was inadequate=3.8; active physical play activities was inadequate=3.6; space to be alone=3.3; basic care routines were inadequate or minimal, such as personal grooming, health and safety=2.8; activities for helping children understand language and to reason=3.6; eye-hand coordination activities=3.7; art activities=3.7; music and movement activities=3.6; sand and water play activities=2.6; dramatic play activities=3.1; block activities=3.3; cultural awareness=1.4; and opportunities for professional growth=3.8.

### **ECELS and ECERS/FDCRS Comparisons**

The data reported in this section compares areas of non compliance that co-occurred in the ECELS and ECERS/FDCRS instruments. The following items were found to be areas for improvement: ECELS items--lack of proper immunizations and health screenings for children, and emergency contact

information not being present for all enrolled children. ECERS/FDCRS items--lack of adequate furnishings for routine care--basic materials: feeding tables, child sized tables and chairs, cribs or cots, cubbies or other place for storing child's things; and lack of supervision.

### **ECERS/FDCRS and CDPES Comparisons**

The data reported in this section compares areas of non compliance that co-occurred in the ECERS/FDCRS and the CDPES instruments. The following items were found to be areas for improvement: ECERS/FDCRS items--lack of supervision in activity areas, dramatic play activity area is inadequate, lack of adequate furnishings for routine care. CDPES items--lack of proper supervision, insufficient staff, lack of sufficient dramatic play equipment, emergency contact information not being present for all enrolled children, lack of proper immunizations and health screenings for children.

### **ECELS and CDPES Comparisons**

The data reported in this section compares common areas of non compliance in the ECELS and CDPES instruments. Because both instruments measure common health and safety regulatory areas, the items reported appear on both sets of instruments. Common items that were found to be areas for improvement on both instruments: lack of proper supervision, insufficient staff, lack of proper immunizations and health screenings for children, and emergency contact information not being present for all enrolled children.

### **ECELS, ECERS, and CDPES Comparisons**

From the early childhood programs which contained all three scales there were several trends which are worth reporting. Those programs that scored significantly higher on the CDPES also scored significantly higher on the ECERS and scored mid-range to above average on the ECELS. However, those programs that scored the highest on the CDPES did not score the highest on the ECERS or the ECELS. Those programs that scored the lowest on the CDPES did score the lowest on the ECERS and the ECELS. From the three scales it was possible to establish a composite profile of non compliance in early childhood programs. The following items co-occurred in all three instruments: CDPES and ECELS--lack of proper immunizations and health screenings for children, emergency contact information not being present for all enrolled children, age appropriate visual materials being inadequate, and cleaning materials and chemicals being accessible to children; ECERS/FDCRS--lack of supervision in activity areas, child related displays being inadequate, and the art, block, sand/water activity areas being at a minimal or inadequate level. These are the common indicators that are areas for improvement for all programs on all three instruments.

## CONCLUSION AND DISCUSSION

All three scales demonstrated the tremendous need for improvement in early childhood programs in Pennsylvania--in the licensing area, health and safety areas and in the child development program environmental area. All three scales measure different dimensions of quality. One cannot replace the other. All three must be looked at because they provide a different window to quality.

In analyzing the three scales individually, it became clear that the CDPES scale--the licensing scale--had the greatest limitations in providing information regarding areas for improvements in early childhood programs. The ECELS scale--a self assessment tool--provided significantly better data. The ECELS scale could become a useful addition to the licensing process by providing additional data for the licensing representative as well as a cross-validation to the licensing inspection process. The ECERS provided additional programmatic quality data that is not contained in the licensing system--CDPES nor in the ECELS scale. It appears that when the ECERS is used in conjunction with a health and safety type measure, such as the CDPES or the ECELS, it provides a balance between regulatory compliance with state child care regulations and program environmental quality measures.

The relationship of items were encouraging with the ECERS and ECELS, and the ECELS with the CDPES, and the ECELS and CDPES. However, there should have been more agreement between the items on the ECELS and CDPES instruments because of their predominantly regulatory emphasis. There is an explanation for this result. CDPES data are collected through announced licensing visits by state staff in which punitive action will occur if areas of non-compliance are found. It is clearly in the best interest of the early childhood provider to have as few areas of non-compliance as possible. ECELS data are collected in a self-assessment mode with no punitive action being taken when areas of non-compliance are found. Rather, additional technical assistance is provided to help address those areas where programs have the greatest need for improvement. Also, licensing staff have caseloads of over 100 programs to license. The average caseload should be about 55 programs. Overdue licenses are running anywhere from 10 to 20 percent statewide. Licensing staff are simply missing areas of non-compliance.

Where does this leave us with a multi-dimensional model for program evaluation based on the above data. A major change needs to occur with the licensing system as demonstrated by the CDPES scale. In order to help the embattled licensing representative in the field, a more effective and efficient balance of self-assessment with the licensing representative validating the results of a self-assessment with unannounced licensing visits appears to be a potential solution to the problems identified in the results section of this paper. In fact, the licensing representative could use a licensing indicator system (50% of all states use such an approach) as the validating system which would help to shorten licensing visits without losing valuable information which would be obtained by the self-assessment completed by the early childhood program provider. Using a self assessment tool such as ECELS or the ECERS would help to balance health and safety concerns with overall child development programmatic concerns.

However, one area not addressed by this program evaluation model in order to make it truly multi-dimensional is the need to adequately address the more qualitative aspects of evaluation (the use of interviews) and the use of outcome data (developmental assessments of children). Without these last two components a multi-dimensional statewide approach to quality assessment in early childhood programs will not be complete.

Also there is the need to develop a weighting system for the CDPES, ECELS, and ECERS instruments. The analyses performed in this paper were limited because the data are nominal and not weighted in the CDPES and ECELS instruments and not weighted in the ECERS instrument. Equal weight is given to disparate items. The plan for future research is to complete weighting of the CDPES and ECELS instruments. Although states are using the licensing indicator approach, they have not weighted these licensing instruments.

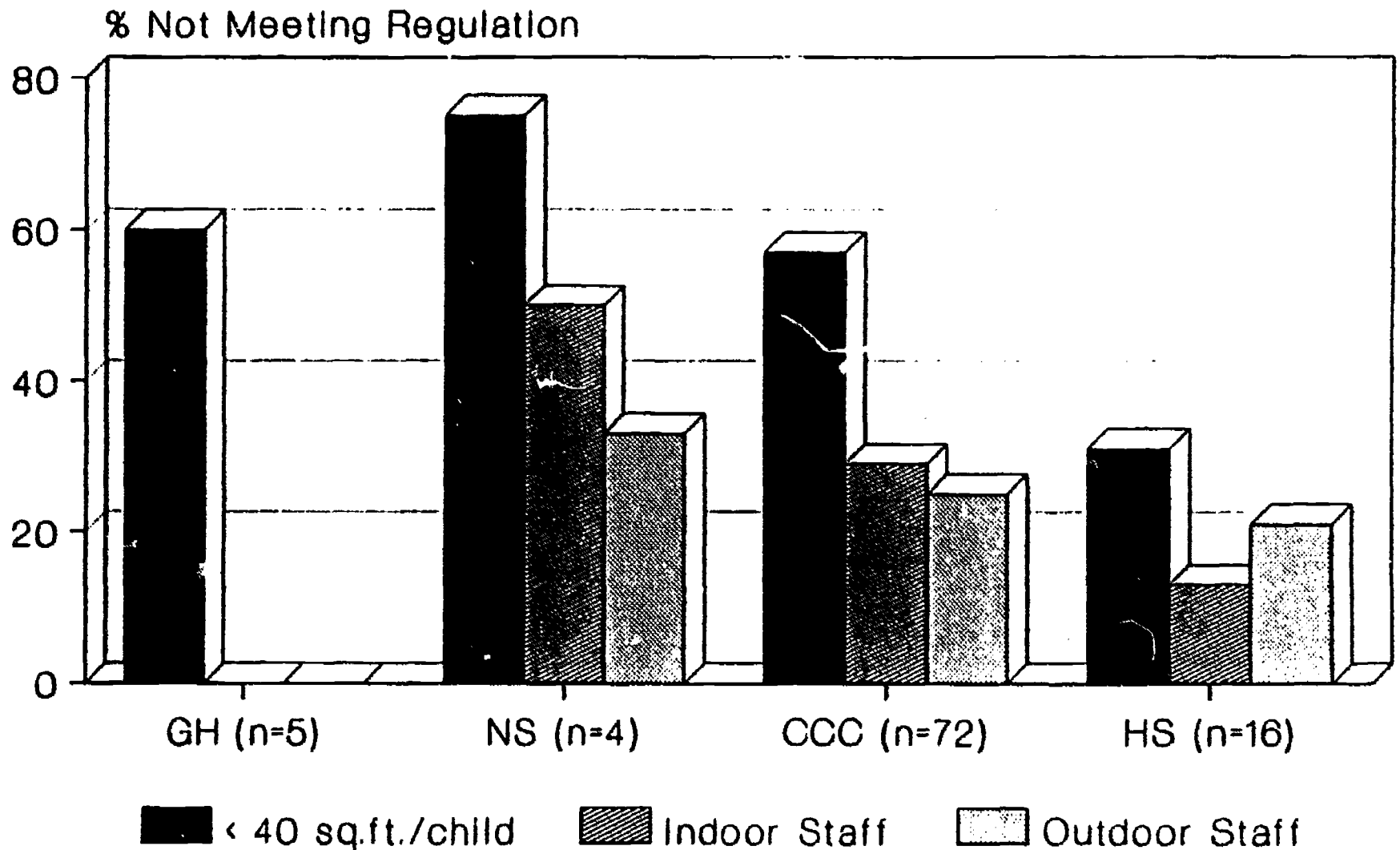
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Graph 1

## % of Programs That Lack Space and Staff



Graph 2

# Fire/Evacuation Problems

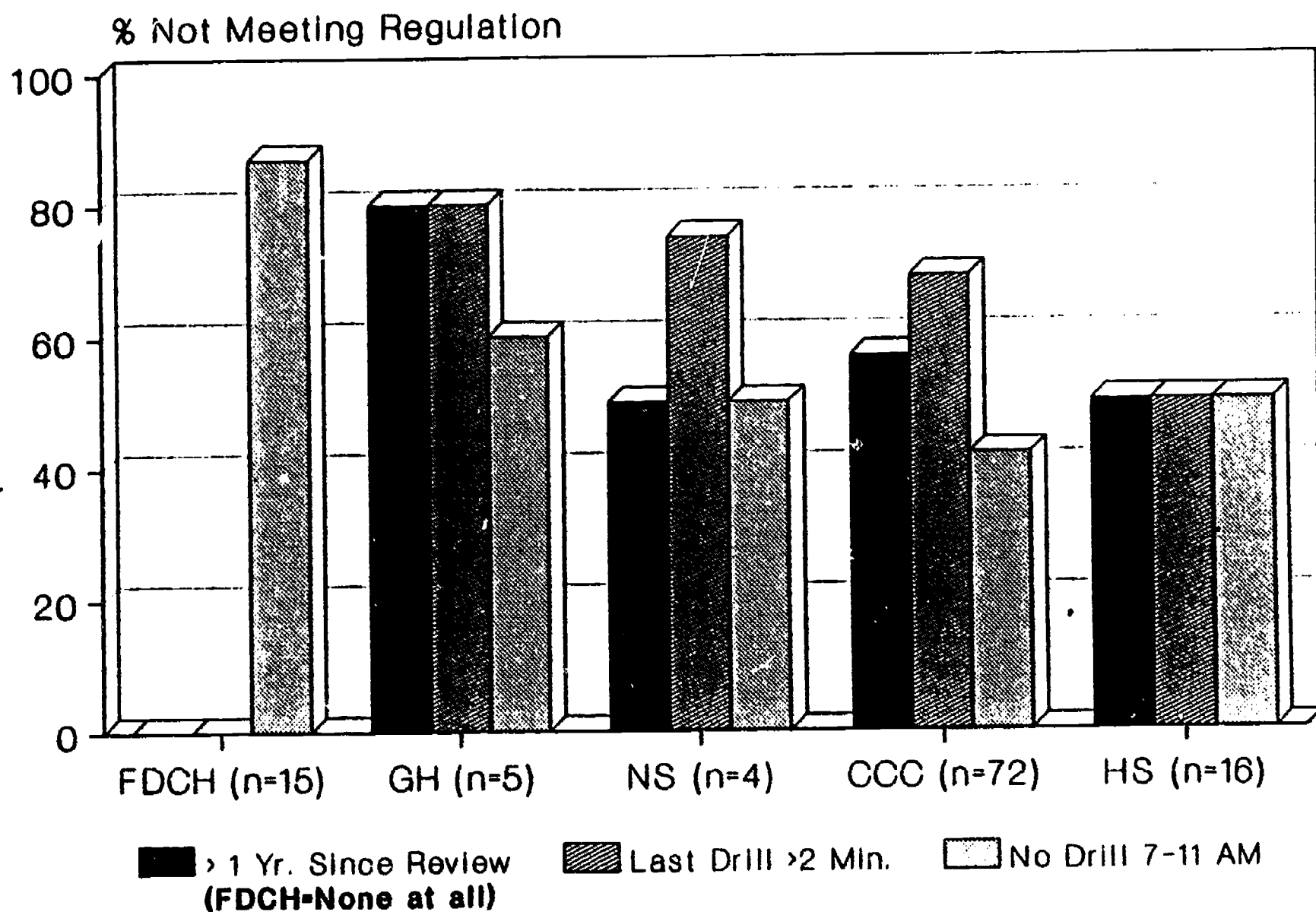




Chart 1  
Burn Risks

Risk/Hazard/Problem	FDCH (n=15) %	Group (n=5) %	Nursery (n=4) %	Center (n=72) %	Head Start (n=16) %
Hot water temperature > 110 degrees	73	80	25	18	56
Microwave heating of infant formula/food	--	50	33	70	--
Space heaters being used	--	40	0	24	0
Electrical outlets not covered	20	0	25	13	25

Chart 2

Transportation Hazards<sup>1</sup>

<b>Risk/Hazard/Problem</b>	<b>Group ‡</b>	<b>Nursery ‡</b>	<b>Center ‡</b>	<b>Head Start ‡</b>
Local police not involved re vehicular/ pedestrian safety at site	60 (n=5)	0 (n=4)	53 (n=72)	53 (n=15)
Parents not told about where to pick up/drop off safely	60 (n=5)	25 (n=4)	25 (n=71)	6 (n=16)
Transport more children than vehicle safely carries	67 (n=3)	0 (n=1)	41 (n=37)	20 (n=15)
No driver training for child transport	67 (n=3)	100 (n=2)	77 (n=35)	23 (n=13)
Insufficient staff/child ratio during transport	33 (n=3)	100 (n=1)	46 (n=37)	67 (n=15)

<sup>1</sup>Data from programs which reported on specific item.

Chart 3

**Age-appropriate Seat Restraints Not Used<sup>1</sup>**

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<b>FDCH (n=11)</b>	<b>Group (n=3)</b>	<b>Nursery (n=2)</b>	<b>Center (n=39)</b>	<b>Head Start (n=15)</b>
<b>‡</b>	<b>‡</b>	<b>‡</b>	<b>‡</b>	<b>‡</b>
<b>0</b>	<b>67</b>	<b>50</b>	<b>46</b>	<b>20</b>

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<sup>1</sup>Data from programs which reported on this item.

Chart 4

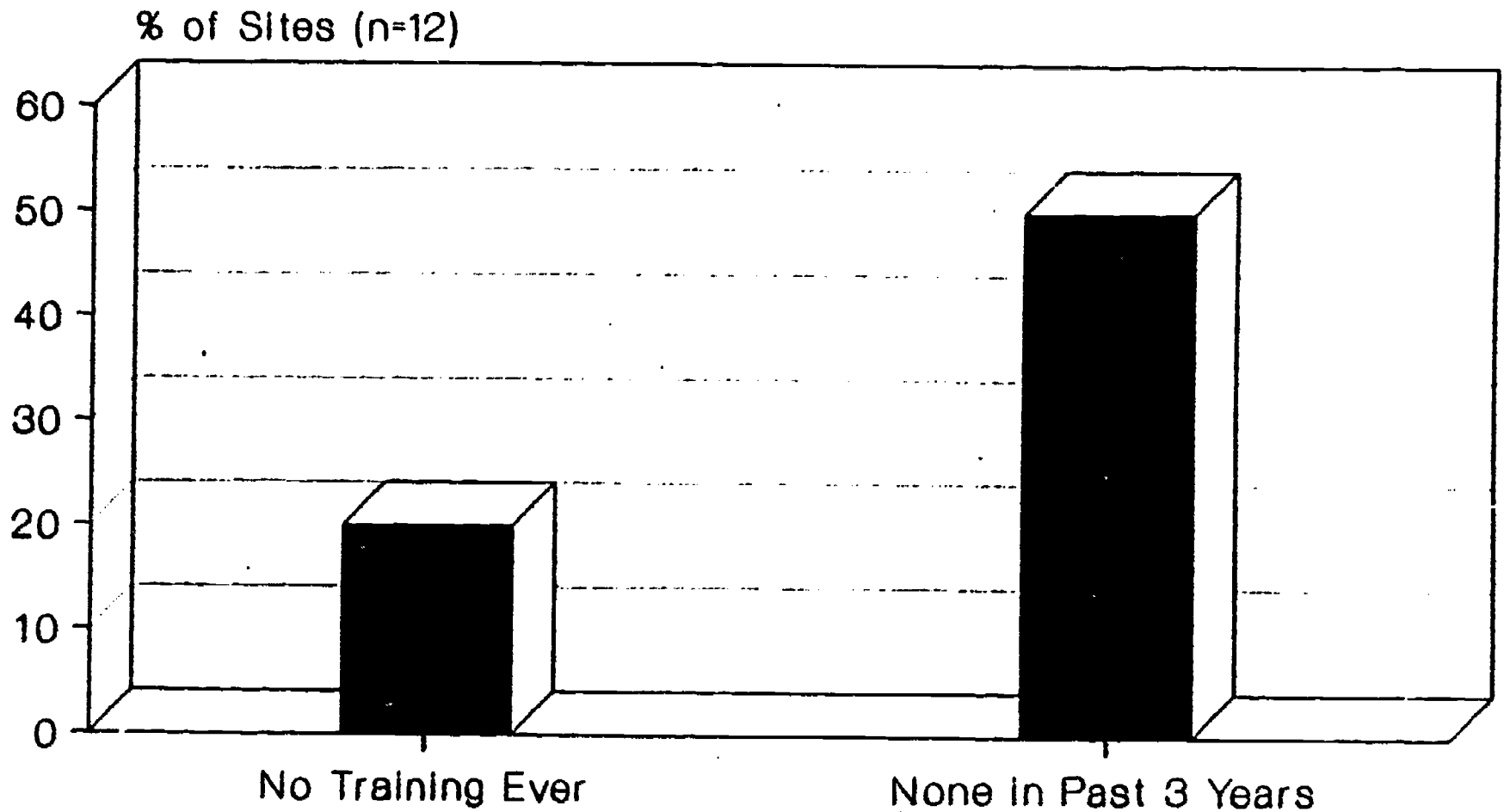
Playground Hazards<sup>1</sup>

<b>Risk/Hazard/Problem</b>	<b>FDCH ‡</b>	<b>Group ‡</b>	<b>Nursery ‡</b>	<b>Center ‡</b>	<b>Head Start ‡</b>
<b>Broken playground equipment</b>	0 (n=5)	100 (n=2)	50 (n=2)	63 (n=40)	83 (n=6)
<b>No cushioning surfaces under climbers</b>	11 (n=9)	50 (n=2)	67 (n=3)	47 (n=51)	55 (n=11)
<b>Exposed hooks, links</b>	21 (n=14)	0 (n=5)	33 (n=3)	18 (n=67)	39 (n=13)
<b>Exposed screws, bolts</b>	33 (n=9)	0 (n=4)	33 (n=3)	15 (n=60)	46 (n=11)
<b>Broken glass, sharp edges</b>	14 (n=14)	0 (n=5)	33 (n=3)	11 (n=65)	21 (n=14)

<sup>1</sup>Data from programs which reported on specific item.

Graph 3

## First Aid Training Reported by Family Day Caregiver



Graph 4

# Lack of Immunization

