

Strategies To Reduce Economic
Inequalities In Health:
A Policy Perspective

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1. INTRODUCTION

Social and economic inequalities in morbidity, mortality and disability have been reported consistently across countries and over time. These associations have been reported with particular precision over the last several decades. The rapid growth of economic inequality in the US which has occurred over the last thirty years has spurred a small industry in examining socioeconomic gradients in health and well-being and a growing concern that economic inequality may exert a general, contextual effect on health at a national level. While there have been many excellent reviews in the past several years on this topic (some of them resulting from Russell Sage Inequality projects) there is much less work on the impact that social and economic policies themselves may have on health. Ultimately, interventions to reduce social disparities in health rest on our capacity to design effective policies and interventions that 1) either reduce social and economic inequality or 2) blunt the health impact of such inequalities through health or “safety net” types of programs aimed at the most disadvantaged segments of the US population or 3) through population-based policies that are particularly effective at reducing risks in lower socioeconomic groups.

The focus on the impact of social and economic policies on health outcomes is important both because such analyses shed light on what we can do to improve health as well as because they help us sort out questions of etiologic significance. One of the major issues in assessing the effect of SES or other indicators such as income or education on health outcomes is understanding the direction of causality. Even in long-term longitudinal studies, it is difficult to be assured that illness and disability have not influenced the course of status attainment, earnings or even educational attainment (although we most often consider educational attainment to be least likely to be influenced by disease processes). Furthermore, even if disease or disability does not influence socioeconomic status, it is difficult to rule out the possibility that prior conditions (to both SES and disease states) such as genetic conditions, parental exposures, “innate” intellectual abilities set the course for both educational and economic attainment as well as health and functioning. Evaluation of the health effects of policies which are either experimental or quasi-experimental in design provides a unique opportunity to assess health

effects net of confounders. Of course, such analyses rest on strong experimental approaches, methods not always possible to use in policy analysis. Nonetheless, policy-relevant work provides a lens through which we may view the influences of socioeconomic conditions on health and identify interventions which may improve health. Our aim in this review is to identify the work to date in this area so that we could undertake new analyses merging policy and health outcome data to advance our understanding of the potential links between policies and health.

Strategic “Entry” Points: Upstream and downstream elements

Health is likely to be influenced by income, income inequality and socioeconomic status through multiple pathways. In fact, income inequality is an example of what Link and Phelan (Link and Phelan 1996) have called a fundamental or root social cause because it influences many resources “that strongly influence people’s ability to avoid risks and to minimize the consequences of disease once it occurs” (Link & Phelan 1996, p. 472). As such there are many viable “entry points” for interventions. In Mackenbach and Bakker’s “Reducing Inequalities in Health” (Mackenbach and Bakker 2002), they describe multiple entry points for intervention including reducing inequalities in power, prestige, income and wealth related to different socioeconomic positions, reducing the effect of poor health on socioeconomic position, and reducing the consequences of illness through health care among those in lower socioeconomic positions.

In our review, we initially identified a large set of social and economic policies which might have been evaluated in terms of health benefits, broadly defined. We searched for policies linked to standard health outcomes in public health such as morbidity, mortality, functional status or health behaviors with known links to health outcomes. After a lengthy search of a large number of policies, we identified three areas where there was a significant amount of research: housing policy, welfare reform in relation to immigration, and the impact of Medicare and Medicaid on health. While these were the areas in which most research on health outcomes was done, it is still surprising how little work there is on objective health outcomes that have the greatest weight to epidemiologists and others in the fields of public health and medicine. In some ways, this is discouraging. In other ways, it reflects a field that

has not often bridged policy and health sciences sufficiently to reflect “state of the art” research in both areas. For us, given the importance of the topic, it signifies a critical interdisciplinary area which needs more research.

2. HOUSING POLICY AND HEALTH

Housing mobility policy and subsequent related mobility-related policies may play an important role in reducing health disparities and improving health in the population. Although housing has long been hypothesized to affect health, documenting this relationship has been challenging. In several recent reviews, some argued that the relationship between housing and health is clearly established (Krieger and Higgins 2002), while others found that there is a lack of evidence linking housing and health (Thomson, Petticrew and Morrison 2001). The Centers for Disease Control (CDC) Task Force on Community Preventive Services recently published a series of literature reviews of policy interventions including housing that may help improve community health (Anderson, Shinn, Charles et al. 2002). Housing voucher (i.e. mobility) policies were reportedly linked to reductions in crime victimization. Our review differs from the CDC study in contextualizing the policy research in other studies of housing and health, and in examining a broader range of both policies and outcomes. We first sought to identify those federal housing policies that appear to have the greatest potential for improving the health of low-income individuals, and thus, to reduce health disparities. We identified three such federal housing policies (i.e. homeownership promotion, anti-housing discrimination, and housing mobility) but then focus on housing mobility, as it appears to be the only housing policy that has been empirically evaluated for its effects on health.

Federal housing policy

The scope of current federal housing policy is very broad, including support for homeownership, enforcing fair housing (i.e. anti-discrimination) laws, and ensuring affordable rental housing. Some of these present policies intend to correct or mitigate the effect of past policies that created or reinforced problems such as discrimination in the housing and mortgage

markets, and segregated residential patterns. Both policies and market forces have been found to contribute to economic and racial segregation in the U.S. (Schill and Wachter 1995; Altshuler, Morrill, Wolman et al. 1999).

In monetary terms, the most important component of U.S. federal housing policy is the mortgage and real estate tax deductions allowed by the federal tax code, whose value has been estimated at about \$52 billion per year (Bourassa and Grigsby 2000). This amount is approximately 60% larger than the total budget for the Department of Housing and Urban Development (HUD) in fiscal year (FY) 2003 (\$31.5 billion) (U.S. Department of Housing and Urban Development 2002).

There are several pathways through which homeownership may contribute to improve health. First, homeownership is the main source of wealth for Americans. In 1995, median net wealth for U.S. homeowner households was about \$78,000 but it was only about \$2,000 for renter households (U.S. Census Bureau and Economics and Statistics Administration 2001). Potentially, promoting homeownership, and thus wealth accumulation, may be an effective way to enhance health. Although studies of the association between wealth, including homeownership, and health are relatively scarce due to lack of data on wealth accumulation, the available evidence suggests a positive association between wealth and health (Deaton 2002), and between homeownership and health (Dunn 2000; Kuh, Hardy, Langenberg et al. 2002). Some studies found that children living in houses their parents *owned* experienced lower rates of behavioral, emotional and cognitive problems, and recommended promoting home ownership as a strategy for reducing such problems (Boyle 2002; Haurin, Parcel and Haurin 2002). Unfortunately, to our knowledge, no studies exist on the impact of ownership policies and health.

Enforcing fair housing (i.e. anti-discrimination) laws is another key component of housing policy. Despite the enactment of fair housing as a national objective in the 1968 Housing Act, discrimination in housing, mortgage, and mortgage insurance markets against African American and Hispanic households is a persistent problem (Yinger 1995; Goering and Wienk 1996; Yinger 1996; Squires 1997; U.S.

Department of Housing and Urban Development and Office of Policy Development and Research 2002). Several recent studies have documented that minorities are more likely to resort to non-conventional financial institutions and be subject to sub-prime lending (Fishbein and Bunce 2000; U.S. Department of Housing and Urban Development 2000). In addition to enforcing federal fair housing legislation, HUD supports state and local fair housing efforts through the Fair Housing Assistance program (\$ 25.7 million in FY 2003) and the Fair Housing Initiatives program (\$20.3 million in FY 2003).

Discrimination in housing and anti-discrimination policy may also have the potential to affect health outcomes through at least two mechanisms. First, discrimination is an important factor in limiting homeownership among minorities (Yinger 1995). Therefore, anti-discrimination policy could enhance minority homeownership and wealth accumulation and, as a result, minority health. Additionally, health research suggests that perceptions of discrimination may have detrimental effects on health (e.g. cardiovascular health) (Williams and Neighbors 2001; McKenzie 2003). However, to our knowledge, anti-discrimination policy has not been evaluated for its effects on health.

In the United States, rental assistance is the main form of governmental housing assistance for low-income households (U.S. Department of Housing and Urban Development 2002). Additionally, rental assistance, in the form of housing vouchers, is increasingly being conceived as a tool for deconcentrating poverty (Sard 2000). As a targeted policy addressing the housing needs of (very) low-income families, the Section 8 program has potential for mitigating social and health inequalities.

Housing mobility policy

Besides providing income assistance to low-income households, by design, the Section 8 program may help reduce poverty concentration as it facilitates housing mobility. Therefore, the Section 8 program may benefit participants both through an effect on household income, and through an effect on neighborhood quality. Both effects are likely to have a beneficial impact on health outcomes. We evaluated the effects of housing policies on health by searching through eight medical, social science,

policy, and housing databases for articles from 1974 through April 2002. To be included in our review, studies must have (1) empirically evaluated a US housing policy, (2) included at least one relevant health outcome, and (3) a comparison group. Relevant health outcomes were operationalized as (a) direct health outcomes (individually measured mental or physical health, including experience of violence), (b) hazardous health behaviors (substance abuse, teen alcohol use), and (c) medical care. Although several studies included indicators that could be proxies of health (e.g. number of school absences, unsafe housing or neighborhood conditions), we have not included such indirect outcomes here. We reviewed each of the studies and ranked them by the strength of their study designs using the guidelines developed at the CDC by Briss and colleagues (Briss, Fielding, Hopkins et al. 2000), in order to assess the strength of the body of evidence of the efficacy of housing mobility policy on health. For a fuller review of this evidence, see (Acevedo-Garcia, Osypuk, Werbel et al. 2002). Our search yielded 479 citations, which were reviewed for criteria relevance. Ninety-four articles were kept for closer inspection, of which 13 articles were qualified for inclusion in our review. These 13 articles discussed 5 residential mobility policies: the Gautreaux program, the Yonkers Scattered Site Public Housing, the federal Section 8 program, and the Cincinnati Special Mobility Program, and the federal Moving to Opportunity experiment.

Gautreaux program

Over the past 25 years several residential mobility policies have been enacted to assist minority inner-city residents to move to low-poverty neighborhoods. Most of these policies have resulted from racial discrimination litigation. Researchers could evaluate the Gautreaux policy as a quasi or natural experiment because in practice, participants (clients) were assigned to their neighborhood in a quasi-random manner (Rosenbaum 1995). Regardless of client locational preference, housing agents offered the units to clients according to their position on the waiting list, offering units in either a central city low-income neighborhood, or a white, middle-income neighborhood. Clients could in theory refuse an offer, but few did so in practice since they were unlikely to get another chance.

The U.S. Department of Housing and Urban Development (HUD) evaluated the Gautreaux program in 1979, (Peroff, Davis, Jones et al. 1979). Rosenbaum and colleagues evaluated the effects of the Gautreaux program with three surveys. Health data are limited to violent victimization and health care access and satisfaction.

The 1979 HUD evaluation of Gautreaux reported more difficult access to medical care for participants compared with eligible non-participants or Section 8, as well as compared to access before the move (Peroff, Davis, Jones et al. 1979). However, the HUD evaluation is subject to selection bias, since those selecting into the Gautreaux program are likely to be different from eligible non-participants and Section 8 participants for reasons relating to their participation as well as reasons affecting their health. Similarly, several aspects of the evaluations threaten the validity of the study results including substantial loss to follow-up, and unclear random assignment, and lack of a control group.

Section 8

The Section 8 Federal Housing program grants qualified low-income participants for a rental subsidy for use in private apartment units. The Section 8 Federal Housing program has been evaluated over the past 25 years in many comprehensive studies, including several federally funded policy experiments (Peroff, Davis, Jones et al. 1979; Kennedy and Leger 1990). While most evaluations were unrelated to health, Meyers found that children in families on the Section 8 waiting list had decreased growth (weight for age, weight for height, height for age) compared with children in families receiving Section 8 vouchers, indicating undernutrition (Meyers, Frank, Roos et al. 1995). However, this study is subject to many validity threats given its convenience sampling method and cross-sectional design.

Cincinnati Special Mobility Program

Many housing mobility policies have been initiated by racial discrimination litigation, including this policy in Cincinnati, Ohio. As a result of a consent decree that settled a litigation case out of court against the Cincinnati Metropolitan Housing Authority et al., the Cincinnati

Special Mobility Program (SMP) yearly allocates 40 Section 8 certificates, and assists eligible families to find housing in areas of Hamilton County defined as census tracts with less than 40% black residents. Half of the eligible clients in any year must be residents of units operated by the Cincinnati Metro Housing Authority (Fischer 1991). Fischer found that moving out of concentrated public housing was associated with less interpersonal violence and health care benefit receipt.

Yonkers Scattered-Site Public Housing

In addition to tenant mobility programs, Scattered Site Public Housing (SSPH) programs have also been implemented as a result of court decrees to racially desegregate concentrated poverty areas in central cities. Often tenant-based and unit-based programs (of which SSPH is one) are both part of the same court-ordered remedy. In 1986 the District Court ordered Yonkers, NY to racially desegregate its public housing. By 1994, minority, very low-income families and individuals had moved into the 200 new units across seven different sites in low-poverty, predominantly white areas of the city of Yonkers. Tenants for SSPH units were selected by lottery. Unfortunately, there were too few lottery losers to create a large enough group that could have served as a control group. Therefore, to estimate the effect of the policy on participating individuals, the research team created a comparison group through a snowball sampling method limiting the strength of the approach. However, results suggest the SSPH policy in Yonkers may have benefited the mental health and health behaviors of movers, as evidenced by 28% lower depression prevalence, 50% lower report of marijuana use, and more than 86% lower report of problem drinking among movers compared with “stayers” (Briggs and Yonkers Family and Community Project 1997).

Moving to Opportunity

Although the Gautreaux Program reported substantial beneficial effects for its suburban movers, questions remain as to the validity of the inferences derived from the non-experimental policy design. The federal government has since sought to replicate Gautreaux’s effects by designing and implementing a

randomized housing mobility policy experiment in five U.S. metropolitan areas with the Moving to Opportunity (MTO) program. Sponsored by the U.S. Department of Housing and Urban Development and begun in 1994, the experiment assigns selected participants from central-city public housing to one of three randomized groups: (1) treatment group – received offer of a Section 8 housing voucher that can only be redeemed in a low-poverty neighborhood, as well as housing counseling; (2) section 8 group – received offer of a geographically unrestricted Section 8 housing voucher; (3) in-place control Group – did not receive any voucher, but remained eligible for public housing residence.

Two of the MTO sites have reported mental and physical health outcomes (Boston, New York), three have reported violent crime victimization (Boston, New York, Chicago), two have reported medical care outcomes (Los Angeles, Boston), and one site has reported health-behavior outcomes (New York) (Hanratty, McLanahan and Pettit 1998; Katz, Kling and Liebman 2001; Rosenbaum and Harris 2001; Leventhal and Brooks-Gunn forthcoming; Leventhal and Brooks-Gunn In Press).

Overall, as a result of the MTO policy, children in families who were offered a low-poverty housing voucher have experienced fewer behavior problems, fewer injuries, accidents, or poisonings, and boys are less depressed/anxious and less dependent compared with in-place controls. Treatment parents have reported fewer distress/anxiety symptoms, better self-rated health, and feeling more calm and peaceful compared with controls (Katz, Kling and Liebman 2001; Leventhal and Brooks-Gunn forthcoming; Leventhal and Brooks-Gunn In Press) Those in the intervention were also more likely to report adequate medical care (Hanratty, McLanahan and Pettit 1998). None of the three sites that measured experience of violent crime found significant results between experimental and control groups and mixed findings were reported with regard to health behavior. The New York MTO study found significant but conflicting effects of the treatment on adolescent problem health behaviors. Unexpectedly, adolescent girls in the experimental group were significantly *more* likely to have used alcohol in the past year compared with in-place controls (20% vs. 4%). Yet, adolescent boys reported substantially fewer

peers used cigarettes in the experimental group compared with controls (19% vs. 38%) (Leventhal and Brooks-Gunn forthcoming).

The results from the Boston MTO site are compelling. The study's low (4%) attrition, a randomized design, combined with the evidence that all significant health indicators fall in one direction signal that the policy may improve health for movers. And although the New York study is somewhat weaker (because of their 31% attrition), the results point in the same direction. The results of Boston and New York together suggest that this policy may yield health benefits.

Overall, the evidence suggests that both tenant-based and unit-based housing mobility policies may contribute to improving child, adolescent, and adult health and health behaviors. However, this preliminary evidence comes from a small number of studies, many of which have methodological limitations associated with the lack of an experimental or quasi-experimental design. Furthermore, none of the studies reviewed above explicitly tested the mechanisms through which housing mobility policies may impact health, although several housing mobility investigators have speculated about possible pathways.

3. THE IMPACT OF WELFARE REFORM ON IMMIGRANT HEALTH: ACCESS TO MEDICAID

The 1996 federal Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA), also known as the Welfare Reform Act, substantially modified the position of immigrants in U.S. society in addition to constituting a significant overhaul of the American welfare state. Policies which are relevant to immigration include *immigration policies*, which determine the number of immigrants that can come legally into the United States and the characteristics they should have, and *immigrant policies*, which facilitate (or hamper) the integration of immigrants after they have arrived in the U.S. The immigrant provisions of welfare reform have been characterized as "a watershed in the related domains of

immigrant integration and immigrant policy, as well as the federalism issues the new provisions raise."

(Fix and Passel 2002a: 1)

The social and policy concerns surrounding the immigrant provisions of the welfare act include 1) a substantial increase in immigration to the United States, notably from Latin America and Asia, since 1970 (Schmidley and U.S. Census Bureau 2001); 2) rising concern that these new immigrants were more likely to be poor and less likely to successfully assimilate into U.S. society than previous immigrant waves (Borjas 1999; Camarota 1999; Borjas 2000); and 3) a perception that immigrants used welfare programs at higher rates than the native born waves (Borjas 1999; Camarota 1999; Borjas 2000).

Welfare reform legislators tried to address all these concerns, which resulted in unprecedented changes to U.S. immigrant policy in five major areas. First, welfare reform redefined "membership" in U.S. society by denying for the first time public benefits to *legal immigrants*. Second, it shifted responsibility for (and costs of) immigrant policy from the federal government to state/local governments and to immigrant families. Third, it weakened the "safety net" for immigrants. Fourth, it altered incentives for accessing health/social services, family reunification, and naturalization among immigrants. Fifth, it created an overlap between immigrant and immigration policy tools and goals, i.e. it was assumed that welfare benefits constituted an incentive for immigrating into the United States and that, therefore, restricting them would help reduce the size of the migratory flow (Acevedo-Garcia, Omata, Ringel et al. 1997; Fix and Passel 2002a).

It has been hypothesized that these far reaching changes in immigrant policy may have negatively affected the socioeconomic wellbeing of U.S. immigrants. There is already evidence that participation in cash (SSI, TANF) and non-cash (Food Stamps, Medicaid) federal means-tested programs has declined for both immigrants and non-immigrants after welfare reform, and that immigrants' participation has declined more sharply than non-immigrants' participation (Borjas 2000; Fix and Passel 2002a). This evidence suggests that welfare reform has attained

some of its goals, i.e. a reduction in welfare use and restricting immigrants' access to programs. However, the extent to which these changes have been translated into worsening health outcomes is less clear.

In 2000, the U.S. foreign-born population was 28.4 million or 10.4% of the total population--in contrast, the respective figures in 1970 were roughly 9.6 million and 5% (Schmidley and U.S. Census Bureau 2001). It is estimated that in the mid- to late 1990s, approximately 1.1 million immigrants entered the U.S. annually (Borjas 1999), including about 800,000 legal immigrants, 100,000 refugees and asylees, and 200,000 illegal immigrants. Under welfare reform, naturalized citizens are treated as citizens by birth, and refugees and asylees are generally exempted from the immigrant provisions. Illegal immigrants were ineligible for federal benefits prior to 1996. Therefore, the legal immigrant population (roughly 9 million plus additions of 800,000/year) is the main target of welfare reform.

Welfare reform and immigrant policy

The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA)

The Personal Responsibility Work Opportunity Reconciliation Act (PRWORA), Public Law 104-193, was signed into law by President Clinton on August 22, 1996. PRWORA substantially restructured the welfare system in the United States, drastically modifying the extent of benefits as well as delegating the administration and implementation of welfare programs entirely to states. PRWORA eliminated the cash entitlement established in 1935 through Aid to Families with Dependent Children (AFDC). AFDC was replaced with Temporary Assistance to Needy Families (TANF) which is funded by the federal government in the form of state block grants and is administered by states.

Among the changes contained in PRWORA are specific restrictions on welfare programs and federal public benefits for immigrants. Title IV sets forth new requirements on the states to discontinue benefits and deny eligibility for federal, state and local welfare programs to specific classes of immigrants, including qualified immigrants, non-qualified immigrants, and illegal immigrants. Title IV

of PRWORA intersects with federal immigration law (i.e. Illegal Immigration Reform and Immigrant Responsibility Act of 1996), particularly as it relates to the designation or determination of immigration status (Fix and Zimmermann 1995; Acevedo-Garcia, Omata, Ringel et al. 1997; Fix and Tumlin 1997; Fix and Passel 2002b; Fix and Passel 2002a)

The immigrant-specific provisions of PRWORA are *in addition to* all the other limits to welfare benefits established in PRWORA, i.e. as the rest of the population, immigrants are subject to time limits and work requirements. Beyond the overarching goal of reducing the welfare caseload as a whole, Title IV of PRWORA adds the secondary goal of reducing the number of immigrants receiving welfare as well as other public benefits, including Medicaid (Acevedo-Garcia, Omata, Ringel et al. 1997; Fix and Passel 2002a).

States are required to make decisions about eligibility for three major types of immigrants: qualified immigrants (as defined by the Welfare Act) who entered the country before the enactment of PRWORA (i.e. August 22, 1996), non-qualified immigrants, and legal immigrants who entered the country after the enactment of the Act. Under PRWORA, qualified immigrants include permanent residents, asylees, refugees, aliens paroled into the U.S. for at least one year, and aliens whose deportation is being withheld.

The decisions that states need to make regarding federal programs can be classified in three types: 1) immigrant eligibility decisions, i.e. whether immigrants should be covered and which types of immigrants should be covered; 2) economic decisions, i.e. determining the level of benefits to be offered to immigrants; and 3) administrative decisions, i.e. whether to create new state programs or reform current programs to serve as substitute programs to cover immigrants (Acevedo-Garcia, Omata, Ringel et al. 1997).

Among other public benefits, states are authorized to determine the eligibility of qualified aliens for Medicaid, and may use federal matching funds to cover qualified immigrants that were in the United States prior to enactment of PRWORA (i.e. August 1996). States may also offer Medicaid coverage to

post-enactment immigrants during their first five years in the country but they must do so at their own cost, i.e. without federal matching funds (during the five-year ban, states are now allowed to use federal Medicaid funds to cover immigrants). States may determine eligibility for legal qualified immigrants that entered after enactment (post-enactment immigrants) *after* they have completed 5 years of residence in the United States. Additionally, after the initial 5-year ban, for post-enactment legal-qualified immigrants, states must deem the income and resources of the alien's sponsor in determining Medicaid eligibility (Acevedo-Garcia, Omata, Ringel et al. 1997; Morse, Meadows, Rasmussen et al. 1998; Fix and Passel 2002a). Non-qualified and illegal immigrants are not eligible for Medicaid, with the exception of emergency care Medicaid, which must be available to all types of immigrants--including illegal immigrants (Acevedo-Garcia, Omata, Ringel et al. 1997; Morse, Meadows, Rasmussen et al. 1998; Fix and Passel 2002a).

Given the large degree of discretion given to states under PRWORA, potentially welfare reform could have resulted in the termination of Medicaid benefits for most types of immigrants. However, the majority of states have decided to continue Medicaid benefits for all pre-enactment qualified immigrants. Although some states have also opted to provide a substitute program for immigrants losing eligibility for Medicaid, an analysis conducted by the Urban Institute (Zimmermann and Tumlin 1999; Zimmermann, Tumlin and Ost 1999) showed that such programs are fairly limited.

In reviewing the literature on the impact of welfare reform on health and access to healthcare among immigrants, we hope to determine the effectiveness of PRWORA in reducing Medicaid enrollment of immigrants, to determine whether such reductions in Medicaid are due to changes in eligibility or to other factors (e.g. fear/confusion leading to self-selection out of Medicaid), and to determine whether any health outcomes among immigrants have been affected by the enactment of welfare reform.

This review focuses on access to healthcare as measured by insurance status in addition to health outcomes. Initial reviews of the literature resulted in little research on the effects of welfare reform on

health. We searched 4 medical, social science, and demographic databases for articles from 1996 through April 2002: Medline, Sociofile, ProQuest, and Popline. We used these keywords in our analyses: “welfare reform and immigrant” and “welfare reform and foreign-born.” We additionally reviewed references within relevant articles and internet sites of relevant independent research institutions. Our search yielded 65 citations, which were reviewed for criteria relevance. 21 articles were kept for closer inspection, of which 7 articles were qualified for inclusion in our review. Two articles discuss welfare reform and birth outcomes while the remaining 5 examine Medicaid enrollment. Two of the studies comparing Medicaid enrollment rates also report on changes in uninsurance rates. All of the articles, including those on birth outcomes, used Medicaid data.

Using CPS data from 1994 and 1997, Fix and Passel (Fix and Passel 1999) demonstrated that overall, non citizens’ Medicaid coverage fell 22%, compared with a 7% decline among citizen households. Non citizen-headed households below 200% of the poverty line experienced a 19% drop in Medicaid enrollment, while citizens experienced no significant change over this period. Additionally, this comparison showed a decline of 8.8 percentage points, a 33% drop, in Medicaid enrollment of refugees.

Wyn and colleagues found low-income non-citizens to have a similarly large drop in Medicaid coverage (Wyn, Solis, Ojeda et al. 2001). In more recent analyses including data through 1999 Fix and Passel (2002b) report that in families with at least one legal non-citizen adult, Medicaid use experienced a 15% decrease. Declines for legal non-citizen families did not exceed declines by citizen families. When examining only low-income families with children, participation rates remain unchanged statistically (46% vs. 45.5%).

Another important finding of the household analyses is that Medicaid participation by low-income refugee families sharply decreased, by 36%, from 1994-99, with the 1999 rates roughly equal to citizens’ rates of Medicaid. This sharp decrease is of particular interest because refugees were exempted from immigrant eligibility restrictions for 5 years. This steep drop in refugee Medicaid enrollment suggests that factors other than eligibility restrictions or rising incomes contributed to the decline, such as

confusion over eligibility and fear of legal repercussions of seeking assistance – the “chilling effects” of Welfare Reform. Of note, while low-income refugee families did experience a significant decline in Medicaid use, this decline was much less than that for TANF and Food Stamps.

The authors offer several hypotheses for the unchanged and less steeply changed Medicaid enrollment rates. The authors suggest that several government actions may have contributed to the unchanged Medicaid enrollment rates: (1) expanded coverage for children through the creation of the State Children’s Health Insurance Plans, (2) increased outreach at the state and local levels to encourage parents to enroll their children in child health insurance plans, and (3) the issuance of federal guidance that clearly delineated that applications for citizenship would not be adversely affected by receipt of public health assistance. Additionally, the authors highlight the involvement of medical care providers in Medicaid, individuals and entities that stand to lose income if immigrants are dropped from the Medicaid rolls.

Another potential explanation for the maintenance of enrollment rates after the enactment of welfare reform is the provision in PRWORA that guarantees emergency Medicaid for all immigrants, including illegal immigrants. Fix and Passel suggest that although immigrants may not be eligible for standard healthcare through Medicaid, they may seek much of their healthcare through emergency medical services. Moreover, the authors emphasize that their 2002 analysis is better than their prior CPS data analyses because their 1999 analysis did not distinguish between legal and undocumented immigrants, as they do in 2002, because they focus on low-income families with children, and because they add two additional years of welfare reform and SCHIP implementation (Fix and Passel 2002b).

Although the household analyses reported few significant drops in Medicaid among low-income families, analysis of individual level data showed significant declines in Medicaid use for low-income working-age adults citizens (-8%), legal permanent resident aliens (-23%), and refugee aliens (-58%) (Fix and Passel 2002b). Coverage for immigrant children on Medicaid dropped between 1995 and 1999 (Ku and Blaney 2000).

Analysis of changes in uninsurance rates (Medicaid or SCHIP, employer sponsored insurance, other private insurance, other public insurance, uninsured) from 1995 to 1999 indicate a statistically significant decline in Medicaid or SCHIP coverage (-7.7%) and a statistically significant increase (4.0%) for other private insurance for non-citizen children. For citizen children with non-citizen parents, there was a significant decline of 3.5% in Medicaid or SCHIP coverage and a 2.8% increase in uninsured. Citizen children with native parents experienced a significant -3.3% change in Medicaid/SCHIP coverage which coincided with a significant 3.2% increase in employer-sponsored insurance.

Prenatal and Birth Outcomes

Welfare reform policy has also been minimally evaluated for prenatal and birth outcomes. Two studies (Korenbrot, Dudley and Greene 2000; Joyce, Bauer, Minkoff et al. 2001) used birth certificate data in California (Korenbrot, Dudley and Greene 2000; Joyce, Bauer, Minkoff et al. 2001), New York City (Joyce, Bauer, Minkoff et al. 2001), and Texas (Joyce, Bauer, Minkoff et al. 2001) to assess trends in prenatal healthcare coverage, use of prenatal care, and birth outcomes. Using the California electronic birth certificate database, Korenbrot et al. examine annual births to foreign-born women and to US-born women from 1990 to 1997. Their analysis explores the effect of both the welfare reform law in 1996 as well as the passage of California Proposition 187 in 1994.

Joyce and colleagues (Joyce, Bauer, Minkoff et al. 2001) also examined the potential effects of PRWORA on perinatal health and healthcare utilization in a study of Latinas in California, New York City, and Texas that delivered a live infant in 1995 (pre-reform) or 1998 (post-reform). The study used a pre-post test design, comparing the financing of births (Medicaid and self-pay), rates of prenatal care (early initiation of care and prenatal visits), and birth outcomes (low birthweight, very low birthweight, and preterm delivery) of foreign-born Latinas to US born Latinas. The two birth outcome studies found little evidence that the law affected immigrant births outcomes or prenatal care. Joyce et al. cite the absence of an effect in Texas (a state that immediately withdrew benefits for foreign-born individuals

with no supplement or replacement from the state) as particularly salient evidence that there has been no immediate adverse effect of welfare reform on the perinatal health of foreign-born Latinas.

Conclusions

The drastic changes to the public welfare system in the United States stemmed from a growing concern surrounding the growing welfare caseloads. This concern coupled with largely unfounded disquiet that a large proportion of immigrants receive public assistance and that public benefits are an important factor for immigration to the United States resulted in legislation that revoked public assistance, including healthcare, from legal residents of the U.S. as well as denying such assistance to new immigrants.

Many have hypothesized that this profound change in the welfare system will have adverse effects on immigrants' health, along with their financial wellbeing. The few studies that have compared health status and healthcare coverage after the implementation of welfare reform to pre-1996 data have found mixed effects on Medicaid enrollment and no significant effect on birth outcomes.

4. THE IMPACT OF MEDICARE AND MEDICAID ON HEALTH OUTCOMES

The nature of health insurance in the U.S. was transformed in 1965 with the passage of legislation creating Medicare and Medicaid. The 1965 Amendments to the Social Security Act created Medicare and Medicaid to provide insurance coverage for elderly Social Security beneficiaries and needy children (Centers for Medicare and Medicaid Services 2002).

Publicly provided health insurance can potentially achieve many goals including: to increase health care service utilization, to increase equity in insurance coverage, to protect and redistribute income, and to improve health. The goal of this review is to assess one specific dimension of health insurance provided by Medicare and Medicaid, its contribution to improvements in health outcomes.

There have been a series of recent reviews of the evidence relating to the broader question of whether insurance coverage improves health outcomes for those covered. The Kaiser Family Foundation (Hadley 2002), the Robert Wood Johnson Foundation (Levy and Meltzer 2001), and the Institute of Medicine have all sponsored work in this area, including some work still in progress. This review differs in scope and content from those mentioned above. While we are focused on the impact of Medicare and Medicaid, including the nature of service delivery within these programs, the other recent reviews focus more explicitly on insurance coverage. We review the evidence on a single question: what is the impact of Medicaid and Medicare on health outcomes, and how have the programs influenced disparities in health outcomes across sociodemographic groups? Our review necessarily provides a more detailed description of the nature of Medicare and Medicaid and explicit consequences of these programs compared with the other recent reviews. None of the prior reviews focus on Medicaid or Medicare, and no systematic review has compiled evidence to date on the relationship between these programs and health disparities. In literature review we evaluated only studies assessing at least one direct health outcome and included only studies that looked at the impact of Medicaid or Medicare programs excluding the State Children's Health Insurance Program due to lack of information on this program. We focused on program features relating to the expansion of coverage (i.e. Medicaid expansions, expansions of particular benefits).

We have searched major databases including Medline, ProQuest, Jstor, and EconLit for articles relating to the above programs and outcomes. These databases were searched using keywords "Medicare", "Medicaid", and "outcomes". In addition, we have completed a search of websites for a number of foundations and institute. The above search yielded well over 1000 articles on Medicaid and Medicare. To narrow the focus, we eliminated studies if they did not have at least one of the following characteristics: an experimental design, a quasi-experimental design, a time series element, or a

comparison group. These criteria yielded a bibliography of 30 studies. The review included is organized as follows: a discussion of Medicare, Medicaid and section 2 covers Medicare, Section 3 covers Medicaid. a summary of the evidence on the impact of these programs on health and inequality in health.

Medicare

The earliest study examining the impact of Medicare and Medicaid on health is by Davis and Schoen, *Health and the War on Poverty* (Davis and Schoen 1978). Since Davis and Schoen's early work, there has been little research on the question of whether Medicare impacts health outcomes until four recent studies examined how Medicare influences health using the "natural experiment" of aging into Medicare eligibility. Lichtenberg (Lichtenberg forthcoming 2003) studied how Medicare changed utilization and two measures of health: self-reported bed days and mortality. He estimates that Medicare eligibility results a 13 percent reduction in bed days. By analyzing age-specific probabilities of death each decade between 1900 and 1990, Lichtenberg estimates a significant break in the trend of increased mortality at age 65, after Medicare was in effect, in 1970. His time series analyses imply that Medicare eligibility reduced mortality rates among the elderly by 13 percent on average, and raised the probability of surviving to age 75 by 5.1 percentage points.

As with any study, the Lichtenberg study has several limitations. The analysis of bed days is cross-sectional in nature and thus vulnerable to the possibility that non-linearities in the age profile of disease could explain the break in bed days at 65. Furthermore, 65 is the modal retirement age in the U.S., and retirement could potentially cause a break in the age profile of bed days. The mortality analysis is somewhat stronger because of its before-after design, but one cannot rule out the possibility that cohort changes, or Medicare-induced retirement led to the change in the age profile of mortality before and after Medicare, or that other programs at that time could have caused the observed changes in mortality.

In a less direct test of Medicare and Medicaid on health, Lichtenberg (Lichtenberg 2002) used the same time series data on life expectancy to evaluate how public and private medical expenditures relate to changes in life expectancy since 1960. He concludes that public expenditures, rather than private, are

highly correlated with increases in longevity. If causal, the cost of a one-year gain in longevity is approximately \$11,000.

The final studies relating to the impact of Medicare eligibility/coverage on health relates to breast cancer outcomes among women. In two related studies of breast cancer, Decker and Rapaport (Decker and Rapaport 2002b; Decker and Rapaport 2002a) produce estimates that imply that aging into Medicare increases the probability of receiving a mammogram and a physician breast exam by 3 to 9 percent. Aging into Medicare also coincides with a 6 percent reduction in late stage breast cancer diagnoses for white women and a 35 percent reduction in late diagnoses of breast cancer for highly educated black women. Decker and Rapaport conclude that Medicare works to reduce health disparities across educational groups (measured using late stage breast cancer diagnosis) for white women, but not for black women.

The four studies just described represent an improvement compared with other work on the impact of Medicare coverage and eligibility, but they still leave many unresolved questions. The comparison group in all of these studies, the under 65, is somewhat suspect because the age profile of health outcomes is expected to change at older ages, even in a world with equal access to health care across age, education, income, and racial groups. In addition, the age profile of disease and mortality could change with changing cohorts. Most of the studies do not make a direct comparison of Medicare effects before and after the program passage using a control group, and none are strictly experimental with random allocation of states or individuals into Medicare. Only the studies by Decker and Rapaport address the issue of how Medicare influences health disparities, and their analysis covers a relatively specific condition, breast cancer.

The impact of targeted medicare services and interventions

We found only one study meeting our criteria that evaluated targeted services within Medicare. A study by Lave and co-authors (Lave, Ives, Traven et al. 1996) evaluated a randomized intervention relating to prevention/health promotion services for rural elderly in Pennsylvania beginning in 1989. Elderly were randomized into one of two treatment groups to receive health screenings, influenza

immunization, nutritional counseling, smoking & alcohol cessation, and depression/dementia evaluations. Outcomes in the two treatment groups were compared with outcomes in a control group of traditional Medicare beneficiaries. Over the three-year study period, there were no differences in rates of hospitalization for stroke, pneumonia, acute myocardial infarction, or serum cholesterol (Ives, Kuller and Traven 1993).

Medicaid

Most of the literature on Medicaid coverage evaluates changes in health related to the Medicaid expansions to pregnant women and children during the late 1980s and 1990s. We found one study meeting our criteria that analyzed the impact of losing or gaining Medicaid coverage on families including non-pregnant adults (Kasper, Giovannini and Hoffman 2000). Kasper and co-authors used panel data from the Kaiser Family Survey of Health Experiences to examine how changes in insurance coverage impact health outcomes. They assess two measures of health: self-reported health status and self-report of whether the respondent has experienced adverse health as a result of barriers in access to health care. When comparing individuals who lose Medicaid coverage to individuals with continuous coverage, the losers experience a relative decrease in fair/poor health status. One may worry that the results are subject to bias introduced because Medicaid stayers do not look like Medicaid leavers. However, if anything, those remaining on Medicaid continuously have worse health outcomes than those losing coverage. This suggests that the modest relative decline in health status after Medicaid loss may be understated in Kasper and co-authors' analysis.

For the first two decades of the Medicaid program, eligibility for Medicaid among women and children was tied to receipt of Aid to Families with Dependent Children. This limited eligibility to very low-income women and children in single-parent families. Beginning in 1984 states were permitted and later required to extend Medicaid coverage to other groups of children in families with higher income, and two parents. States were also permitted to extend the benefits covered, to provide services such as enhanced prenatal care, or case management for pregnant women. States expanded eligibility and

benefits at different rates providing variation in Medicaid coverage and benefits that allowed researchers to examine the impact of expanded coverage and services on health outcomes.

The expansions of Medicaid coverage and maternal and child health outcomes have been reviewed extensively elsewhere (Levy and Meltzer 2001; Cutler 2002; Hadley 2002), so we simply provide a brief summary of the design for these studies, and the major findings (Piper, Ray and Griffin 1990; Buescher, Roth, Williams et al. 1991; Fossett, Perloff, Kletke et al. 1992; Haas, Udvarhelyi and Epstein 1993; Reichman and Florio 1995; Currie and Gruber 1996b; Currie and Gruber 1996a; Ray, Mitchell and Piper 1997; Baldwin, Larson, Connell et al. 1998; Epstein and Newhouse 1998; Joyce 1998).

In general, the Medicaid expansion studies all exploit the natural experiment created by changes in state laws to extend coverage to women and children with moderate incomes. The most common outcomes studied include rates of low- and very low-birth weight, rates of infant mortality, rates of preterm birth, rates of maternal pregnancy complications at birth, and utilization measures relating to prenatal care. The studies using the above design typically find no effect of Medicaid expansions on health outcomes such as low birth weight or infant mortality.

With one exception (Piper, Mitchel and Ray 1994), the expansion studies described above do not find any impact of Medicaid expansion on the likelihood that women receive adequate prenatal care (Piper, Ray and Griffin 1990; Ray, Mitchell and Piper 1997; Baldwin, Larson, Connell et al. 1998). Most Medicaid expansion studies suffer from a few common limitations: some have no control group, and thus it is not clear that the expansions are causally related to the outcomes of interest; some focus on a single state or locality and are not generalizable; and some studies compare treatment and control groups that differ in important ways such as education, income, or underlying health status.

Two of the most convincing studies in this literature were conducted by Janet Currie and Jon Gruber (Currie and Gruber 1996b; Currie and Gruber 1996a). Currie and Gruber use a national sample over a long time period covering most of the state expansions. They evaluate infant and child health outcomes within states as a function of changes in state Medicaid eligibility rules. To overcome selection

created by differences in preferences and take-up across states, Currie and Gruber simulate eligibility in each state by applying that state's rules to a standardized population. They later use the simulated eligibility rates by state and year as instrumental variables for actual eligibility in a state. Using this cleaner method with a full sample of states, Currie and Gruber estimate that the Medicaid expansions of the 1980s and 1990s led to a 20% rise in eligibility among pregnant women. They estimate that this rise in eligibility led to a 7% decline in infant mortality, but the estimated 2% decline in low birth weight is not statistically significant at standard significance levels (Currie and Gruber 1996b).

Much of the Medicaid expansion literature shows that women typically do not take up the newly available Medicaid coverage until the last 30 days of pregnancy. Thus, the small effects on birth outcomes are not surprising. Currie and Gruber use a similar methodology to evaluate changes in child mortality resulting from the Medicaid expansions. They find that 10 percentage point increase in the number of eligible children would increase the number of children who participate in Medicaid by 1.3 million and reduce child deaths by 5.6 deaths per 10,000 children affected by the expansions (Currie and Gruber 1996a). Some have questioned the plausibility of this large effect given that the majority of childhood deaths are caused by conditions not amenable to medical care such as injuries, congenital anomalies, malignant neoplasms and homicide (Kaestner, Joyce and Racine 2001).

Two studies evaluate the expansions from a slightly different perspective, examining avoidable, or ambulatory care sensitive, hospitalizations. Kaestner et al. and Dafny and Gruber use different sources of hospital discharge data and find that the expansions reduce some avoidable hospitalizations for children (Dafny and Gruber 2000; Kaestner, Joyce and Racine 2001). Both studies use the Medicaid eligibility expansions to identify effects of Medicaid on hospitalizations that are affected by regulatory ambulatory care. Kaestner and co-authors use a simple difference-in-difference approach, comparing those likely to be impacted by the expansions (the near poor) to those unlikely to be affected by the expansions (the "high-income") before and after the expansions (Kaestner, Joyce and Racine 2001). Their results are mixed, but they find that non-asthma hospitalizations fall for the near-poor. Dafny and

Gruber use a strategy similar to that employed by Currie and Gruber, simulating Medicaid eligibility and using simulated eligibility as an instrumental variable to predict Medicaid coverage (Currie and Gruber 1996b; Currie and Gruber 1996a; Dafny and Gruber 2000). Their results are stronger and more precisely estimated than the Kaestner et al. study.

A subset of the expansion literature is the literature on changes in benefits for pregnant women. In addition to changing eligibility thresholds, legislation allowed states to offer enhanced reimbursement to providers delivering comprehensive prenatal services to Medicaid recipients, and 37 states had taken advantage of the legislation by 1992 (Joyce 1998). Using similar methods to those described above, authors have evaluated the impact of programs to expand prenatal health services in Washington state (Baldwin, Larson, Connell et al. 1998) and New York City (Joyce 1998), and presumptive eligibility rules in Tennessee (Piper, Mitchel and Ray 1994). These studies find modest to moderate improvements in birth weight related to expansion of prenatal care services. The study authors were careful to make comparisons for groups unlikely to be affected by the eligibility expansions, to help isolate the independent effect of prenatal services or presumptive eligibility. However, these studies should be interpreted with caution because they are single state or single-city studies without strong control groups and thus the results may not be generalized to other areas.

The expansion literature is one of the few places where one can learn about how Medicaid influences disparities in health outcomes. No one study explicitly evaluates the impact of the expansions on disparities in health, but some of the studies provide implicit evidence on this topic (Piper, Ray and Griffin 1990; Haas, Udvarhelyi and Epstein 1993; Haas, Udvarhelyi, Morris et al. 1993; Currie and Gruber 1996b; Baldwin, Larson, Connell et al. 1998; Epstein and Newhouse 1998; Kasper, Giovannini and Hoffman 2000; Kaestner, Joyce and Racine 2001). The Medicaid expansions had a mixed effect on health disparities in these studies. About half of the studies found no significant impact on health disparities (Piper, Ray and Griffin 1990; Haas, Udvarhelyi and Epstein 1993; Haas, Udvarhelyi, Morris et al. 1993; Epstein and Newhouse 1998), and the remainder found slight improvements for

the health of the poor or less-educated relative to other groups (Currie and Gruber 1996b; Baldwin, Larson, Connell et al. 1998; Kasper, Giovannini and Hoffman 2000; Kaestner, Joyce and Racine 2001).

Impact of targeted Medicaid services and interventions

There are several studies that assess the impact of particular Medicaid services on health outcomes. One study evaluates a randomized trial of augmented prenatal care for blacks, but outside of the context of Medicaid expansions and found no significant differences in any health indicators between groups (Klerman, Ramey, Goldenberg et al. 2001).

Another health outcome studied in relation to Medicaid relates to abortion services. Two published studies assess the impact of Medicaid funding restrictions on teen childbearing (Meier and McFarlane 1994; Kane and Staiger 1996). Meier and co-authors (Meier and McFarlane 1994) examine how Medicaid funding restrictions impact births to teenagers, birth weight and preterm birth using fixed effect models of state level data over time between 1982 and 1988. They conclude that each additional Medicaid funded abortion per 1000 women of childbearing age leads to .673 fewer births to teenagers per 1000 teenage women, .024 percentage points fewer low-birth weight babies, .027 percentage points fewer premature births, and .263 percentage points fewer births with late or no prenatal care.

The Meir and McFarlane study's strength is that it uses panel data over time, controlling for differences across states with state effects. It also controls for other important determinants of teen birth rates, such as family planning spending. The weakness is that the study uses aggregate level data with few controls, they must assume that changes in Medicaid abortion funding are random, and their measure of abortion funding, abortions per 1000 women 15 to 44 is subject to selection because it reflects both state Medicaid policy and the propensity of women to have abortions. States with more flexible policies towards abortion generally have higher rates of abortion, but one cannot infer a causal relationship from this fact.

Kane and Staiger study the impact of Medicaid restrictions on abortion funding (as well as distance to the nearest abortion provider and whether a state has parental consent laws) using fixed effect models of county-level data between 1973 and 1988 to estimate county-year rates of teenage births separately for whites and non-whites (Kane and Staiger 1996). They include multiple measures of abortion access (distance to nearest abortion provider, whether state has parental consent law, Medicaid funding restrictions) and they measure Medicaid funding with indicator variables for whether a state covers abortions under Medicaid or not. This definition of the abortion funding variable circumvents the bias implicit in measures of abortions per population, and requires only the assumption that within states, the timing of removing or adding Medicaid funding for abortions is random. A further strength of the Kane and Staiger study is that the panel straddles the period in which the Hyde Amendment was enacted. This allows them to use the changes in state funding of abortion that coincided with the Hyde amendment to identify effects of Medicaid restrictions. Changes in state funding at the time the Hyde amendment was passed may be subject to less selection bias than changes that occur due to changes in state legislative or administrative policy.

In contrast to the conventional wisdom regarding abortion restrictions, Kane and Staiger find that Medicaid restrictions on abortion funding actually decrease teen birth rates by about 1.6 percent for every 10 percent of the population living in poverty. Their results are statistically significant only for the white population. The decrease is largely due to in-wedlock births. Kane and Staiger hypothesize that this surprising result occurs because teenage girls who would like to marry and have children can use abortion access to protect themselves in the event that their partners do not cooperate when a pregnancy occurs (Kane and Staiger 1996). Like the Meir and McFarlane study, Kane and Staiger are limited by their ecological data and a relatively small set of controls. In addition, it is difficult to interpret the independent effect of Medicaid funding restrictions estimated in models that control for distance to abortion provider since Medicaid funding restrictions necessarily increase the distance to the nearest abortion provider. Conclusions of Medicare/Medicaid review

There is surprisingly little evidence on the impact of Medicare and Medicaid on health outcomes and virtually no evidence on how these program influence health disparities. Some studies link Medicare and Medicaid to reductions in mortality and modest improvements in selected health outcomes. Medicare has been linked to increases in life expectancy, especially at older ages. Medicaid has been associated with reductions in infant and child mortality. While Medicaid expansions have led to substantial increases in service use, expanded Medicaid coverage has not led to significantly higher birth weight, lower rates of preterm birth and low birth weight, or a reduction in other adverse maternal and infant health outcomes. The reductions in mortality from both Medicare and Medicaid have coincided with large increases in health care spending.

The most striking result from our review of Medicare and Medicaid is what we have not learned. In Medicare, we know shockingly little about the impact of any aspect of this program on health. Our knowledge of Medicaid centers quite narrowly on its health benefits for infants, pregnant women, and children. For both Medicare and Medicaid, we have little information about the mechanisms through which these programs impact health, and there is a dearth of evidence on how these programs relate to health disparities across socioeconomic groups.

The Medicaid literature is dominated by studies of infants, and to a lesser extent women and children. Although children comprise about half of Medicaid recipients, they account for under 15 percent of Medicaid spending. We know very little about adults. The nature of health conditions for infants and children differs greatly from conditions among other age groups. Medicaid's success centers largely around the acute event of child birth and in providing access to medically intensive care for critically ill infants at birth, or for children with acute infections or other acute events. The diseases of adults, the elderly and disabled are chronic in nature, and thus the care required and the ability to influence health outcomes may differ greatly for these groups. Further research should determine how Medicaid influences health for groups besides children.

5. CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

Many public social and economic policies are implemented with the explicit aims of reducing disparities in specific outcomes in the population. Some are designed as “safety net” or means-tested measures to protect vulnerable or particularly disadvantaged populations (TANF), others are universal policies (social security) that have the effect of reducing disparities even though benefits are spread across the population. Most social and economic policies relating to income, housing, immigration or educational policy were not designed with the intention of improving health outcomes at either a population level or for specific groups who may benefit by such policies. Nonetheless, as we understand the ways in which economic and social inequality impact physical and mental health, such policies become important potential levers which may serve either to reduce economic inequality or to reduce the influence of such inequality on health outcomes. Our aim in this review was to assess the degree to which we could evaluate whether broad social and economic policies have in fact this unintended consequence. Work in the United Kingdom, several countries in Europe, and at the WHO have recently made recommendations that more intersectoral work in this area occur (Mackenbach and Bakker,2002).The UK, Sweden and the Netherlands have made specific policy related recommendations to monitor inequalities in health. Within the field of public health, there have been several inquiries into developing health impact assessments for public policies along the lines of environmental impact assessments now in place for many policies. Thus, our review served as an initial foray into uncovering the evidence linking social and economic policies to population level health outcomes or to reductions in social, economic or racial/ethnic disparities in health.

Our review uncovered much less information than we suspected on the potential links between non-health care related policies and health outcomes. In fact, perhaps the most important and striking aspect of our review is how little we know about whether major social and economic policies, even those relating to Medicaid and Medicare, had any impact at all on children, adolescents and adults. Among the findings to date, most of the information is on infants and children and very little on middle aged and

older adults. The second relates to the lack of available data on whether policies reduced health disparities. Very few studies provided any reliable data in this regard. Finally, when health data were available it was rarely the kind of data on morbidity, mortality or functional status that investigators in public health and medicine rely on for accurate estimates of health status. While we learned some about the impact that public policies may have on reducing health inequalities in the United States, by far the most striking finding was that we have so little information in this area. On one hand, this is quite disheartening. On the other hand, it points to the critical need to undertake rigorous evaluations of the health impacts of social and economic policies because they may play a pivotal role in (1) either creating or diminishing economic inequality per se or (2). blunting or moderating the impact of economic inequality on health outcomes.

In our Russell Sage project, we are linking high quality health data on birth outcomes, mortality and disease onset with information on several public policies. Our hope is that through this linkage we will come up with stronger evidence on the relation between health and public policy and subsequently be better able to lay the foundation for future work in this area. We recommend that in future evaluations of social and economic policies, especially those that are built on strong experimental study designs, collaborations with investigators in public health and medicine occur at the early stages of evaluation planning. The strongest findings to date are those that link the MTO experience to health outcomes and even many of those health data were collected after the start-up of the intervention.

We believe that strategies to reduce economic inequalities in health are likely to be most effective when they embrace policies ranging from income maintenance, housing, family-friendly work policies, to educational policies. These policies may not only reduce disparities but contribute to the improvement of overall levels of population health. The US currently ranks in the bottom third of life expectancy among OECD countries while the percentage of GNP that we spend on healthcare escalates and is the highest in the world. The gap between rich and poor in the US on a number of health indicators is very large and there is some evidence that it is growing with increasing economic inequality. We need to understand

more fully the effect that both means-tested as well as universal public policies may have on the reducing health disparities and improving the health of the public overall.

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