U.S. Department of Housing and Urban Development
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Moving to

OPPORTUNITY *for*

Fair Housing Demonstration Program

Interim Impacts Evaluation

Moving to Opportunity
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Executive Summary

In 2000, 3.5 million poor people across the United States lived in neighborhoods with poverty concentrations in excess of 40 percent. A growing social science literature suggests that such concentration has a variety of detrimental effects on the residents of these areas in terms of both their current well-being and their future opportunities. The harmful effects of high-poverty areas are thought to be especially severe for children whose behavior and prospects may be particularly susceptible to a number of neighborhood characteristics, such as peer group influences, school quality, and the availability of supervised after school activities.

Less has been written about whether and how other neighborhood environments exert positive influences on behavior and life changes. Ellen and Turner (1997) summarize the literature in this area, citing various theories about the mechanisms by which middle-class (often predominantly white) neighborhoods shape or reshape the lives of their residents.

This study reports interim results from a major federal initiative to explore whether living in better neighborhoods can improve the lives of low-income parents and children. That initiative is the Moving to Opportunity for Fair Housing Demonstration, originally mandated by Congress and carried out by the U.S. Department of Housing and Urban Development (HUD).

Introduction to Moving to Opportunity

Moving to Opportunity (MTO) was designed to answer questions about what happens when very poor families have the chance to move out of subsidized housing in the poorest neighborhoods of five very large American cities. MTO was a demonstration program: its unique approach combined tenant-based housing vouchers (from the Section 8 program[1]) with location restrictions and housing counseling. MTO was also a randomized social experiment, carefully designed and rigorously implemented to test the effects of this approach on participating families.

Between 1994 and 1998, the housing authorities in five demonstration sites—Baltimore, Boston, Chicago, Los Angeles, and New York—worked in partnership with local nonprofit counseling organizations to recruit about 4,600 very low-income families for MTO. The families, all of whom lived in public housing or private assisted housing projects in the poorest parts of these cities, responded to outreach that offered them a chance to move with housing vouchers from their current homes and neighborhoods. Exhibit ES.1 summarizes key facts about demonstration implementation.

The demonstration sites shared some characteristics, including the presence of large, distressed public housing developments in concentrated poverty neighborhoods (where more than 40 percent of the population lived below the poverty line). The cities differed in other ways: in the racial and ethnic

[1] In 1999 the Section 8 program was renamed the Housing Choice Voucher Program. In this report we will continue to refer to the program as *Section 8*, because the rules of the demonstration were set under that program.

composition of their eligible populations and in the nature of their housing markets. Despite these differences, the demonstration was implemented with considerable uniformity, particularly with respect to recruitment, informed consent of participants, issuance of vouchers, and the rules governing their use. Through joint training, central oversight, and regular monitoring and data collection, HUD made sure that the procedures developed for MTO were carefully followed.

EXHIBIT ES.1

Moving to Opportunity Implementation—Basic Facts

- **Origin—**The MTO demonstration was funded by Congress, with $70 million in Section 8 rental assistance for fiscal year 1992 (carried over to FY93), with additional vouchers allocated by participating housing authorities and with additional funds from the local housing authorities and nonprofit counseling agencies.
- **Sites—**Baltimore, Boston, Chicago, Los Angeles, and New York City.
- **Family eligibility—**Families had to live in public housing or private assisted housing in areas of the central cities with very high poverty rates (40 percent or more), have very low incomes, and have children under 18 years old.
- **Program size—**Among those who applied for the program between June 1994 and July 1998, 4,608 families were found to be eligible. Of those, 3,169 families were offered vouchers and 1,676 were able to find a unit and successfully move.
- **Continuous tracking—**HUD has been working to keep in touch with the MTO families since they joined. In 2002 researchers contacted almost 8,900 adults and children for this study. Taking into account a subsample of hard-to-find families, the effective response rate for the interim evaluation is 89 percent.

A key reason for developing special procedures and making sure they were uniformly implemented was that MTO was a randomized social experiment as well as a demonstration program. The critical feature of MTO's research design was random assignment of the families who joined the demonstration (with their informed consent). Each family was randomly assigned to one of three groups:

- The **experimental group** was offered housing vouchers that could only be used in low-poverty neighborhoods (where less than 10 percent of the population was poor). Local counseling agencies helped the experimental group members to find and lease units in qualifying neighborhoods.
- The **Section 8 group** was offered vouchers according to the regular rules and services of the Section 8 program at that time, with no geographical restriction and no special assistance.
- Finally, **control group** members were not offered vouchers but continued to live in public housing or receive other project-based housing assistance.

To use their vouchers, families assigned to the experimental group had to move to low-poverty areas. Those in the Section 8 group could use their vouchers to move to neighborhoods of their own choosing. Both groups were required to make these moves within a limited amount of time. In order to retain their vouchers, experimental families were required to stay in low-poverty areas for one year, after which they could move without locational constraints.

Exhibit ES.2 summarizes the key features of MTO's research design. Random assignment makes the three groups of participating families statistically the same, so that any later significant differences (differences greater than chance would produce) in the neighborhoods, housing, employment, or other aspects of the experimental group's lives in comparison with the control group can be attributed to the MTO intervention. Of course, such differences should only be attributed to MTO if there are social scientific hypotheses suggesting that changing location can influence these outcomes. And in fact, a considerable theoretical foundation does exist for the MTO experiment (as described below).

EXHIBIT ES.2

MTO Experimental Design—Basic Facts

- **Research objective—**to test the long-term effects on adult and child well-being when families move from public or project-based assisted housing in very poor areas to private-market rental housing in areas with much lower poverty rates.

- **Experimental design—**random assignment of the families who joined the program to one of three groups:

  - an **experimental group,** which received Section 8 vouchers useable only in low-poverty areas (census tracts with less than 10 percent of the population below the poverty line in 1990), along with counseling and assistance in finding a private rental unit.
  - a **Section 8 group,** which received regular vouchers (geographically unrestricted) and whatever briefing and assistance the local Section 8 program regularly provided.
  - a **control group,** which received no vouchers but continued receiving project-based assistance.

- **Longitudinal study—**By following the families over a period of about 10 years, collecting data on various aspects of the adults' and children's lives, and comparing the experiences of each treatment group to that of the control group, the experiment would permit answers to these vital questions:

  - What are the impacts of joining the MTO demonstration on household location and on the housing and neighborhood conditions of the participants?
  - What are the impacts of moving to a low-poverty neighborhood on the employment, income, education, health, and social well-being of family members?

MTO eligibility was targeted to residents of project-based subsidized housing in neighborhoods with poverty rates of 40 percent or more. The mean poverty rate of baseline locations was, in fact, much higher at 56 percent. And a substantial proportion of MTO families were living in severely distressed

public housing when they joined, including a number of the earliest developments to be demolished under the HOPE VI program.

After random assignment, members of the experimental group received their geographically restricted vouchers and worked with the local nonprofit counseling agencies to prepare for and conduct their housing searches in low-poverty areas. Just under half of the experimental group families moved to low-poverty areas with MTO vouchers. Families in the Section 8 group received their regular vouchers and housing authority briefings and assistance and then searched for housing on their own. Just over 60 percent of this group was able to use the MTO vouchers, which required moving to other housing but without the restriction to low-poverty areas. After random assignment, members of the control group continued to live in their project-based subsidized housing in these areas of great poverty. The nonmovers in both the experimental and Section 8 groups also initially remained in their baseline public or assisted housing units.

Despite its unique aspects, the MTO experiment can tell us a great deal about HUD's main current housing programs. While not representative of public housing nationwide, the conditions of distress and concentrated poverty where the families were living when they joined MTO were not uncommon in big city public housing across the country. By offering tenant-based subsidies (vouchers) to such families, MTO provides a test of what difference it might make to switch very low-income families from place-based to mobile subsidies. At the present time, these are the major forms of low-income rental assistance with about 1.1 million families and individuals living in public housing, 1.5 million households in privately owned assisted projects, and 1.8 million households using vouchers. By constraining the experimental group to move to low-poverty communities, MTO was testing whether vouchers can be a vehicle for substantial changes in neighborhood environment. If the long-term results of MTO research show significant improvements in the well-being and life chances of experimental group members, we will have learned that housing vouchers can provide access to meaningful opportunities for poor families.

Of course, policies designed to move low-income families from public housing in high-poverty areas to private housing in low-poverty areas can take forms other than the location-restricted vouchers used in MTO. Mobility counseling or other supports for moving to low-poverty areas could be incorporated into the regular voucher program. HUD could create goals and performance incentives for program administrators to encourage moves to opportunity areas, and both assisted and affordable housing in low-poverty areas can be created or preserved through decisions with respect to state agency refinancing policies, allocations of low-income housing tax credits, use of HOME funds, public housing authority (PHA) project basing of vouchers, and other existing housing programs and policies.

Context of MTO

Policy and social science background

Recent interest in geographic location and mobility as important factors shaping the futures of low-income families began with the results of the Gautreaux Program, a federal court-ordered racial desegregation program in Chicago. Under the name of tenant activist Dorothy Gautreaux, applicants

and residents of Chicago public housing brought a class-action housing segregation lawsuit against HUD and the Chicago Housing Authority (CHA) in 1966. The courts ordered HUD and CHA to remedy the extreme racial segregation they had imposed on public housing applicants and residents by providing (among other remedies) a housing mobility option throughout the Chicago region for about 7,100 black families.

This option became known as the Gautreaux Program, which took shape in the late 1970s. Participating families were helped to move out of racially isolated areas through the (then new) tenant-based Section 8 program. Families chosen for the Gautreaux program received Section 8 certificates[2] that required them to move either to predominantly white or racially mixed neighborhoods. They also received assistance from housing counselors to make these moves.

Beginning in the late 1980s, research on the Gautreaux Program suggested that, over time, the moves to less segregated suburban locations were associated with measurable improvements in the lives of participating adults and children. Researchers found that suburban movers were more likely to have been employed than city movers. Positive changes were also reported for small samples of children who had been living in less segregated neighborhoods. Although they had initially experienced declines in school performance, in the long run (7 to 10 years) such children were less likely to drop out of school and were more likely to take college-track classes than their peers in a comparison group who moved to city neighborhoods, which were both poorer and more racially segregated than the suburban locations. After graduating from high school, the Gautreaux children were also more likely than their city peers to attend a 4-year college or become employed full-time.

At roughly the same time, several influential studies were drawing attention to the increasing concentration of poverty and the harm done to residents of high-poverty areas, in terms of both their current well-being and their future opportunities. The Gautreaux research excited great interest in both social scientific and policy circles because it seemed to suggest that there were remedies to the damaging effects of life in concentrated poverty neighborhoods. Yet the Gautreaux findings were limited by the fact that the causal link between the new residential locations and the improvements was not certain: The observed differences might reflect differences between the kinds of people who moved to the suburbs through Gautreaux and those who moved within the city rather than reflecting the effects of the different residential locations. Because this was a nonexperimental comparison of families who moved to different types of neighborhoods, there was a serious risk of selection bias in drawing conclusions from such a comparison.

MTO was designed to be the experiment that directly and rigorously tests whether moves to low-poverty areas can bring about positive changes in the lives of poor families. Because families in MTO were randomly assigned, the three groups started out comparable by definition. And as long as comparisons made thereafter are based on the three groups as a whole (all their members, not just movers), the risk of selection bias is eliminated.

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[2] The form of the voucher program current at that time.

Prior studies of MTO

Research on MTO began while the operational phase of the demonstration was still under way. HUD issued a first report to Congress once all the sites had begun enrolling and counseling families. Observations and analyses of the counseling delivered to experimental group families through MTO were documented about midway through the operations period. When enrollment and lease-up ended in 1999, HUD reported initial findings about the participating families and the program moves made by experimental and Section 8 group families.

In 1997 HUD's Office of Policy Development and Research conducted an MTO grant competition and ultimately made eight small awards to teams of researchers with varied topics and approaches. Each team was given access to the MTO participants in one of the five sites for purposes of assessing different aspects of the families' early experiences there. The small grant research results suggested that the demonstration might well be having—at least in the short term—impacts on such dimensions as health, safety, delinquency patterns, and educational outcomes. The early studies did not find any employment or other economic effects.

An important contribution of this research was to suggest the appropriate breadth of a full-scale evaluation. But because the timing of program entry extended from 1994 to 1998 and because each study was done in a single site, the small grant research needed to be followed by more comprehensive and uniform research when more time had elapsed for the families in the program. It was clear that the MTO design and sample could be used to learn about a wide range of topics. It was equally clear that many questions remained to be answered.

The Interim Evaluation

The present study—the MTO interim evaluation—was designed to examine MTO's impacts at about the midpoint of the 10-year research period originally mandated by Congress. A final impact evaluation will be conducted approximately a decade after the end of program operations. This interim research does not utilize the entire MTO program population because the families that joined MTO in 1998 (and in some cases did not move until early 1999) had less than 4 years exposure to the program after random assignment. The final evaluation will include the entire set of families in MTO.

The interim evaluation has two major components, one using qualitative methods and the other using quantitative methods, to assess MTO's effects in six study domains:

1. Mobility, housing, and neighborhood
2. Adult and child physical and mental health.
3. Child educational achievement.
4. Youth delinquency and risky behavior.
5. Adult and youth employment and earnings.
6. Household income and public assistance receipt.

The main goals of the qualitative research were to help enrich our understanding of how neighborhood affects families, to help illuminate the mechanisms that underlie such effects, and to assist in the interpretation of the quantitative findings from the analysis of the survey and administrative data.

The central quantitative objective is to estimate the impacts of the housing vouchers received by the experimental and Section 8 groups—after 4 to 7 years—on a wide range of outcomes across the six domains. MTO's random assignment design ensures that the measured differences can be attributed to the demonstration intervention and not to differences in the families' characteristics or motivation.

However, it is certainly too soon to conclude that the absence of significant differences in one or more domains means MTO had no impact. In its timing, this study is directed at relatively short-term or midterm effects, those most immediately associated with changes in residential location. The final evaluation (after 10 years) may show that the midterm effects have (or have not) endured. And it may detect additional effects that took longer to appear.

The questions addressed in this interim evaluation are of great importance. To what extent are the adverse outcomes associated with living in very poor neighborhoods the products of the neighborhoods rather than of the characteristics of those living there? If the adverse outcomes are products of the neighborhoods, to what extent do opportunity moves to areas with minimal poverty offer a means of ameliorating them? If public housing residents are given unrestricted tenant-based housing assistance, do they make locational choices that afford them access to some or all of the same life improvements as opportunity moves?

But MTO can teach us even more. They also offer a perspective on the importance of creating or preserving assisted housing in low-poverty locations. This latter point is relevant to quite a number of current housing policy issues and initiatives affecting new and existing private project-based assisted housing: mark to market, mark-up-to-market, state agency refinancing policies, allocation of Low Income Housing Tax Credits, use of HOME funds, and PHA project basing of vouchers. The MTO research results addressing these important questions could help inform social policy in the United States for years to come.

Study Findings on MTO Mobility

The move out of public housing into a low-poverty neighborhood is intended to expose the experimental group to an environment that might improve life chances. The move to private market housing—whatever the neighborhood—is intended to expose the Section 8 group to an environment that might also alter future paths, as compared to the lives of those who remain, at least initially, in project-based public or assisted housing in high-poverty areas.

Families in all three groups may have moved since random assignment. These moves could result from changes in peoples' lives related to MTO—such as increased employment and earnings—and they could in turn affect the outcomes in other areas such as education or housing assistance. Thus, it was important to examine both initial and subsequent moves as they relate to the outcomes of interest to this study.

In this section, we first present estimated impacts for the entire experimental group or Section 8 group randomly assigned, including those who did not lease up, and then show the corresponding findings for the families who did move with program vouchers. The former estimates show the effect of the demonstration on the entire group offered vouchers, the latter on those who actually experienced a program-induced change in residential location.

We found that MTO had substantial, positive effects on the mobility of families in the experimental and Section 8 groups and on the characteristics of the neighborhoods in which they lived. Almost half of the families assigned to the experimental group leased up with program vouchers, as did more than three-fifths of the families in the Section 8 group (Exhibit 2.1). To use the voucher, experimental group families were required to move to census tracts with poverty rates below 10 percent in the 1990 Census. Because many moved to neighborhoods where the poverty rate was increasing between 1990 and 2000, we estimate that only about half of their destinations had poverty rates below 10 percent at the time of the move, although virtually all had rates below 20 percent (Exhibit 2.3). Among the Section 8 group, who could use the voucher anywhere they could find housing that met Section 8 quality standards (with a rent they could afford and a willing landlord), fewer than 30 percent of those who moved with program vouchers moved to census tracts with poverty rates below 20 percent, although the overwhelming majority moved to neighborhoods with lower poverty rates than the areas where they had lived in public housing.

As noted earlier, the experimental families were only constrained to live in low-poverty areas for one year. By the time of the interim evaluation, these differentials in poverty rates had narrowed somewhat, in part because of subsequent moves by the experimental families and in part because of changes over time in neighborhood poverty rates, but they had by no means disappeared. Among those who moved with program vouchers, 60 percent of the experimental group families were still in census tracts with poverty rates below 20 percent, while 30 percent of the Section 8 families were in such tracts (Exhibit 2.5). The treatment-control differentials had narrowed as well, in part as a result of changes in the poverty rates of the neighborhoods where treatment group families resided but also because over two-thirds of the control group families had moved (either on their own or in connection with public housing demolition or redevelopment—e.g., as part of the HOPE VI program). By the time of the interim evaluation, about 17 percent of the control group families lived in census tracts with poverty rates below 20 percent, and just over half lived in tracts with rates below 40 percent.

It is noteworthy that even those families who moved to low-poverty areas did not necessarily move to predominantly white or racially integrated areas. Among families in the Section 8 group, at the time of the interim evaluation over three quarters of both those who moved with program vouchers and those who did not were living in census tracts that were over 80 percent minority, about the same proportion as among control group families (Exhibit 2.6). Among experimental families, 60 percent of those who moved with program vouchers were in heavily minority areas. For minority families in the experimental group who moved with program vouchers, the experiment reduced the average percent minority in their neighborhood by less than 10 percentage points. There was no significant effect on this measure for Section 8 families (Exhibit 2.8).

These mobility patterns resulted in a number of significant improvements in the environment in which experimental group families lived and lesser improvements for Section 8 group families. At the time of the interim evaluation, experimental group families who moved with program vouchers lived in neighborhoods with higher proportions of adults employed, substantially higher proportions of

two-parent families and high school graduates, and nearly twice the rate of homeownership as in the neighborhoods where they would have lived absent the demonstration, as evidenced by where the controls lived (Exhibit 2.10). Section 8 group families who moved with program vouchers also saw significant gains in these neighborhood attributes, but those gains were generally only about half as large as those experienced by experimental group families.

These changes in the neighborhood environment substantially increased the chances that adults in experimental group families would have college educated friends or friends earning $30,000 or more (Exhibit 2.10). There was no significant effect on these outcomes for adults in Section 8 families, who lived in somewhat higher poverty areas than the families in the experimental group.

Evidence about Short to Mid-Term Effects of MTO

Among the expected impacts of the MTO demonstration, some might occur in the short term (1 to 3 years), others in the middle term (perhaps 5 to 6 years), while still others would not be expected to occur until more time had passed for the people in the program. We expected short- to midterm effects on housing, neighborhood, safety, health, and delinquency (based on the earlier MTO research).

Improved housing, neighborhood conditions, and safety

The families who moved with program vouchers markedly improved their neighborhood conditions, reporting large reductions in the presence of litter, trash, graffiti, abandoned buildings, people "hanging around," and public drinking, relative to the control group (Exhibit 3.5). They also reported that they had less difficulty getting police to respond to their calls. The proportion of families who expressed satisfaction with their current neighborhoods was much higher in both treatment groups than in the control group. On every one of these measures, the proportion of the experimental group reporting improved conditions was about 10 percentage points larger among the Section 8 group.

Perhaps most notable from the perspective of the families themselves is the fact that they were successful in achieving the goal that loomed largest in their motivation to move out of their old neighborhoods: improvements in safety. The adults reported substantial increases in their perception of safety in and around their homes and large reductions in the likelihood of observing or being victims of crime (Exhibit 3.5). These gains were greater for the experimental group families, but they were still substantial for those in the Section 8 group who moved with program vouchers.

MTO substantially improved the quality of housing occupied by the families who moved with program vouchers. A markedly higher proportion of adults voiced satisfaction with their housing at the time of the interim evaluation, compared to the control group—21 percent more for the experimental group adults and 12 percent more for the Section 8 group adults (Exhibit 3.5). MTO also increased somewhat the proportion of families receiving housing subsidies, while substantially reducing the fraction living in public housing (Exhibit 3.4). However, some of this effect was probably due to the impacts of HOPE VI and Vacancy Consolidation on a number of the developments where the control group lived during the period since random assignment.

In sum, the MTO demonstration succeeded in substantially improving the housing and residential environments of the families who moved with program vouchers on a wide range of measures. While these improvements were greater for the experimental group, who were constrained to move to low-poverty areas at least initially, the Section 8 group also experienced sizeable improvements in housing and neighborhood environment relative to the control group.

Improvements in adult and child health

Urban residents of high-poverty neighborhoods are likely to have high incidences of health problems. The high rates of activity limitations, asthma, high blood pressure, obesity, psychological distress, depression, and anxiety observed in the control group at the time of the interim evaluation bear out this expectation (Exhibit 4.2).

Estimation of MTO's impacts on these outcomes and on measures of smoking, drinking, and general physical health revealed one significant impact on adults' physical health: a large reduction in the incidence of obesity among both experimental and Section 8 families (Exhibit 4.2). There were also improvements in mental health among adults in the experimental group families: a reduction in psychological distress, a reduction in depression (statistically significant on one measure of depression though not on the other), and an increase in feelings of calm and peacefulness. There were no significant mental health improvements among those in the Section 8 group and there were no significant effects on the other adult health measures in the interim evaluation among those in either the experimental or Section 8 group.

Among children, the significant effects of MTO on health were confined to mental health measures—a moderately large reduction in psychological distress for girls in the experimental group; a substantial decrease in the incidence of depression among girls in the Section 8 group; and very large reductions in the incidence of generalized anxiety disorder among girls in both treatment groups (Exhibit 4.5). These findings of significant impacts on measures of mental health, for both adults and children, are consistent with the improvements in the families' perceptions of personal safety discussed above.

Mixed effects on youth delinquency and risky behavior

At baseline, when the children who were ages 15 to 19 at the time of the interim evaluation were ages 8 to 15, significant proportions had already exhibited problem behavior or been suspended from school. By the time of the interim evaluation, among youth in this age range, 24 percent of the girls and 39 percent of the boys in the control group had been arrested—half of them for violent crimes (Exhibit 5.3).

In the interim evaluation, survey data from parents and from the youth themselves were used to measure a number of delinquent, risky, and problem behaviors. The youth were also asked whether they had ever been arrested. In addition, administrative data from the criminal justice system were used to measure the number of arrests for specific crimes.

For both boys and girls in the experimental and Section 8 groups, there were no significant effects on either an index of 15 problem behaviors reported by parents or on a narrower index of self-reported

delinquent behaviors related to criminal behavior (Exhibit 5.2). However, there were significant increases in self-reported behavior problems among boys ages 12 to 19, in both treatment groups.

Participation in MTO resulted in a large reduction in the proportion of girls ages 15 to 19 in the Section 8 group who had ever been arrested for violent crimes (Exhibit 5.3). This effect contributed to a significant reduction in the frequency of arrests for violent crimes for all youth (Exhibit 5.4). There were no effects on the incidence of arrests for other crimes for girls. The only effects on arrests for boys were very substantial increases in the proportion ever arrested and the frequency of arrests for property crimes in the experimental group (Exhibits 5.3 and 5.4). This increase in arrests might reflect more stringent policing in new locations, rather than (or in addition to) more criminal behavior.

For girls ages 15 to 19 in the experimental group, but not for those in the Section 8 group, there were reductions in risky behavior, concentrated in marijuana use and smoking. Among boys in this age range in both treatment groups there were significant increases in smoking, but not in other types of risky behavior (Exhibit 5.5).

This pattern of gender differences in effects—positive for girls and negative for boys—suggests that boys and girls react differently to the disruption of moving and the challenge of integrating into a new environment. However, the available results do not allow us to say specifically why this is the case. To the extent that this difference reflects a response to the transition from a high-poverty environment to a lower poverty environment, one might expect this pattern to be different in the longer term for youths who have completed that transition or who have grown up in the new environment.

Evidence about Longer Term Effects of MTO

In the hypotheses generated about MTO effects, it was expected that impacts in several important domains would take longer than 4 to 7 years to become evident. These domains were education, employment, and economic self-sufficiency (an end to public assistance receipt). The Gautreaux research suggested that children moving to schools with very different characteristics might show achievement losses in the short run even though in the longer run they would catch up with their new schoolmates. Evidence is lacking about the time path of neighborhood effects on changes in economic self-sufficiency due to the absence of prior long-term research.

It is important to recognize that the control group—the benchmark against which we measure the effects of MTO—has not been static in the period since random assignment. For example, between 1995 and 2001 the employment rate among sample adults more than doubled, from 24 to 51 percent, and welfare receipt rates declined by more than half. Many control families moved out of public housing; as a result, at the time of the interim evaluation the average poverty rate in the neighborhoods where controls lived was 15 percentage points lower than it had been at baseline. In part, these improvements in the lives of controls represent natural turnover in welfare caseloads and the labor market. In addition, powerful external forces were at work during this period. The welfare system changes implemented in the mid-1990s (the shift from Aids to Families with Dependent Children (AFDC) to Temporary Assistances for Needy Families (TANF) and the advent of time limits) had substantial effects on nearly all low-income families. And the sustained economic boom of the 1990s offered increased opportunities to MTO families regardless of their group assignment. By

improving conditions for control group members, these powerful external forces could make it less likely that MTO would show significant impacts on employment and earnings relative to the control group.

Small impacts on children's education

For the interim evaluation, education research focused on children ages 5 to 19 at the time the data were collected. We interviewed parents about the school-related attitudes, behaviors, and performance of all children in the sample. We interviewed children ages 8 to 19 about their own views and experiences in school. We also administered four different achievement tests from the Woodcock-Johnson Battery-Revised to sample children and collected data from published sources about the schools the children attended over the period since random assignment.

MTO had significant but small effects on the characteristics of the schools sample children attended (Exhibit 6.3). Experimental group children attended schools with somewhat lower percentages of poor and minority children and of students with limited English proficiency than they would have in the absence of the demonstration. The schools attended by experimental group children were ranked marginally higher on state exams than the schools attended by control students, but were less likely to be magnet schools. All of these differences were relatively small. For example, the schools attended by those who moved with program vouchers were only at about the 25th percentile on state exams, as compared with the 17th percentile for the schools attended by controls at the time of the interim evaluation. MTO had no significant effect on the teacher-pupil ratio.

Among the children in the Section 8 group, participation in MTO reduced the schools' percentages of minority and poor (exhibit 6.3). There were no other significant effects on the schools attended by children in the Section 8 group at the time of the interim evaluation, although the average ranking of schools attended by children in that group over the course of the followup period was slightly higher than that of the schools attended by control children. All of these effects were smaller than those on the schools of experimental group children.

These relatively modest impacts on school characteristics reflect the fact that, at the time of the interim evaluation, nearly three quarters of the children in families in the experimental group who leased up with program vouchers were attending schools in the same school district they were in at baseline. This may be because, as suggested in the MTO qualitative analysis, some children did not change schools when their families moved or because the families did not move very far. In particular, many families remained within the same big city school districts where they lived at baseline.

Not surprisingly, given the small impact on school characteristics, the demonstration had virtually no significant effects on any of the measures of educational performance analyzed, for either the experimental group or the Section 8 group (Exhibits 6.5–6.7). Of the 58 outcomes analyzed, there were significant impacts on only two: the Woodcock-Johnson calculation score for all children in the Section 8 group and the broad math score for children ages 8 to 11in the Section 8 group.

Impacts on economic well-being

Data on employment, earnings, household income, and public assistance were obtained from both administrative records and the interim survey. Administrative data provided a continuous history of employment, earnings, and AFDC/TANF and food stamp benefits from random assignment through the time of the interim evaluation. Survey data provided measures of employment, earnings, unearned income, receipt of SSI and Medicaid, and food security in 2001.

No effects on employment or earnings

At baseline, only about a quarter of all MTO adults were working. This proportion more than doubled over the followup period for both treatment and control group members. But the only statistically significant treatment-control difference in any of the measures of adult employment or earnings analyzed was a slight reduction in the employment rate in the first two years after random assignment among adults in the experimental group (Exhibits 7.3–7.4).

Although there were no statistically significant impacts on the employment or earnings of youth, either overall or by gender (Exhibit 7.4), there was a large reduction in the proportion of female youth working and not in school, with a concomitant (though not statistically significant) increase in the proportion attending school (Exhibit D7.1). Consistent with these findings, girls in the treatment groups perceived their chances of going to college and getting a well paying, stable job as much higher than their control counterparts (Exhibit E6.4). These findings are also consistent with the positive effects on girls' mental health and criminal behavior reported above.

No impacts on receipt of public assistance

At the time they were randomly assigned, the MTO adult sample members had very high rates of public assistance receipt and average incomes well below the poverty line. About three-fourths of the sample members were receiving AFDC at baseline, and four out of five were receiving food stamps (Exhibit 8.2). Further, nearly all sample adults (94 percent) had received AFDC at some point.

Average income was about $9,300 at baseline, well below the poverty line for a family of three. Median income was still lower, approximately $7,800. These results show that sample members were quite disadvantaged when they entered the MTO demonstration.

Four to seven years later, the AFDC/TANF receipt rates had fallen by half across the entire sample. Less than 30 percent were receiving welfare benefits, although 46 percent were still receiving food stamps. Forty-five percent of the sample adults were working and off TANF in 2001. These figures did not differ among the randomly assigned groups. The only significant impacts of MTO on receipt of transfer payments were small increases in the receipt and amount of AFDC/TANF and/or food stamp benefits during portions of the followup period for each group (exhibits 8.4-8.7).

At the time of the interim evaluation survey, average household income was about $15,500. Two-thirds of the sample had incomes below the poverty level, and half of these households had incomes below 50 percent of the poverty level. Some 11 percent of the sample households had experienced food insecurity with hunger in the previous 6 months. Participation in MTO did not affect incomes or

food security, as there were no significant differences in these outcome measures between either of the treatment groups and the control group (Exhibit 8.8).

Hypotheses about long-term effects

There are a number of reasons to expect that observing the MTO population over a longer period of time may reveal significant program impacts in domains with no midterm effects. For example, the Gautreaux Program research suggested that children would need a prolonged period in better schools before making up prior deficits and moving ahead. Rosenbaum (1991) found that 1 to 6 years after their families moved to the suburbs many children "were still struggling to catch up, and it was not clear if they would succeed." But 7 years later, he found substantial, statistically significant impacts on eight of nine education- and employment-related outcomes for the same children.

There are strong theoretical reasons why it may take many years for the full effects of neighborhood to manifest themselves. Developmental outcomes such as educational performance almost certainly reflect the cumulative experience of the child from an early age. Children who spend their first ten years in an environment that does not facilitate educational achievement may never fully overcome that disadvantage, even if they then move to an environment that supports educational achievement. On the other hand, if a safer neighborhood and exposure to more educated adults affects long-term educational outcomes, we may yet see some educational effects.

In the interim evaluation, the youth sample is composed of children who moved out of public housing at ages 5 to 15. In the final evaluation, the youth sample will have left public housing at ages birth to 10. Those youth will have spent a much larger proportion of their formative years outside the concentrated poverty of public housing. Therefore, they may show much greater gains in educational achievement and other developmental outcomes.

It is also true that the move from high-poverty areas to lower poverty neighborhoods is likely to be disruptive and require some adjustment period, during which positive behavioral effects may not appear and, in fact, negative effects may be observed. If these effects indicate that the first 4 to 7 years after random assignment has been an adjustment period for these youth, we may observe different impacts in the longer term, once that transition is complete.

We cannot, of course, predict the impacts that will be observed 5 years after our data were collected. We can, however, examine the interim findings for evidence that impacts are related to time since random assignment. The most direct evidence on this question is provided by the time path of impacts on those outcomes for which we have longitudinal data over the entire followup period—the employment, earnings, and public assistance outcomes measured with administrative data. Examining the impacts in years 1 to 2 and years 3 to 4 after random assignment for each of the main outcomes measured with these data (Exhibit G.6), we found at least modest evidence of increasingly favorable effects over time.

Major Conclusions

Assessment of results

A summary assessment of the findings presented in this report and the impact estimates described above suggests that:

- The findings do provide convincing evidence that MTO had real effects on the lives of participating families in the domain of housing conditions and assistance and on the characteristics of the schools attended by their children;

- There is no convincing evidence of effects on educational performance; employment and earnings; or household income, food security, and self-sufficiency.

- The statistically significant impact estimates are uniformly large enough to be relevant for policy. Many are, in fact, quite large.

- Given the size of the interim evaluation sample and the leaseup rates in the two treatment groups, the impact estimates are sufficiently imprecise that some true impacts that are large enough to be relevant for policy may not have been detected as statistically significant.

- Although MTO induced substantial differences in the proportion of time spent in low-poverty areas by the three assignment groups, it was not a pure test of the effects of living in low-poverty areas compared to living in public housing in high-poverty areas, even for the families in the experimental group who moved with program vouchers. Extrapolating the effect of living continuously in low-poverty areas might show them to be more substantial than those observed in the demonstration. However, our ability to measure those effects quantitatively is limited.

- There is at least modest evidence that the impacts of the demonstration are becoming more favorable over time, at least for public assistance, which was the only outcome for which we were able to estimates effects over time. If this holds for other outcomes, we might expect more and larger impacts in the final evaluation, 10 years after random assignment.

Policy Implications of the Interim Evaluation Results

The interim findings allow us to address three fundamental questions related to policy with respect to low-income families in public housing:

- What social benefits and costs accrue as a result of moving low-income families out of public housing projects in high-poverty areas into private housing, and how do those benefits differ between policies that restrict such moves to low-poverty areas and those that do not?

- How effective is policy likely to be in changing the environment of low-income families?

- What do the interim results have to say about alternative approaches to improving the lives of low-income families?

The social benefits and costs of moving low-income families out of public housing in distressed neighborhoods into private housing

Although we have not attempted to conduct a formal cost-benefit analysis, the interim evaluation results provide relatively clear evidence of the main social benefits and costs of MTO. From the families' perspectives, the principal benefit of the move was a substantial improvement in housing and neighborhood conditions. Families who moved with program vouchers largely achieved the single objective that loomed largest for them at baseline: living in a home and neighborhood where they and their children could feel and be safe from crime and violence. On a list of observable characteristics, their homes and neighborhoods were substantially more desirable than those where control group members lived. These benefits accrued to families in both the experimental group and the Section 8 group, although the improvements tended to be roughly twice as large for experimental group families, who were required to move to low-poverty areas, at least initially.

Perhaps not surprisingly, these improvements in living environment led to significant gains in mental health among adults in the experimental group. The levels of psychological distress and depression were substantially reduced in this group. In addition, adults in both the experimental and Section 8 groups experienced substantial reductions in obesity for reasons we do not yet understand.

Among the children in these families, girls appear to have benefited from the move in several ways. They experienced improved psychological well-being, reporting lower rates of psychological distress, depression, and generalized anxiety disorder, and improved perceptions of their likelihood of going to college and getting a well paid, stable job as an adult. These girls' behaviors changed as well, with a smaller proportion working instead of attending school. They were less likely to engage in risky behavior or to use marijuana. Finally, both these girls and society as a whole benefited from a reduced number of arrests for violent crimes.

The principal social costs that must be offset against these benefits are the costs of the MTO mobility counseling, any increased costs due to the greater likelihood of receiving housing assistance among those who leased up with program vouchers, and an increase in the rate of behavior problems, smoking, and arrests for property crimes among boys ages 15 to 19.

We cannot place values on these social costs and benefits. Policymakers will have to decide whether the gains of this kind of policy outweigh the costs. But the interim evaluation has demonstrated that there are substantial social benefits as well as some costs associated with facilitating the movement of public housing residents who desire to move to low-poverty areas.

How effective is policy likely to be in changing the environment of low-income families?

One of the clearest messages of the interim evaluation results is that policy can influence, but it cannot dictate, the residential location of low-income families. As noted above, the demonstration reduced the proportion of the followup period that families who moved with program vouchers spent in areas of concentrated poverty by 47 percentage points in the experimental group and 35 percentage

points in the Section 8 group (exhibit 2.9). It increased the proportion of time spent in areas with poverty rates below 20 percent by 53 percentage points among families in the experimental group.

Another lesson of the MTO demonstration is that the poverty rate, while important, may be an overly simplistic way to characterize neighborhoods. Residential environments are multidimensional, and no single measure will capture all the attributes that are important to the life chances of low-income families. Thus, for example, the fact that a majority of the program movers in the experimental group moved to areas with low, but rising, poverty rates may have had an important effect on their subsequent outcomes. Similarly, even in the experimental group, a large proportion of those who moved with program vouchers stayed within the city rather than moving to suburban areas. This meant that their children attended schools in the same school systems as control group children, which almost certainly limited the improvement in school quality they experienced as compared with (for example) a move to the suburbs. Moreover, the low-income areas to which families in the experimental group moved were still heavily minority. To the extent that racial integration or diversity has a positive influence on any of the outcomes analyzed here, that influence was largely absent in this demonstration. These considerations suggest that policy makers seeking to improve the environment of poor families may want to consider other characterizations of neighborhood than that provided by the poverty rate alone.

When thinking about the implications of these results for policy, it is also important to recognize that all of the impacts presented here are measured relative to a control group receiving some mix of existing housing subsidies. Some control families eventually received regular Section 8 vouchers, some continued to benefit from public housing subsidies, and some left housing assistance altogether. Indeed, some control group members were unable to remain in public housing because their units were demolished under HOPE VI or other revitalization efforts. We did not attempt to eliminate the influence of these changes in control circumstances, including the receipt of Section 8 vouchers, from the estimates. Rather, we view the results as measures of the incremental effects of offering vouchers, with or without locational restrictions, to residents of public housing in areas of concentrated poverty during the particular period encompassed by the study. These findings answer this question: How much better off are the recipients of the demonstration vouchers than families who started out in the same situation and who received no help from the demonstration? This means that the estimates from this study are not applicable to all types of policy. For example, for a policy that replaces public housing with vouchers, the appropriate control benchmark would probably be continued residence in public housing. That is not what was tested here—indeed, it probably cannot be tested—and the results of the present test probably understate the effects that would be expected from such a policy.

What do the interim results have to say about alternative approaches to improving the lives of low-income families?

The most fundamental question addressed by MTO is this: To what extent are the problems encountered by public housing residents the result of the high concentration of poor families in those developments and the surrounding neighborhoods, and to what extent are they caused by attributes of the families themselves? To the extent that these problems are environmental, the appropriate policy response is to foster dispersion of these families to more positive environments. To the extent that these problems reflect family characteristics—e.g., lack of education, limited work experience, or membership in a group that faces discrimination—the appropriate policy response is to address these characteristics directly.