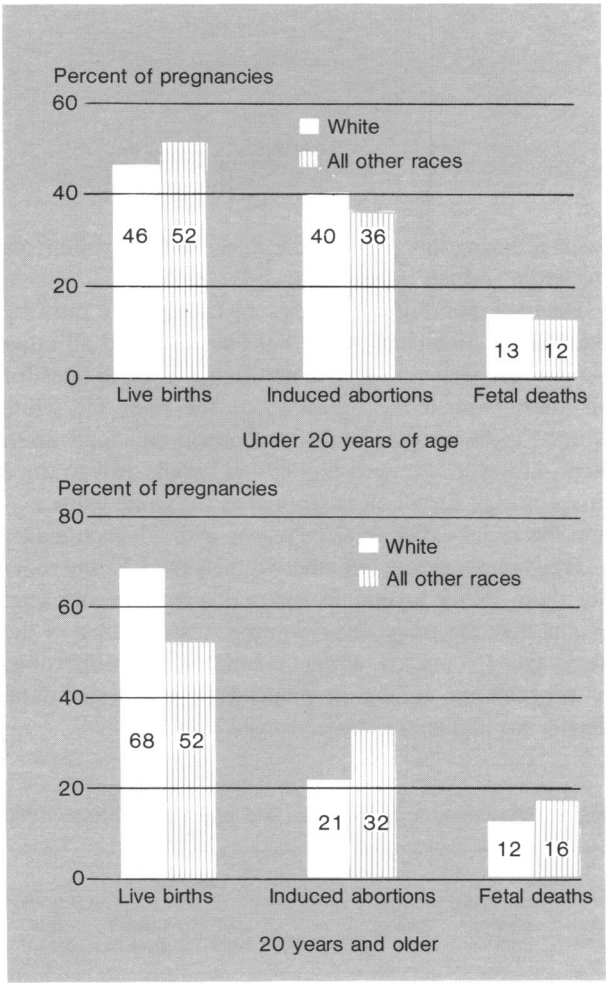
Figure 2. Percent of pregnancies ending as a live birth, induced abortion, or fetal death by race for women under 20 years of age and those 20 years or older, United States 1980

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# Age Variation in Use of a Contraceptive Service by Adolescents


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## Synopsis


*During the past decade, much has been written about adolescents' use of contraception and their experience of pregnancy. Few researchers, however, have distinguished between the experiences of older and younger adolescents.*

*The purpose of this paper is to provide such a comparison. The data were collected during more than 7,000 visits made by 4,318 patients during almost 5 years of*

*operation of an adolescent contraceptive service in the Washington Heights area of New York City. Characteristics of four groups—14 years and younger, 15–17 years, 18–19 years, and 20–21 years—were examined.*

*The youngest teens initiated sexual intercourse 4 years earlier than the oldest group. Among those 14 or younger, 87 percent had never used contraception, and 9 percent had been pregnant. In the oldest group, more than two-thirds had used a contraceptive method, and three-fifths had already experienced a pregnancy.*

*Results of multivariate analyses indicate that older teens are more likely to come to the clinic for contraception and to be consistent users of the first method of contraception that they select. On the other hand, younger teens are significantly more likely to revisit the clinic and to be pregnant at a second or later visit.*

RESEARCH ABOUT THE DETERMINANTS of contraceptive use by adolescents has generated several theories to explain why teenagers are less than perfect contraceptive users. One of the earliest explanations was the lack of access to contraception for this age group. Emphasis on increasing availability of services for adolescents was followed by suggestions that lack of knowledge among young people may also account for their unplanned pregnancies. Still other explanations focused on psychological or developmental characteristics of teens. Immaturity or inability to plan were said to characterize sexually active young people.

While each of these explanations is useful, it is not at all clear that access to services, knowledge about reproduction, or psychological characteristics are similar among older and younger adolescents. Indeed, it is probably obvious to those serving the reproductive health care needs of teenagers that they are not a homogeneous group. For example, the emotional and cognitive development of a 14-year-old often differs substantially from that of a 19-year-old. This reasoning would lead us to suspect that younger teens would be less likely than older ones to continue in contraceptive programs or to be effective users of birth control.

To date, however, only a few researchers have included comparisons of older and younger teenagers. Zelnik and Kantner's national studies consistently show that sexually active younger teenagers were more likely never to have used a birth control method than were older teens (*1,2*). Furthermore, older teens were more likely than younger ones to have had experience with every available birth control method except condoms and withdrawal.

Two studies also indicate that among teenagers who attend contraceptive services, age is related to clinic continuation. Both Edwards and coworkers (*3*) and Freeman and coworkers (*4*) found that younger teens were less likely to continue in contraceptive programs than were older ones.

The relationships between age and both contraceptive continuation and effectiveness among teenagers are less clear. Lane and coworkers (*5*) reported higher rates of accidental pregnancies among older teen diaphragm users than younger ones, but greater discontinuation rates for personal reasons among the younger teens. In a group of teens using various contraceptive methods, Morgenthau and coworkers found that pregnancy rates did not differ significantly between older and younger patients (*6*). Finally, Lyle and Segal report that data from the National Fertility Surveys indicate that women who begin using contraception at younger ages are more likely to fail than those who begin later (*7*).

Thus, based on these data about adolescent contraceptive use, we would expect younger teenagers to use contraception less often and to be less effective users than older teens. The small number of studies that have compared older and younger teens suggests some support for these hypotheses.

It is the purpose of this study to compare further the contraceptive use and pregnancy patterns among younger and older teens. Since the data come from young women attending a contraceptive clinic, access to services is controlled.

## Methodology

In October 1977, the Young Adult Clinic was opened for sexually active adolescents aged 21 years and younger by the Center for Population and Family Health and the Department of Obstetrics and Gynecology at the Columbia-Presbyterian Medical Center in New York City. This clinic is part of a broader Women's Reproductive Health Care Program serving women of all ages. The Young Adult Clinic and the Washington Heights area, where the service is located, have been described in detail elsewhere (*8*). The Washington Heights area has large percentages of sexually active teenagers. These young people may visit either the Young Adult Clinic, which offers services in the late afternoon and evenings, or the daytime clinics, which are not age-restricted. Services include counseling, infection screening, Pap smears, contraception, and pregnancy tests, as patients' needs dictate. During almost 5 years of operation, more than

Table 1. Demographic and social characteristics of the patient sample by age at first visit to the Young Adult Clinic, New York City (percentage distribution)

| *Demographic and social characteristics* | *14 years or younger* (*N* = 290) | 15–17 years (*N* = 1,814) | 18–19 years (*N* = 1,373) | 20–21 years (*N* = 841) |
|---|---|---|---|---|
| Total | 6.7 | 42.0 | 31.8 | 19.5 |
| Ethnicity:[1] | | | | |
| Black | 61.4 | 55.0 | 54.6 | 46.2 |
| Hispanic | 35.8 | 38.8 | 38.2 | 45.9 |
| White | 2.8 | 6.2 | 7.2 | 7.9 |
| Years of school completed:[1] | | | | |
| 1–9 | 96.7 | 39.0 | 5.8 | 6.7 |
| 10–11 | 2.9 | 53.0 | 34.8 | 20.7 |
| 12 or more | 0.4 | 8.0 | 59.4 | 72.6 |
| Mean[1] | *7.7* | *9.9* | *11.5* | *12.0* |
| Currently in school:[1] | | | | |
| Yes | 95.4 | 84.8 | 57.3 | 41.4 |
| No | 4.6 | 15.2 | 42.7 | 58.6 |
| Public assistance family:[1] | | | | |
| Yes | 35.8 | 30.6 | 26.2 | 26.8 |
| No | 64.2 | 69.4 | 73.8 | 73.2 |

[1] $P < .001$, as measured by chi-square test or $F$ ratio.

7,000 adolescents visited the Women's Reproductive Health Care Program.

The sample for this study includes 4,318 female patients whose first visit to the program was to the Young Adult Clinic and occurred between 1977 and 1982. An earlier study revealed that teenagers attracted to this clinic have characteristics different from teens who attend the day clinic (*9*). Since the focus in this paper is to examine the role of age in relation to clinic use, contraceptive use, and pregnancy patterns, the study is strengthened by selecting a subsample in which there is less variation in other patient characteristics.

For the analyses to follow, patients are divided into four age groups. Seven percent are 14 years of age or younger, 42 percent are 15 to 17, 32 percent are 18 to 19, and 19 percent are 20 or 21 years of age.

## Patient Characteristics

Table 1 displays the demographic and social characteristics of patients by age at first visit. The greatest number of patients in each group is black, but the percentage of blacks is greatest among the youngest patients. National studies have indicated that black young people initiate sexual activity earlier than others. Naturally, the youngest patients have completed fewer years in school and are more likely to be currently enrolled in school. However, younger patients are more likely to come from families receiving public assistance.

As would be expected, table 2 shows that the youngest teens initiated sexual intercourse an average of 4 years earlier than the oldest patients. Although more than half of the youngest women were 13 or younger at first intercourse, only 8 percent of the oldest women were that young.

Interestingly, however, among those who have never used a method of birth control, the oldest teens have spent considerably more time at risk of pregnancy before coming to the clinic than have the youngest teens. In one way this finding is to be expected, since the older teens have had more years in which to take risks. However, this also means that, among the older teens, there are more chronic risk-takers, whereas among the younger ones there may be greater motivation to avoid pregnancy.

More than two-thirds of the oldest women had used a contraceptive method before their first visit to the clinic, but 87 percent of those 14 years or younger had never used contraception. More than a majority of each group were not using a method at the time of first visit. Among those who had ever used a method, however, there are age differences in which method was last used. Although most patients in each age group last used pills, the youngest teens are more likely than the others to have last used condoms or foam or both.

About three-fifths of the oldest women had already experienced a pregnancy, and almost 37 percent had at least one live birth. In contrast, 9 percent of the teens 14 or younger and 26 percent of those aged 15 to 17 had been pregnant, with fewer than 1 and 11 percent, respectively, having had a live birth. These patient characteristics indicate that our youngest patients offer a real opportunity to prevent early pregnancy, since most of them approach the clinic before they are pregnant, and many have only recently begun their sexual activity. On the other hand, because of their early onset of sexual activity, these youngest patients will present a continuing challenge to keep them from having unwanted pregnancies prior to completion of their schooling.

## Clinic Utilization

How is the clinic used by these young women? Table 3 shows the reasons for first visits to the clinic by women in the four age groups, controlling for previous pregnancy. Among those who have been pregnant before, there is virtually no difference by age in the percentages seeking contraception at the first visit. The youngest teens with a previous pregnancy are somewhat less likely than the others to seek a pregnancy test at first visit, while the oldest teens are more likely than the others to be seeking infection screening.

Among those who have not been previously pregnant, there are two significant differences between age groups

in reason for first visit. The older teens are more likely than the others to come for contraception and infection screening at first visit. While the difference is not statistically significant, the youngest teens are the least likely to come for pregnancy tests.

Table 4 shows two kinds of program continuation rates. The first is the percentage of patients in each age group who return to the clinic within 12 months. This rate is more reflective of intervals between visits than of long-term contact, since a young woman might return to

Table 2. Sexual, contraceptive, and pregnancy histories of patient sample, Young Adult Clinic, New York City, by age (percentage distribution)

| *Sexual, contraceptive, and pregnancy histories* | *14 years or younger* | *15–17 years* | *18–19 years* | *20–21 years* |
|---|---|---|---|---|
| Age at first intercourse:[1, 2] | | | | |
| 10–13 years | 52.6 | 12.1 | 5.4 | 7.7 |
| 14–15 years | 47.4 | 47.0 | 22.0 | 8.8 |
| 16–17 years | 0.0 | 40.9 | 38.8 | 30.2 |
| 18 or older | 0.0 | 0.0 | 33.8 | 53.3 |
| Mean[1] | *13.3* | *15.1* | *16.5* | *17.3* |
| Interval between first intercourse and first clinic visit:[1] | | | | |
| Visit before first intercourse or within same year | 62.2 | 44.9 | 35.6 | 25.0 |
| 1 year | 30.6 | 33.3 | 26.1 | 20.6 |
| 2 years or more | 6.5 | 21.8 | 38.3 | 54.4 |
| Mean[1] | *0.3* | *0.9* | *1.4* | *2.0* |
| Previous contraceptive use:[1] | | | | |
| Yes | 13.3 | 31.2 | 52.5 | 69.0 |
| No | 86.7 | 68.8 | 47.5 | 31.0 |
| Using a method at first visit:[1] | | | | |
| Yes | 7.0 | 16.7 | 25.7 | 37.0 |
| No | 93.0 | 83.3 | 74.3 | 63.0 |
| Of those with contraceptive experience, method last used:[3] | | | | |
| Pills | 60.0 | 56.9 | 62.9 | 58.2 |
| IUD | 11.4 | 14.1 | 12.4 | 18.4 |
| Diaphragm | 2.9 | 8.1 | 10.8 | 1.60 |
| Condoms or foam or both | 25.7 | 20.9 | 13.9 | 7.4 |
| Ever pregnant:[1] | | | | |
| No | 91.3 | 73.6 | 57.3 | 38.4 |
| Yes | 8.7 | 26.4 | 42.7 | 61.6 |
| 1 live birth only | 0.4 | 7.0 | 9.9 | 14.0 |
| 1 abortion only | 7.3 | 14.6 | 19.5 | 20.4 |
| 1 live birth and 1 abortion | 0.0 | 2.0 | 4.5 | 8.3 |
| 2 or more live births only | 0.3 | 0.6 | 1.3 | 5.3 |
| 2 or more abortions only | 0.7 | 1.6 | 4.5 | 4.3 |
| More live births and abortions | 0.0 | 0.6 | 2.8 | 9.3 |

[1] $P < .001$ as measured by chi-square test or $F$ ratio.
[2] These data are not available for all women at the clinic. The percentages here are based on 78, 545, 391, and 182 women in the youngest to the oldest age groups.
[3] Chi-square value not reliable because of low expected cell frequencies.

Table 3. Reasons for first visit of patient sample, Young Adult Clinic, New York City, by previous pregnancy and age (percentage distribution)

| | *Ever pregnant* | | | | *Never pregnant* | | | |
|---|---|---|---|---|---|---|---|---|
| *Reason for first visit* | *14 years or younger* | *15–17 years* | *18–19 years* | *20–21 years* | *14 years or younger* | *15–17 years* | *18–19 years* | *20–21 years* |
| Contraception | 79.2 | 78.3 | 78.3 | 77.9 | 55.2 | 65.8 | 69.7 | [1]69.6 |
| Pregnancy test | 12.5 | 22.9 | 24.0 | 23.1 | 22.3 | 30.7 | 29.9 | 28.3 |
| Infection screening | 25.0 | 24.0 | 28.5 | [2]32.3 | 19.9 | 21.2 | 20.9 | [2]28.6 |

[1] $P < .001$ as measured by chi-square test.
[2] $P < .05$ as measured by chi-square test.

NOTE: Because patients often have more than one reason for a clinic visit these percentages exceed 100.0 in each age group.

the clinic at 1 week after her initial visit, never return again, and still be counted in the 12-month interval. At the end of 12 months, about three-fifths of patients had returned to the clinic for at least one followup visit. The difference in this rate among the four age groups is not statistically significant.

The second measure of clinic continuation is the percentage of young women who visit after 12 months. This latter measure is an indication of more prolonged program contact. Again, the differences among the revisit rates of the four age groups are not significant, but younger patients are somewhat more likely than older ones to maintain clinic contact.

## Contraceptive Acceptance

Table 5 shows data on patterns of contraceptive use among these four age groups. More of the youngest teens leave the clinic after a first visit without a contraceptive method. Other clinic data have shown that more than 80 percent of all patients who accept no method come to the clinic for reasons other than contraception, most often a pregnancy test. Pills are the most popular method for each age group, and the oldest women are more likely than the others to select an IUD at first visit. Nearly all patients who accepted IUDs had previously been pregnant. This fact in part explains the age difference, since older patients were more likely to have previously been pregnant than were younger ones.

Among those who had ever accepted a birth control method from the clinic, the youngest teens were the group least likely to accept pills and diaphragms, and the most likely to use condoms or foam or both (table 5). The youngest teens are less likely than are the older ones to be consistent users of a single method, with 88 percent of them switching birth control methods at some clinic visit.

Table 4. Revisit patterns of patient sample, Young Adult Clinic, New York City, in three age groups (percentage distribution)

| *Revisit rates* | *14 years or younger* | *15–17 years* | *18–19 years* |
|---|---|---|---|
| Revisited within 12 months[1] | 56.9 | 61.9 | 61.0 |
| Revisited beyond 12 months[2] | 48.0 | 45.2 | 41.4 |

[1] To allow ample time for revisits, base number includes patients whose first visit occurred by July 1981.
[2] To allow ample time for revisits, base number includes patients whose first visit occurred by January 1981.
NOTE: Revisit rates are not given for patients 20 years and older because they become ineligible to attend the YAC after reaching age 22.

## Pregnancy

As might be expected from these data on patterns of contraceptive use, a higher percentage of the younger than of the older patients are pregnant at a second or later visit. Following are the percentages of young women with a positive pregnancy test at the second or later visit:

| *Age group* | *Positive test[1]* *Yes* | *No* |
|---|---|---|
| 14 years and younger | 18.6 | 81.4 |
| 15–17 years | 15.2 | 84.8 |
| 18–19 years | 12.7 | 87.3 |
| 20 years or older | 5.6 | 94.4 |

[1] $P < .001$ as measured by chi-square test. Only patients who visited the program at least twice are included in these calculations.

Table 5. Method used by patient sample, Young Adult Clinic, New York City, by age (percentage distribution)

| *Method accepted and pattern of use* | *14 years or younger* | *15–17 years* | *18–19 years* | *20–21 years* |
|---|---|---|---|---|
| Method accepted at first visit:[1] | | | | |
| None | 44.2 | 29.9 | 25.6 | 22.7 |
| Pills | 27.7 | 38.1 | 37.8 | 37.6 |
| IUD | 2.1 | 4.3 | 5.5 | 10.5 |
| Diaphragm | 9.7 | 11.9 | 17.8 | 18.0 |
| Condoms or foam, or both | 16.3 | 15.8 | 13.3 | 11.2 |
| Among those who accepted birth control, methods ever accepted: | | | | |
| Pills[1] | 44.8 | 55.6 | 51.7 | 47.2 |
| IUD | 12.4 | 12.6 | 13.0 | 15.0 |
| Diaphragm[2] | 22.8 | 24.8 | 30.2 | 27.1 |
| Condoms or foam or both[1] | 37.2 | 30.8 | 24.9 | 19.4 |
| Pattern of method utilization:[1, 3] | | | | |
| Consistent user | 11.6 | 25.7 | 32.0 | 38.6 |
| Switches but resumes use | 29.9 | 20.0 | 16.4 | 14.6 |
| Switches to another method | 58.5 | 54.3 | 51.6 | 46.8 |

[1] $P < .001$ as measured by chi-square test.
[2] $P < .01$ as measured by chi-square test.
[3] Only patients who visited the clinic at least twice are included in these calculations.

Interestingly, even when previous pregnancy is controlled, there is a steady decline in pregnancy rates as age increases. Thus, despite shorter intervals of risk taking before coming to the clinic, and better clinic continuation rates, the younger patients still experience higher pregnancy rates.

*'. . . We would expect younger teenagers to use contraception less often and to be less effective users than older teens. The small number of studies that have compared older and younger teens suggests some support for these hypotheses. It is the purpose of this study to compare further the contraceptive use and pregnancy patterns among younger and older teens.'*

## A Multivariate Analysis

Having examined the bivariate relationships between age and the dependent variables, it becomes important to consider the relationship of age to these variables when other characteristics are controlled. This step is particularly necessary since the data in tables 1 and 2 indicated substantial differences in characteristics among the four age groups. Therefore, this analysis controls for ethnicity, receipt of public assistance, previous contraceptive use, and previous pregnancy, in order to examine the impact of age, net of these factors. We have not included control for educational attainment or school enrollment, since they are often a function of, and are so closely related to, age.

Our analytical procedure is logistic regression because most of the dependent variables are binary. The dependent variables used to assess contraceptive use in the logistic regression have been simplified somewhat from those in the bivariate analyses. For example, instead of presenting separate equations to predict acceptance of each birth control method, a new variable was derived to measure whether each patient had ever accepted pills or an IUD—the most effective and, in the case of pills, the most commonly chosen methods. Similarly, pattern of method use has been dichotomized into those who switched methods and those who did not.

Table 6 presents the results of this analysis. The coefficients report the change in the natural logarithm (log) of the odds of each dependent variable associated with a unit change in the independent variable. The antilogs of these coefficients, shown only for age, indicate the extent to which the odds of the dependent variable are multiplied, for a unit increase in the independent variable, controlling for all other independent variables in the model. For example, when controlling for the other variables, an increase of 1 year of age results in patients

Table 6. Logistic regression results for analyses of the study's dependent variables

| | *Dependent variables* | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | *Reason for first visit is—* | | | | | | | |
| *Independent variables* | *Contraception* | *Pregnancy test* | *Infection screening* | *Revisit within 12 months* | *Revisit beyond 12 months* | *Ever accepted pills or IUD* | *Consistent user of initial method* | *Pregnant at second or later visit* |
| White | .009 | .028 | [1] −.484 | −.236 | [2] −.322 | [1] −.370 | .122 | [1] −.769 |
| Hispanic | [3] −.477 | [3] .454 | [2] −.191 | −.104 | [2] −.208 | [1] −.224 | [1] −.283 | −.152 |
| Receives public assistance | −.042 | −.097 | .090 | −.127 | .090 | .101 | [3] −.465 | .182 |
| Previous birth control use | [3] .505 | [3] −.043 | [3] .419 | .162 | [3] .362 | [3] .528 | .190 | .048 |
| Previous pregnancy | [3] .302 | −.165 | .066 | .122 | .002 | [3] −.418 | .031 | [2] .371 |
| Age[4] | [2] .041 | .032 | [1] .059 | [2] −.050 | [3] −.224 | [3] −.068 | [3] .162 | [3] −.190 |
| Antilog of logistic regression coefficient | (1.04) | (1.03) | (1.06) | (.95) | (.80) | (.93) | (1.18) | (.83) |
| Number of patients | 3,940 | 3,938 | 3,874 | 3,348 | 2,877 | 4,015 | 2,442 | 3,868 |
| Percentage of patients correctly predicted | 71.3 | 73.3 | 75.6 | 60.7 | 60.6 | 61.1 | 70.6 | 87.2 |
| $P^2$ of full model | .031 | .017 | .014 | .001 | .032 | .026 | .029 | .023 |
| Chi square of full model | 160.57 | 89.81 | 74.45 | 18.00 | 135.63 | 150.38 | 97.08 | 79.68 |
| Significance | .001 | .001 | .001 | .01 | .001 | .001 | .001 | .001 |
| Degrees of freedom | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |

[1] $P < .01$ as measured by chi-square.
[2] $P < .05$ as measured by chi-square.
[3] $P < .00$ as measured by chi-square.
[4] The mean of the age variable was subtracted from each patient's age.

being 1.04 times more likely to mention contraception as a reason for their first visit.

These regressions indicate that age is significantly related to each of the dependent variables, except for pregnancy, as a reason for first visit. Net of the other variables in each equation, older teens are significantly more likely than younger ones to have contraception as their reason for a first visit and to be consistent users of the first method of contraception that they select. Younger teens, on the other hand, are significantly more likely to revisit the clinic both within and beyond a 12-month period, to accept pills or an IUD, and to be pregnant at a second or later visit. However, the models offered predict only modest amounts of the variance in the dependent variables.

## Conclusions

As previous studies and theoretical explanations for adolescent pregnancy would suggest, we have found that the youngest patients in our reproductive health care program differ in important ways from the older teens. Those who are younger at their first visit are less likely to have had prior experience with birth control, less likely to have been pregnant, more likely to leave the clinic with no method of birth control, and more likely to switch methods. These differences alone are important to service providers. Unfortunately, however, while the majority do not return pregnant, the younger teens in our program are more at risk of this than are the older ones.

Some of these outcomes are undoubtedly a function of opportunities. Younger teens, having more years of exposure, have longer periods of time in which to switch contraceptives, return to the clinic, and get pregnant. Still, service providers would do well to remember that their teen patients are indeed a heterogeneous group and that those under age 15, in particular, need special care.

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# The Cuban Immigration of 1980: a Special Mental Health Challenge


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## Synopsis


*The 124,769 Cubans who entered the United States from Cuba in a boatlift in 1980 included a small minority of people who needed mental health care. Some had been taken involuntarily from psychiatric hospitals, mental retardation facilities, jails, and prisons.*

*The National Institute of Mental Health, Public Health Service (PHS), was responsible for mental health screening, evaluation, and treatment of the Cuban Entrants. Bilingual psychiatrists and psychologists found that many Entrants given preliminary evaluations showed evi-*